

Town of Branford  
Project No. L014-0002  
Main Street Reconstruction and Rehabilitation  
Addendum #3

Date: March 18, 2025

Submission Date: **March 26, 2025 no later than 2:00pm (REVISED)**

Prospective bidders, and all those concerned, are hereby informed that the following is made a part of the bid documents, which should be amended as follows:

**WRITTEN QUESTIONS AND CLARIFICATIONS**

**For clarification** – All questions received between March 7<sup>th</sup> and March 13<sup>th</sup> are included within this Addendum #3. See Addendum #2 for questions received prior to March 7<sup>th</sup>.

**Clarifications**

- 1) *W&S Clarification: Relocate existing granite post at station 12+50 20'L to be located in the adjacent plant bed at 12+21, as directed by the Engineer.*

*Cost to be noted on revised Bid Form as Item #0202598A Relocate Stone Pillar*

- 2) *W&S Clarification: Contractor to reset (1) existing memorial plaque located at station 20+48 25'L along the streetscape to a nearby location within proposed pavers.*

*Cost to be noted on revised Bid Form as Item #0947305A Reset Existing Dedication Plaque*

- 3) *W&S Clarification: Remove and relocate the existing photocell from the Branford Board of Education building located at 111 East Main Street to the top of the existing service enclosure.*

*Cost to be noted on revised Bid Form as Item #1003901A Remove and Relocate Photocell*

- 4) *W&S Clarification: Extend decorative paver improvements around 2-6 East Main Street property to the Northwest, replacing existing decorative paver walks. Existing decorative paver outdoor dining space to remain.*

*Approximate additional amounts:*

- *Removal of existing pavement and related items: 1000 SF*
- *Removal, Transport, Cleaning, and Delivery to Store Existing Granite Curb: 90 LF*
- *Reset Existing Granite Curb: 90 LF*
- *Brick Paver Walk: 1000 SF*
- *Granite Paver Band: 45 LF*

- 5) *W&S Clarification: The anticipated start date is May 1, 2025, with substantial completion after 240 working days at August 29, 2026.*
- 6) *W&S Clarification: Removed Item #1107002 – Pedestrian Push Button and Sign Pedestal Mounted. Updated bid form will reflect this change. There are 10 total push buttons being installed on the project and they are paid for under Item #1107011A – Accessible Pedestrian Signal and Detector (Type A).*

### **Bidder Questions**

- 7) *Refer to Item #0101133A – Disposal of Contaminated Railroad Ties.*
  - a. *CTDOT specs have changed, they are classifying this type of waste as construction & demolition debris*
  - b. *All facilities listed in the specifications are not accepting railroad ties. Are there alternate facilities you can list or can we use the CTDOT current specs for this type of waste?*

#### **W&S Response:**

##### **1a. W&S Response:**

**See the attached Environmental Report amendment that discusses stockpiling and classification of construction waste. Disposal of materials depends on the permit of the waste facility.**

##### **1b. Contractor to locate facilities that accept waste items from the project as classified. Submit facility for record.**

- 8) *Is the saw cutting required in front of the granite curb in order to remove it or install it payable under bid item 0202501 or 0202529?*

#### **W&S Response:**

**Sawcutting will not be paid separately and shall be included in the cost of the removal and/or installation of the Granite Stone Curbing.**

- 9) *Is the saw cutting required to install drainage or electrical lines in the roadway payable under bid item 0202501 or 0202529?*

**W&S Response: Sawcutting will not be paid separately and shall be included in the cost of the drainage or electrical items, if required.**

- 10) *Does the Town acknowledge that there will be disruption to the business when the actual work of sidewalk removal and replacement is done directly in front of the business and is unavoidable?*

#### **W&S Response:**

**Yes, but entrances must remain accessible during business hours. Please refer to Item #0971001A – Maintenance and Protection of Traffic.**

- 11) *Is there a limit as to how much sidewalk area can be disturbed at one time?*

**W&S Response: Pedestrian access to building entrances shall be maintained as described in Item #0971001A – Maintenance and Protection of Traffic. Temporary Transitions shall be provided as needed and included in the cost of Maintenance and**

**Protection of Traffic. No defined sidewalk area shall be open/unfinished for longer than 7 calendar days without written approval of the Town.**

12) *There is no pay item for 6" curb. All the tree box curbs scale 6" wide. Refer to dwg. DET 15 detail 5 states 6" wide. Also refer to dwg. DET 16 detail 4 for the bioretention basin which shows 6" curb.*

**W&S Response:**

**See addendum #2, question #3. Granite Curb – Type 2 is to be included in the cost of the tree pit item.**

13) *Please verify that the dowels are required behind the granite curb as per dwg. DET 12 details 1,2 and 3. This is an expensive item and appears to be superfluous. Verify that these are ½" diameter smooth dowels and are plain and not galvanized.*

**W&S Response:**

**See addendum #2, question #1.**

**Yes, smooth plain dowels**

14) *Where there is 8 inches of concrete in driveways and Crosswalks, please clarify what is required for the reinforcement.*

**W&S Response:**

**See detail 2/DET-12 Brick Pavers on Concrete-Vehicular. Revise noted reinforcing to "welded steel wire fabric 4x4 W6.5xW6.5 min."**

15) *Under what item is the recessed curb in the decorative crosswalks paid. What is the width of the granite recessed curb.*

**W&S Response:**

**See addendum #2, question #14.**

16) *Please add an item for tree protection on the bid sheet.*

**W&S Response:**

**Yes. See Item #0915002A on the updated bid form.**

17) *Bid Item 0202563A Removal of Trolley Tracks is by the LF. Is this payable by the LF of track, which consists of 2 rails or by the LF of rail?*

**W&S Response: The quantity is for the total linear footage of rail.**

18) *Bid Item 0202100 Rock Excavation has a quantity 350 CY. Is this for rock excavation under the roadway area? Where is this located as the borings show no rock.*

**W&S Response: This is a contingency item for any rock that is encountered during full depth roadway excavation.**

19) *There is no bid item for trench rock or is that what Bid Item 0202100 is meant to be?*

**W&S Response: A pay item for Rock in Trench Excavation – 0'-10' Deep will be added to the contract. See Item #0205004 on attached revised bid form.**

20) *Does the Contractor have the option to work nights to do this project?*

**W&S Response:**

**The contractor will be allowed to perform night work as permitted by the town of Branford and with at least 7 days notice. Night work will only be allowed on a very limited basis with show of cause by the contractor and approval by the Town of Branford. The Town of Branford reserves the right to deny any request for night work.**

21) *Are the use of detours acceptable to do this project? If so can you provide an approved detour plan or must the Contractor propose one.*

**W&S Response: Detours are acceptable as approved by the Town and with at least 7 days notice. Contractor is responsible for providing the detour plan for approval by the Town/Engineer.**

22) *Can the binder course asphalt paving be performed every 2 weeks instead of weekly during the construction of the roadway?*

**W&S Response: The full thickness of the binder course must be installed at the end of each work week for the area of roadway that was disturbed, unless the area is or is scheduled to be closed for an approved detour.**

23) *This entire project is considered to be an AOEC. Spec. Section 0101000A Environmental Health and Safety mentions the requirement of a Health & Safety Officer. How often does this person have to be on the jobsite? Can these duties also be the responsibility of a Contractors supervisor?*

**W&S Response:**

**See Addendum #2, question #6 response.**

24) *Please provide a pay item and detail for the temporary asphalt roadway repair needed to go with the drainage pipe trenching and electrical trenching.*

**W&S Response: Detail is included on Sheet DET-3. See revised bid form that includes Item #0406002A – Temporary Pavement.**

25) *Can you provide a breakdown for Item No. 0653002 Clean Drainage System LS to a per LF bid item by the pipe diameter?*

**W&S Response: This item will remain as Lump Sum. Majority of expected work is cleaning out existing catch basins.**

26) *Addendum 2 has been issued and creates confusion re. the WSA. Response No. 7 indicate the location as being 2 miles away but not exactly where.*

a. *Where is the location?*

**Owner Response: The WSA will utilize an area within 48-86 Tabor Drive.**

b. *Is there site preparation required and subsequent restoration?*

**Owner Response: Site will not require any site preparation other than the requirements specified in Item #0101128A. Restoration shall meet the requirement of Item #0101128A.**

c. *Is there existing asphalt there?*

**Owner Response: The site is not a paved surface.**

- d. *It refers to DET-1 for temporary stockpile which shows no precast concrete bins and a single stockpile. Spec. Section #0101128A mentions the use of a WSA constructed out of bins as is the normal way it is done to aid in the confinement and testing.*

**W&S Response: DET-1, the revised environmental letter and section 0101128A provide guidance on minimum practices. Contractor's to determine their own means and methods to achieve these requirements.**

- e. *Is the WSA to be made out of bins and dismantled or not?*

**W&S Response: If the contractor chooses to construct bins out of concrete blocking, then yes the contractor is responsible for dismantling, removing, and restoring the area to its original condition at the completion of the project.**

- 27) *The specifications for #1010039A – Precast Polymer Handhole Type II says to install a Quazite C16173002A009 cover. But I'm being told by the factory that you "cannot put a C16173002A009 on the PG style box. The C16173002A is for an FRP (fiberglass reinforced polymer) Box, which will not fit the standard PG1730."*

*How would you like to Proceed?*

**W&S Response: Replace the cover model listed with "PG1730HH0017"**

- 28) *Where on this project does the concrete road repair detail apply that is shown on Sheet DET-3?*

**W&S Response: Sheet DET-3 is a CTDOT Guide Sheet, so not every detail on that sheet applies to this project.**

- 29) *It may be impossible to remove the existing brick pavers on concrete base where they abut all the buildings without damaging the various exteriors in direct contact to a certain degree. Is the Contractor allowed any leeway for replacement material if there is some damage and the material cannot be replicated because it is no longer made?*

**W&S Response:**

**There is no concrete base under existing brick pavers per test pit results. Contractor shall be responsible for providing an equivalent replacement for any damaged material as approved by the Town/Engineer.**

- 30) *The following are some questions all regarding the Bioretention Garden fencing shown on DET-16 and DET-19.*

- a. *Are they matching existing from somewhere else? If so, can they include some detailed pictures?*

**W&S Response: Bioretention Fencing does not match existing fencing in Branford. Similar fencing has been used in other municipalities such as New York City and Hartford. Submit sample panel for review and approval of quality.**

- b. *Are the 2" x 2" posts really to be solid?*

**W&S Response: yes**

- c. *Assuming the posts are not solid, flat plate post caps welded on?*

**W&S Response: Beveled top corner is acceptable.**

d. *How big are the base plates?*

**W&S Response: 4" x 4"**

e. *Hot dip galvanize everything after fabrication?*

**W&S Response: Hot dip and galvanize components of similar size and assembly.**

**Provide powder coat finish on all components. Item #0952103.1A**

f. *Powder coat, or paint system – if paint need specs.*

**W&S Response: See attached revised Item #0952103.1A**

g. *Color?*

**W&S Response: Powder Coat Finish to be black. See revised Item #0952103.1A**

h. *Stainless steel anchorages?*

**W&S Response: Drill holes in the concrete. Insert concrete anchors into the holes.**

**Secure post using stainless steel bolts. Field weld panels to posts. Item**

**#0952103.1A**

i. *Covers for the base plates could be a problem as they would be an off-the-rack item for custom posts/plates, likely having a different finish for one thing.*

**W&S Response: Submit cover with best match for review and approval during submittal process.**

31) *Are we putting a new handhole at the existing lights poles?*

**W&S Response: yes**

32) *And are we refeeding the existing light poles with new conductors?*

**W&S Response: yes**

33) *Are the mast arms and signals getting painted also or just what's on sheet EL-1*

**W&S Response: Mast arms and signals are to be painted.**

34) *I also see (99) light pole foundations and only (49) new light poles.*

**W&S Response: New and existing lights are getting foundations. Quantities to match bid form.**

35) *I did not see an item for temporary Paving. How do we get paid for this?*

**W&S Response: See the revised bid form that includes Item #0406002A – Temporary Pavement.**

36) *In reference to EL-6 please identify which Details are Item no. 1002102; light Standard Foundation - Type II and which are Item No.1002103 Light Standard Foundation.*

**W&S Response:**

**Item 1002103 Light Standard Foundation to include ornamental light pole foundations. This includes foundations for Site Lighting Type 1,2,3,&5 and as detailed on EL-6. Qty 99**

**Item 1002102 Light Standard Foundation -Type II to include new cobra head fixtures light pole foundations. This includes foundations for Site Lighting Type 7. Qty 7. Foundation to be similar to the Ornamental Light Pole Foundation as detailed on EL-6, with the exceptions being to provide a base sized at 26" diameter at a 6'-6' depth.**

Respectfully Submitted,

John M. Hoefflerle, PE, CFM  
Town Engineer

Please acknowledge receipt of the addendum below and submit with your bid submittal.

**Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Company:** \_\_\_\_\_

**2. THIS BID IS DETERMINED AS FOLLOWS:**

**PROPOSAL ITEMS**

NOTE: Bidder must bid on each item. All entries in the entire proposal must be made clearly and in ink; prices must be written in both words and figures. In case of discrepancy, the written unit price shall govern. (Bidders should insert extended item total obtained from quantities and unit prices).

<u>Item No.</u>	<u>Estimated Quantity</u>	<u>Brief Description: Unit or Lump Sum Bid in Both Words and Figures</u>	<u>Total in</u>
0101000A	1 L.S.	Environmental Health and Safety, per Lump Sum \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0101117A	3600 C.Y.	Controlled Materials Handling, per Cubic Yard \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0101128A	1 L.S.	Securing, Construction and Dismantling of a Waste Stockpile and Treatment Area, per Lump Sum \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0101133A	200 Ton	Disposal of Contaminated Railroad Ties, per Ton \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0201001A	1 L.S.	Clearing and Grubbing, per Lump Sum \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0202000	6200 C.Y.	Earth Excavation, per Cubic Yard \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____



<u>Item No.</u>	<u>Estimated Quantity</u>	<u>Brief Description: Unit or Lump Sum Bid in Both Words and Figures</u>	<u>Total in</u>
0202100	350 C.Y.	Rock Excavation, per Cubic Yard  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0202315A	5000 Ton	Disposal of Controlled Materials, per Ton  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0202452A	2 Ea.	Test Pit, per Each  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0202501	850 L.F.	Cut Concrete Pavement, per Linear Foot  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0202502	11400 S.Y.	Removal of Concrete Pavement, per Square Yard  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0205004	100 CY	Rock in Trench Excavation, 0'-10' Deep, per Cubic Yard  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0202529	440 L.F.	Cut Bituminous Concrete Pavement, per Linear Foot  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____

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0202563A	4000 L.F.	Removal of Trolley Tracks, per Linear Foot  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0202598A	1 EA	Relocate Stone Pillar, per Each  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0202911A	1 L.S.	Pre-Construction Documentation Exterior, per Lump Sum  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0202912A	1 L.S.	Pre-Construction Documentation Interior, per Lump Sum  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0209001	12200 S.Y.	Formation of Subgrade, per Square Yard  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0212000	3200 C.Y.	Subbase, per Cubic Yard  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0219001	1500 L.F.	Sedimentation Control System, per Linear Foot  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____

<u>Item No.</u>	<u>Estimated Quantity</u>	<u>Brief Description: Unit or Lump Sum Bid in Both Words and Figures</u>	<u>Total in</u>
0219011A	43 EA.	Sedimentation Control System at Catch Basin, per Each \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0304002	1320 C.Y.	Processed Aggregate Base, per Cubic Yard \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0406002A	2000 S.Y.	Temporary Pavement, per Square Yard \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0406170	2690 Ton	HMA S1.0, per Ton \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0406172	1350 Ton	HMA S0.375, per Ton \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0406236	2350 GAL.	Material for Tack Coat, per Gallon \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0406600	1350 Ton	Material Transfer Vehicle, per Ton \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____

<u>Item No.</u>	<u>Estimated Quantity</u>	<u>Brief Description: Unit or Lump Sum Bid in Both Words and Figures</u>	<u>Total in</u>
0406999A	5,400 EST.	Asphalt Adjustment cost (Estimated Cost), per Est \$ <u>One</u> _____ Dollars and <u>zero</u> Cents (\$ <u>1.00</u> )	\$ <u>5,400</u>
0586001.10	15 EA.	Type 'C' Catch Basin - 0'-10' Deep, per Each \$ _____ _____ Dollars and _____ Cents (\$ _____ )	\$ _____
0586001.20	2 EA.	Type 'C' Catch Basin - 0'-20' Deep, per Each \$ _____ _____ Dollars and _____ Cents (\$ _____ )	\$ _____
0586013.10	10 EA.	Offset Type 'C' Catch Basin - 0'-10' Deep, per Each \$ _____ _____ Dollars and _____ Cents (\$ _____ )	\$ _____
0586018.10	1 EA.	Offset Type 'C-L' Catch Basin - 0'-10' Deep, per Each \$ _____ _____ Dollars and _____ Cents (\$ _____ )	\$ _____
0586040.10	1 EA.	Type 'C-L' Catch Basin - 0'-10' Deep, per Each \$ _____ _____ Dollars and _____ Cents (\$ _____ )	\$ _____
0586500.10	1 EA.	Manhole - 0'-10' Deep, per Each \$ _____ _____ Dollars and _____ Cents (\$ _____ )	\$ _____

<u>Item No.</u>	<u>Estimated Quantity</u>	<u>Brief Description: Unit or Lump Sum Bid in Both Words and Figures</u>	<u>Total in</u>
0586750	13 EA.	Type 'C' Catch Basin Top, per Each \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0586780	11 EA.	Manhole Frame and Cover, per Each \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0586790.10	7 EA.	Remove Drainage Structure - 0'-10' Deep, per Each \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0653002	1 L.S.	Clean Drainage System, per Lump Sum \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0686000.12	600 L.F.	12" R.C. Pipe - 0'-10' Deep, per Linear Foot \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0686000.15	220 L.F.	15" R.C. Pipe - 0'-10' Deep, per Linear Foot \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0686000.18	125 L.F.	18" R.C. Pipe - 0'-10' Deep, per Linear Foot \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____

<u>Item No.</u>	<u>Estimated Quantity</u>	<u>Brief Description: Unit or Lump Sum Bid in Both Words and Figures</u>	<u>Total in</u>
0686000.24	120 L.F.	24" R.C. Pipe - 0'-10' Deep, per Linear Foot  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0686002.12	800 L.F.	12" R.C. Pipe (Class V) - 0'-10' Deep, per Linear Foot  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0686002.15	40 L.F.	15" R.C. Pipe (Class V) - 0'-10' Deep, per Linear Foot  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0686900	1 EA.	Concrete Pipe Connection, per Each  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0813012	2300 L.F.	5" X 18" Granite Stone Curbing, per Linear Foot  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0813013	870 L.F.	5" X 18" Granite Curved Stone Curbing, per Linear Foot  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0813015A	290 L.F.	5" X 20" Granite Stone Curbing, per Linear Foot  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____

<u>Item No.</u>	<u>Estimated Quantity</u>	<u>Brief Description: Unit or Lump Sum Bid in Both Words and Figures</u>	<u>Total in</u>
0813016A	25 L.F.	5" Granite Stone Curbing (Special), per Linear Foot  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0813445A	21 EA.	Radial Granite Curb Driveway Return, per Each  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0814002A	1000 L.F.	Reset Existing Granite Stone Curbing, per Linear Foot  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0814009A	5000 L.F.	Removal, Transport, Cleaning and Delivery to store, per Linear Foot  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0915002A	45 EA.	Tree Protection, per Each  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0921001	450 S.F.	Concrete Sidewalk, per Square Foot  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0921006A	3500 S.F.	Brick Paver Sidewalk Ramp, per Square Foot  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____

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0921015A	110 L.F.	Granite Paver Band, per Linear Foot  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0921018A	52020 S.F.	Brick Paver Walk, per Square Foot  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0921048	400 S.F.	Detectable Warning Surface, per Square Foot  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0922050A	4565 S.F.	Decorative Crosswalk, per Square Foot  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0922500	200 S.Y.	Bituminous Concrete Driveway (Commercial), per Square Yard  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0922507A	3000 S.F.	Brick Paver Driveway, per Square Foot  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0942001	6 Ton	Calcium Chloride for Dust Control, per Ton  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____



<u>Item No.</u>	<u>Estimated Quantity</u>	<u>Brief Description: Unit or Lump Sum Bid in Both Words and Figures</u>	<u>Total in</u>
0943004A	1 L.S.	Dust Control, per Lump Sum \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0944000	2400 S.Y.	Furnishing and Placing Topsoil, per Square Yard \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0947207A	4 EA.	Bike Stand, per Each \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0947302A	1 L.S.	Remove, Refurbish and Reset Bus Shelter, per Lump Sum \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0947305A	1 EA.	Reset Existing Dedication Plaque, per Each \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0949056.1	649 EA.	Aronia Melanocarpa 'UConnAM012', Ground Hug Black Chokeberry, #1 Container, per Each \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0949080	15 EA.	Clethra Alnifolia 'Hummingbird', Hummingbird Summersweet, #1 Container, per Each \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____

<u>Item No.</u>	<u>Estimated Quantity</u>	<u>Brief Description: Unit or Lump Sum Bid in Both Words and Figures</u>	<u>Total in</u>
0949157	94 EA.	Helenium Autumnale 'Fuego', Mariachi Fuego, #1 Container, per Each  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0949360	1 EA.	Prunus Sargentii 'JFS-KW58', Pink Flair Sargent Cherry, 2"-2.5" Cal., per Each  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0949405	242 EA.	Rhus Aromatica 'Gro-Low', Gro-Low Fragrant Sumac, #1 Container, per Each  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0949493	6 EA.	Ulmus Americana 'Princeton', Princeton American Elm, 2.5"-3" Cal., per Each  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0949520	420 EA.	Sporobolus Heterolepis 'Tara', Tara Prairie Dropseed, #1 Container, per Each  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0949716	3 EA.	Cornus X Rutgersensis 'Rutgan', Stellar Pink Dogwood, 2.5"-3" Cal., per Each  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0949770	1 EA.	Acer Rubrum 'October Glory', October Glory Red Maple, 2.5"-3" Cal., per Each  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____

<u>Item No.</u>	<u>Estimated Quantity</u>	<u>Brief Description: Unit or Lump Sum Bid in Both Words and Figures</u>	<u>Total in</u>
0949874.1	2 EA.	Liquidambar Styraciflua 'Happdell', Happidaze Sweet Gum, 2.5"-3" Cal., per Each  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0949957.1	1 EA.	Liriodendron Tulipifera, Tulip Poplar, 2.5"-3" Cal., per Each  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0949986	1 EA.	Quercus Rubra, Red Oak, 2.5"-3" Cal., per Each  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0950019A	2400 S.Y.	Turf Establishment - Lawn, per Square Yard  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0952103.1A	1 EA.	Rain Garden Planter – Site No. 1, per Each  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0952104.1A	8 EA.	Tree Pit – Type 1 Typical, per Each  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0952104.2A	1 EA.	Tree Pit – Type 1 Special, per Each  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____

<u>Item No.</u>	<u>Estimated Quantity</u>	<u>Brief Description: Unit or Lump Sum Bid in Both Words and Figures</u>	<u>Total in</u>
0952105.1A	15 EA.	Tree Pit – Type 2 Typical, per Each \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0952105.2A	1 EA.	Tree Pit – Type 2 Special – Site No. 1, per Each \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0952105.3A	1 EA.	Tree Pit – Type 2 Special – Site No. 2, per Each \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0952105.4A	1 EA.	Tree Pit – Type 2 Special – Site No. 3, per Each \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0952106.1A	6 EA.	Tree Pit – Type 3 Typical, per Each \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0970006	200,000.00	Traffic Person (Municipal Police Officer), per EST. \$ <u>One</u> _____ _____ Dollars and <u>zero</u> Cents (\$ <u>1.00</u> )	\$ <u>200,000</u>
0970007	1500 HR.	Traffic Person (Uniformed Flagger), per Hour \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____

<u>Item No.</u>	<u>Estimated Quantity</u>	<u>Brief Description: Unit or Lump Sum Bid in Both Words and Figures</u>	<u>Total in</u>
0971001A	1 L.S.	Maintenance and Protection of Traffic, per Lump Sum \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0975004	1 L.S.	Mobilization and Project Close Out, per Lump Sum \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0977001	50 EA.	Traffic Cone, per Each \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0978002	30 EA.	Traffic Drum, per Each \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0980020	1 L.S.	Construction Surveying, per Lump Sum \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0992086A	1 EA.	Drinking Fountain, per Each \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
0992090A	30 EA.	Bench, per Each \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____

<u>Item No.</u>	<u>Estimated Quantity</u>	<u>Brief Description: Unit or Lump Sum Bid in Both Words and Figures</u>	<u>Total in</u>
0992103A	19 EA.	Trash Can, per Each \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1001002	5745 L.F.	Trench and Backfilling – Type I, per Linear Foot \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1002102	7 EA.	Light Standard Foundation – Type II, per Each \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1002103	99 EA.	Light Standard Foundation, per Each \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1002201	1 EA.	Traffic Control Foundation – Span Pole, per Each \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1002203	10 EA.	Traffic Control Foundation – Pedestal – Type I, per Each \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1003585A	17 EA.	Decorative Light Pole with Single Luminaire, per Each \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____

<u>Item No.</u>	<u>Estimated Quantity</u>	<u>Brief Description: Unit or Lump Sum Bid in Both Words and Figures</u>	<u>Total in</u>
1003586A	6 EA.	Decorative Light Pole with Twin Luminaires, per Each \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1003595A	7 EA.	Decorative Light Pole and Light Fixture (Street), per Each \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1003901A	1 EA.	Remove and Relocate Photocell, per Each \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1005592A	19 EA.	LED Decorative Luminaire (Street), per Each \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1005593A	15 EA.	LED Upgrade Twin, per Each \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1005594A	42 EA.	LED Upgrade Single, per Each \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1008115	500 L.F.	2" Rigid Metal Conduit in Trench, per Linear Foot \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____

<u>Item No.</u>	<u>Estimated Quantity</u>	<u>Brief Description: Unit or Lump Sum Bid in Both Words and Figures</u>	<u>Total in</u>
1008127A	8905 L.F.	2" Polyvinyl Chloride Conduit in Trench, per Linear Foot  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1008215A	1100 L.F.	2" Rigid Metal Conduit Under Roadway, per Linear Foot  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1010001	5 EA.	Concrete Handhole, per Each  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1010039A	112 EA.	Precast Polymer Concrete Handhole Type II, per Each  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1012036A	21000 L.F.	#6 AWG Copper Conductor, per Linear Foot  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1012038A	7000 L.F.	#8 AWG Copper Conductor, per Linear Foot  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1015002	250 L.F.	No. 10 Bare Copper Grounding Conductor, per Linear Foot  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____



<u>Item No.</u>	<u>Estimated Quantity</u>	<u>Brief Description: Unit or Lump Sum Bid in Both Words and Figures</u>	<u>Total in</u>
1102048A	10 EA.	8' Ornamental Aluminum Pedestal, per Each  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1103026	1 EA.	24' Steel Span Pole, per Each  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1103050A	1 L.S.	Paint Existing Decorative Light Pole, per Lump Sum  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1106003A	10 EA.	1 Way Pedestrian Signal Pedestal Mounted, per Each  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1107011A	10 EA.	Accessible Pedestrian Signal and Detector (Type A), per Each  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1108110A	2 EA.	Traffic Signal Controller, per Each  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1111201A	1 L.S.	Temporary Detection (Site No. 1), per Lump Sum  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____

<u>Item No.</u>	<u>Estimated Quantity</u>	<u>Brief Description: Unit or Lump Sum Bid in Both Words and Figures</u>	<u>Total in</u>
1111202A	1 L.S.	Temporary Detection (Site No. 2), per Lump Sum \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1112284A	2 EA.	Vehicle Detection Monitor, per Each \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1112286A	2 EA.	360-Degree Camera Assembly, per Each \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1112287A	2 EA.	360-Degree Video Detection Processor, per Each \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1113049	210 L.F.	2 Conductor No. 8 Cable, per Linear Foot \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1113102	1250 L.F.	5 Conductor No. 14 Cable, per Linear Foot \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1113103	515 L.F.	7 Conductor No. 14 Cable, per Linear Foot \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____

<u>Item No.</u>	<u>Estimated Quantity</u>	<u>Brief Description: Unit or Lump Sum Bid in Both Words and Figures</u>	<u>Total in</u>
1113106	160 L.F.	12 Conductor No. 14 Cable, per Linear Foot  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1113725A	265 L.F.	23 AWG 4 Twisted Pair Category 6 Cable, per Linear Foot  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1118012A	1 L.S.	Removal and/or Relocation of Traffic Signal Equipment, per Lump Sum  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1118051A	1 L.S.	Temporary Signalization (Site No. 1), per Lump Sum  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1118052A	1 L.S.	Temporary Signalization (Site No. 2), per Lump Sum  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1131003A	2 EA.	Remote Control Changeable Message Sign, per Each  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1206022A	1 EA.	LOTICIP Project Sign, per Each  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____

<u>Item No.</u>	<u>Estimated Quantity</u>	<u>Brief Description: Unit or Lump Sum Bid in Both Words and Figures</u>	<u>Total in</u>
1206023A	1 L.S.	Removal and Relocation of Existing Signs, per Lump Sum  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1208931A	170 S.F.	Sign Face - Sheet Aluminum (Type IX Retroreflective Sheeting), per Square Foot  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1208937A	250 S.F.	Sign Face - Sheet Aluminum (Type XI Retroreflective Sheeting), per Square Foot  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1210101	5800 L.F.	4" White Epoxy Resin Pavement Markings, per Linear Foot  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1210102	3885 L.F.	4" Yellow Epoxy Resin Pavement Markings, per Linear Foot  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1210105	700 S.F.	Epoxy Resin Pavement Markings, Symbols and Legends, per Square Foot  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1210106	1600 L.F.	12" White Epoxy Resin Pavement Markings, per Linear Foot  \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____

<u>Item No.</u>	<u>Estimated Quantity</u>	<u>Brief Description: Unit or Lump Sum Bid in Both Words and Figures</u>	<u>Total in</u>
1220027	150 S.F.	Construction Signs, per Square Foot \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1302061A	65 EA.	Adjust Gate Box (Water), per Each \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1303189A	6 EA.	Reset Existing Fire Hydrant, per Each \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____
1403010A	17 EA.	Manhole Frame and Cover (Sanitary Sewer), per Each \$ _____ _____ Dollars and _____ Cents (\$ _____)	\$ _____

**TOTAL AMOUNT OF BID:**

\_\_\_\_\_ **DOLLARS**

**AND** \_\_\_\_\_ **CENTS**  
**(\$ \_\_\_\_\_)**

**Amount in Figures**

March 10, 2025

Mr. John M Hoefflerle, PE, CFM  
Town Engineer  
1019 Main Street  
Branford, CT 06405

**Re: Main Street Investigation Letter Report - ADDENDUM  
Main Street Right-of-Way Corridor  
Branford, Connecticut**

Dear: Mr. Hoefflerle,

This letter serves as an addendum to the September 2, 2021 Letter Report that documented fieldwork related to the geotechnical investigation and environmental soil sampling activities conducted at the above referenced Site. The work involved the completion of soil borings and test pits to support the reconstruction project for Main Street in Branford, Connecticut. The test pits were advanced within the roadway concurrently with the soil borings to evaluate subsurface conditions, potential impacts to soil, and the potential remnants and location, if found, of the former abandoned trolley tracks.

### **Soil Testing**

Analytical data previously provided were for samples collected in 2021. As such, these data are considered to be representative of the excess soil to be generated during the construction project. However, the potential for releases to the soil over the past four years exists and it is unlikely to be accepted by any disposal facility for waste profiling. It is typical for waste disposal facilities to require data generated within the last year to be compliant with their operating permit.

It is recommended that the Contractor:

- Identify waste disposal facilities that are permitted to accept railroad ties and/or soil impacted with the chemicals of concern (COCS) identified in the original sampling. For soil, these COCs include petroleum hydrocarbons, and polyaromatic hydrocarbons associated with asphalt.
- Determine the number of samples and types of analytical testing that will be required to complete a waste profile for the selected facility. The number of samples will depend upon the amount of excess soil to be generated during construction and the waste receiving facility's permit requirements, typically 1 sample per 500 cubic yards, that can vary. The contractor will be required to collect waste profile samples at the frequency needed and for the analytical tests specified by the receiving facility.

### **Stockpiles**

The Contractor should assume that railroad ties should be stockpiled separately from excess soil unless they identify a disposal facility capable of accepting both as a single waste stream. The Contractor should make themselves aware of any sizing requirements for the railroad ties required by their selected waste disposal facility.

Soil samples collected indicate that the soil is to be classified as polluted fill under guidance provided by the Connecticut Department of Energy and Environmental Protection (CT DEEP). Specifically, anthropogenic chemicals (e.g., petroleum hydrocarbons) were detected in the soil. One sample collected had no anthropogenic chemicals indicating that soil may be present that would meet the definition of clean backfill under CT DEEP guidance. However, the Contractor cannot assume that clean backfill will be generated during construction based upon the analytical data provided and must generate that data themselves.

Sincerely,  
**WESTON & SAMPSON ENGINEERS, INC.**



Malcolm Beeler, LEP  
Senior Technical Leader

## **ITEM #0406002A – TEMPORARY PAVEMENT**

### **DESCRIPTION**

Under this section of the specifications, the contractor shall install temporary pavement at the locations and to the general requirements shown on the contract drawings or as directed by the Engineer.

### **MATERIALS**

The materials to be used in the construction of temporary pavement shall be those indicated on the plans and in the details or ordered by the Engineer.

Bituminous Concrete shall conform to the requirements of CTDOT Form 819 Article M.04.01. Compacted processed aggregate base shall conform to of CTDOT Form 819 Article M.05.01.

### **CONSTRUCTION METHODS**

The methods employed in placing the bituminous pavement and all equipment, tools, machinery and other plant equipment used in handling materials and executing any part of the work shall conform to all requirements of CTDOT Form 819 Article 4.06.03. The completed and compacted temporary pavement shall match the adjacent grade of the existing pavement and meet or surpass the uniformity of the adjacent surface and its roughness or riding quality. Replacement of the temporary pavement will be required at no additional cost to the Town where the pavement surface is not smooth, or the compacted thickness of the bituminous concrete is deficient by more than ½”.

It shall be the responsibility of the Contractor to maintain and repair temporary bituminous pavement surfaces until such time as the temporary pavements have been replaced with the construction of permanent pavements. The Contractor shall at all times maintain the permanent and temporary pavements in a safe and satisfactory condition and all maintenance and repairs of permanent and temporary pavements shall be provided by the Contractor at no additional expense to the Town.

The Contractor shall perform and complete the construction work in a continuous manner and so that pavement replacement work may proceed without delay. The Contractor shall install the temporary pavement as soon as practical. Unless otherwise directed by the Engineer the Contractor shall install the temporary pavement by the end of each work week.

All curbing, street fixtures and such other appurtenant work damaged or displaced as a result of the Contractor’s operations shall be repaired or replaced and restored by the Contractor in a manner satisfactory to the Engineer at no additional cost to the Town.

### **METHOD OF MEASUREMENT**

This work will be measured for payment by the square yards of temporary pavement surface to the limits shown on the plans or ordered by the Engineer and after verification of the proper depth of bituminous concrete pavement thickness by the Engineer.



**BASIS OF PAYMENT**

The temporary pavement will be paid for at the contract unit price per square yard for “Temporary Pavement” complete in place and approved which price shall include all materials, tools, equipment and labor incidental thereto.

No separate payment will be made for the Processed Aggregate Base, and the cost shall be included in the contract unit price. Sawcutting existing pavement will be paid for under “Cut Bituminous Concrete Pavement”

<u>Pay Item</u>	<u>Pay Unit</u>
Temporary Pavement	S.Y.

## **ITEM # 0952103.1A – RAIN GARDEN PLANTER – SITE NO. 1**

### **9.52.01—Description**

### **9.52.02—Materials**

### **9.52.03—Construction Methods**

### **9.52.04—Method of Measurement**

### **9.52.05—Basis of Payment**

**9.52.01—Description:** The work under this item shall include all labor and materials necessary for installing the Rain Garden Planter to the limits and where shown on the drawings, or as ordered and in accordance with these specifications, complete and accepted, including all necessary removals, disposal, excavation, backfill and compaction for proper subgrade preparation.

Installation shall be by a contractor and crew with at least three years of experience in construction of streetscape improvements; including roadways, crosswalks, green infrastructure, lighting, utilities, plantings, hardscapes, and pedestrian (ADA compliant) site improvements, on projects of similar nature or dollar cost.

### **9.52.02—Materials:**

#### **Processed Aggregate Base:**

Shall conform to the requirements of Article M.05.01.

#### **Concrete Base:**

Shall conform to the requirements of Article M.03.02 Class PCC04462.

#### **Reinforcing:**

Shall conform to the requirements of Article M.06.01.

**Epoxy Adhesive:** Sikadur-31 Hi-Mod Gel LPL.

#### **Block Anchors:**

Furnish and install two (2) 1/2-inch x 8-inch stainless steel pins to anchor each granite block to its concrete base. Install with non-shrink grout.

**Granite Blocks (seat):** Stone for this work shall be hard and durable granite, fundamentally of light grey color, of general uniform texture, of smooth splitting appearance, free from seams or imperfections that would impair its structural reliability and containing only such color variations as in the opinion of the Engineer would reasonably be characteristic of the material source. The Contractor shall submit, for approval, the name of the quarry, the type of granite, and photos representative of the blocks which the Contractor proposes to use. Samples of granite block shall be submitted for approval. Such submission shall be made sufficiently in advance of ordering so that the Engineer may have an opportunity to judge the stone, both as to quality and appearance. Granite block material to be provided from a single course, unless approved otherwise.

1. The surface dimensions for the Granite Blocks shall be as shown on drawings, and conform to the following requirements:
  - a) The top and bottom of the granite block shall have thermal finished to an approximately true plane and shall have no projections or depressions greater than 1/4 inch. The front and back arris lines shall be pitched straight and true. The top edge shall be eased, and free from sharp edges or protrusions. Adjacent block shall be flush at the top.
  - b) The exposed sides of the granite block shall be at right angles to the plane of the top and shall be smooth quarry-split, free from drill holes in the exposed face. There shall be no projections greater than 3/4 inch, or depressions greater than 1 inch, measured from the vertical plane of the face through the top arris line to the base.
  - c) The adjacent ends and scupper cut of the granite block shall be at right angles to the plane of the top and shall be a sawn finish so that when the blocks are placed end to end as closely as possible, no space more than 1/4 inch shall show in the joint for the full width of the top or down on the face.
  - d) The granite block sections shall be furnished in lengths of approximately 6 feet, in length at each planter, as shown on plans and details.
  - e) Apply epoxy adhesive to bottom of granite block to adhere to concrete. Install epoxy per manufacturer's instructions.

**Granite Curbing Type 2:** Shall conform to Article M12.06-1 and as detailed on plans.

**Bioretention Garden Fencing:** Furnish as noted on detail and as described below.

Bioretention Garden Fencing to include hot-dip galvanizing, factory-applied polyamide epoxy powder primer, fluoropolymer urethane powder topcoat and Super Durable urethane powder anti-graffiti clear-coat for iron and steel fabrications. This system meets or exceeds the performance criteria for the AMMA 2003, AMMA 2004 and AMMA 2005 specifications.

- A. Submit a 3' long (minimum) section of fencing that includes (1) of every element detailed for review of quality and workmanship.
- B. **Hot-Dip Galvanizing:** For steel exposed to the elements, weather or corrosive environments and other steel indicated to be galvanized, provide coating for iron and steel fabrications applied by the hot-dip process. Galvanizing bath shall contain special high-grade zinc.
- C. **Prior to Galvanizing:** The steel shall be immersed in a flux solution (zinc ammonium chloride). The flux tank must be 12 to 14 Baumé density and contain less than 0.4 percent iron.
  - a. To provide the galvanized surface required, the following procedures shall be implemented:
    - i. A monitoring recorder shall be utilized and inspected regularly to observe any variances in the galvanizing bath temperature.

- ii. The pickling tanks shall contain hydrochloric acid with an iron content less than 12 percent and zinc content less than 3 percent. Titrations shall be taken weekly at a minimum.
    - iii. All chemicals and zinc shall be tested at least once a week to determine compliance with ASTM standards. All testing shall be done using atomic absorption spectrometry or x-ray fluorescence (XRF) equipment at a lab in the galvanizing facility.
  - b. Galvanize materials in accordance with specified standards and this specification. The dry kettle process shall be used to eliminate any flux inclusions on the surface of the galvanized material. The use of the wet kettle process is prohibited.
  - c. Comply with ASTM A 123 for fabricated products and ASTM A 153 for hardware.
  - d. If required, plug vent holes after galvanizing and grind smooth.
  - e. Galvanized surface shall be prepared per SSPC SP2 or SP3 to provide a smooth surface removing all runs, drips or sags.
  - f. Galvanizing shall exhibit a rugosity (smoothness) of 16-25 microns or less when measured by a profilometer. This pertains to those elements that are less than 24 pounds per running foot.
  - g. Galvanized surfaces, that are to receive coatings, must be blasted per SSPC SP 16. The use of iron, steel shot, and aluminum oxide grit as a blast medium, and power wire brushes are not permitted.
- D. Primer:** Provide factory-applied polyamide powder epoxy prime coat over metal that has been sandblasted per SSPC SP16.
- 1. Primer shall be a polyamide epoxy powder primer with 0 VOC.
  - 2. Apply primer within 12 hours after blasting at the same plant in a controlled environment meeting applicable environmental conditions and as recommended by the primer coating manufacturer. Cure schedule shall be as recommended by the manufacturer.
  - 3. Primer shall be applied at 1.8-3 mils DFT and certified OTC/VOC compliant and conform to EPA and local requirements.
  - 4. Primer shall meet or exceed the following performance criteria as stipulated by the coating manufacturer:
    - a. Cure Schedule: 10 min. at 400°F
    - b. Specific Gravity: 1.58 +/- .05 1.4-1.7 +/- .05
    - c. Coverage at 1.0 Mil 121.7 sq. ft./ lb.
    - d. 60° Gloss: 55-65 (ASTM D-523)
    - e. Adhesion: 5B (ASTM D-3359)
    - f. Flexibility: Pass 1/8 " Mandrel Bend (ASTM D-522)
    - g. Pencil Hardness: 2H-3H (ASTM D-3363)
    - h. Impact Resistance: 80 in-lbs direct (ASTM D-2794) 80 in-lb reverse
    - i. Typical Environmental Properties: On Bonderite 1000 Panels
    - j. Salt Fog 1000 hours (ASTM B-117)
    - k. Salt Fog (top-coated)\* 5000+ hours (ASTM B-117)
    - l. Humidity 1000 hours PASSED

- B. Topcoat:** Provide fluoropolymer powder topcoat. Provide coating matching approved samples. Factory-applied metal coatings shall be applied in a facility acceptable to the coating manufacturer. Full cure of the coatings shall be verified by the coating manufacturer's recommended test methods.
1. Coatings must meet or exceed the criteria for the following categories as stipulated by the coating manufacturer. All testing must be on lab prepared panels.
    - a. Adhesion: ASTM D 3359, no loss.
    - b. Hardness: ASTM D 3363 (pencil), H min.
    - c. Falling Sand ASTM D 968 40L/mil.
    - d. Salt Fog Resistance: ASTM B 117, passes 4000 hrs.
    - e. Humidity: ASTM D 2247, 4000 hours, few #8 blisters.
    - f. Impact Resistance (3mm): ASTM D 2794, no loss.
    - g. Color Retention: ASTM D 2244, 10 year less than or equal to 5 delta E.
    - h. Chalk Resistance: ASTM D 4214, #8 rating.
    - i. Gloss Retention: ASTM D 523, greater than or equal to 50 percent retention.
    - j. Erosion Resistance: ASTM B 244, less than 10 percent film loss.
    - k. Compliance: AAMA 2605.
- C. Clearcoat:** Provide Super Durable powder urethane clearcoat in the gloss range specified.
1. Clearcoat shall be applied over the color coat per the manufacturer's recoat schedule at the same galvanizer's plant in a controlled environment meeting applicable environmental conditions as recommended by the coating manufacturer. Cure schedule shall be as recommended by the manufacturer.
  2. Clearcoat shall be applied at 2-3 mils DFT and certified OTC/VOC compliant and conform to EPA and local requirements.
  3. Clearcoat shall meet or exceed the following performance criteria as stipulated by the coating manufacturer:
    - a. Cure Schedule 10 min @400°F
    - b. Specific Gravity (g/ml): 1.17
    - c. Coverage at 1.0 Mil (ft<sup>2</sup>/lb) 165.2
    - d. 20° Gloss (ASTM D-523) 99
    - e. 60° Gloss (ASTM D-523) 110
    - f. Adhesion (ASTM D-3359) 5B
    - g. Flexibility: Pass 1/8 " Mandrel Bend (ASTM D-522)
    - h. Pencil Hardness: (ASTM D-3363) H-2H
    - i. Impact resistance ASTM D-2794) Direct 100 in-lbs Reverse 100 in-lbs
    - j. Humidity (ASTM D-4585) Slight gloss and color change
    - k. Salt Spray (ASTM B-117) Max 1/8" Creepage.

**Filter Fabric:** Non-woven filter fabric. The filter fabric shall be Tencate Mirafi 140N as manufactured by Tencate Geosynthetics Americas, Pendergrass, GA; Foss-65, as manufactured by Foss Manufacturing Co., Hampton, NH; US 120NW, as manufactured by US Fabrics, Cincinnati, OH; or approved equal.

**Bioretention Planting Soil:** Soil Media to meet the following performance requirements.

1. Particle Size Distribution by Separates:

- a) Exclude any material > 4.76 mm - 0%
- b) Very Coarse Sand/Gravel: Gravel (2.0 to 4.76 mm) 5% maximum (percent by dry weight).
- c) Sand (0.42 to 2.0 mm) 60 - 85% (percent by dry weight).
- d) Silt (0.075 to 0.42 mm) 20% maximum (percent by dry weight).
- e) Clay (less than 0.075mm) 5% maximum (percent by dry weight).

Table 1: Acceptable particle size distribution of final bioretention soil mix

Sieve #	Sieve Size in (mm)	% Passing
4	0.187 (4.76)	100
10	0.079 (2)	95
40	0.017 (0.42)	40 - 15
200	0.003 (0.075)	10 - 20
<200	Pan	0 - 5

i) Fragment Size Distribution:

- (1) Sticks and Roots: should be minimized and preferably limited to nothing larger than 4.76 mm
- (2) Debris and Other Foreign Materials: should be minimized.

ii) Percentage of Organic Matter: Minimum 3 percent by volume and maximum 8 percent by volume.

iii) Soil Reaction: pH of 6 to 7.

iv) CEC of Total Soil: Minimum 10 meq/100 mL at pH of 7.0.

**Crushed Stone River Blend:** Shall be 3/8” washed native stone as supplied by Dunning Industries, 860-677-1616, or an approved equal.

**River Rock:** Shall be a blend of 30% 3” Native Round River Jack and 70% 4-6” Native Round River Jack as supplied by Dunning Industries, 860-677-1616, or an approved equal.

**3/4 Crushed Stone:** Shall conform to CTDOT Form 819 Table M.01.02-6 (No. 6).

**Granular Fill:** Shall conform to CTDOT 819 M.02.01-2, Grading A.

**Boulders:** Rough cut boulders, rounded with no sharp edges. Boulders shall be power washed prior to installation. Boulders to be approved by Landscape Architect. See detail for sizes.

**Planting:** Material as identified in the drawings shall conform to the requirements of Article M13.07.

**Mulch:** Shall be fibrous pliable shredded softbark mulch, not exceeding ½-inch in width. It shall be 98 percent organic matter with a pH range between 3.5 and 4.5 and a moisture content not to exceed 35 percent. It shall be free of weeds, weed seeds, debris, and other materials harmful to plant growth and viability. Organic mulch shall be aged no longer than 2 years.

**Overflow:** The inline riser fitting with beehive dome grate shall be manufactured by ADS Nyloplast, or approved equal. Grate shall be ductile iron per ASTM A536 grade 70-50-05. Drainage connection stub joint tightness shall conform to ASTM D3212 for corrugated HDPE (ADS N-12/Hancor dual wall), N-12 HP, and PVC sewer (4"-24") Pipe and fittings shall conform to CTDOT 819 M.08.01.

**Perforated Piping:** Shall conform to CTDOT 819 M.08.01.

**Reclaimed Granite Curb:** To be selected onsite from existing granite curb stockpile.

**Railroad Tracks:** New or salvaged 78lb (119RE) rail. Rail shall be clean with minimal imperfections. Rail to be sourced from Housatonic Railroad Company, Matt Boardman 860-307-7021; m.boardman@hrrc.com . Or an approved local supplier.

**Submittals:**

1. Shop or product drawings and product data shall be submitted for the following:
  - a. Processed Aggregate Base
  - b. Concrete
  - c. Reinforcing
  - d. Epoxy Adhesive
  - e. Block Anchors
  - f. Granite Blocks (seat)
  - g. Granite Curbing Type 2
  - h. Bioretention Fencing: shop or product drawing, product data and 3'L min. sample portraying workmanship.
  - i. Bioretention Planting Soil:
    - Physical Testing:
      1. Soil samples must be obtained during the soil characterization field analysis and classified according to ASTM D2487 (Standard Practice for Classification of Soils for Engineering Purposes [Unified Soil Classification System]) and ASTM D2488 (Standard Practice for Description and Identification of Soils [Visual-Manual Procedure]).
      2. Soil samples must undergo laboratory particle size analysis

according to ASTM D422 (Standard Test Method for Particle-Size Analysis of Soils).

Chemical Testing:

3. Cation Exchange Capacity (CEC): Analysis by sodium saturation at pH 7

Fertility Testing: Soil fertility analysis according to standard laboratory protocols including the following:

4. Percentage of organic matter.
5. CEC, calcium percent of CEC, and magnesium percent of CEC.
6. Soil reaction (acidity/alkalinity pH value).
7. Nitrogen ppm.
8. Phosphorous ppm.
9. Copper ppm.

Organic-Matter Content: Using ASTM D 2974-00 Standard Test Methods for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils. Analysis using loss-by-ignition method.

- j. Crushed Stone River Blend
- k. River Rock
- l. 3/4 Crushed Stone
- m. Boulders
- n. Planting
- o. Mulch
- p. Overflow
- q. Perforated Piping
- r. Reclaimed Granite Curb
- s. Railroad Tracks

**9.52.03—Construction Methods:**

**Subgrade:**

1. Engineer to approve subgrade, compacted density, and elevations conform to the specifications.
2. Shall be stripped of all existing material and other objectionable materials to the grades specified.
3. Proof rolled to 95 percent Standard Proctor Density in the presence of the Engineer, with soft spots or localized pockets of objectionable material excavated and properly replaced with approved processed aggregate base.



4. Shall be trimmed to within 0 to ½ in. of the proposed finished grades with the surface of the prepared subgrade deviating no more than 1/2 in. from the bottom edge of a 10 ft. straight edge laid in any direction.
5. Shall be protected from precipitating weather events.
6. Shall be protected from traffic, with repairs of any resulting damage the responsibility of the Contractor.

**Planter Elements:**

1. Install all planter elements per details and manufacturer's recommendations.
2. Planting: Shall be installed in conformance with Section 9.49 of the CTDOT Form 819 and as shown on details. Watering and Establishment Period requirements shall conform to Section 9.49 in these documents.

**General Rain Garden Planter Installation Notes:**

3. Do not install Rain Garden Planter elements during heavy rain or snowfall. Verify that subgrade preparation, compacted density and elevations conform to the specifications.
4. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, asphalt/concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, solid waste, or acid has been deposited in planting soil.
5. Proceed with placement only after unsatisfactory conditions have been corrected.
6. Compaction: Compact each blended lift of soil media to 75 percent of maximum Standard Proctor density according to ASTM D 698.
  - a. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
  - b. Compaction: Test planting-soil compaction after placing each lift and at completion using a densitometer or soil-compaction meter calibrated to a reference test value based on laboratory testing according to ASTM D 698.
  - c. Performance Testing: For each amended soil media type, demonstrating compliance with specified performance requirements.
7. Finish Grading: Grade soil media to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades.
8. Bioretention Garden Fencing:  
**Installation:** Install fencing by surfacing mounting to the curb. Drill holes into the curb. Insert concrete anchors. Using stainless steel bolts, secure fence post to curb. Field weld

panels and apply touch up paint as needed to complete fencing system. Field welds to be ground smooth.

**Touch-Up and Repair:** For damaged and field-welded metal coated surfaces, clean welds, bolted connections and abraded areas the following procedures must be used.

- a. For galvanized surfaces, apply organic zinc repair paint complying with requirements of ASTM A 780, modified to 95 percent zinc in dry film. Galvanizing repair paint shall have 95 percent zinc by weight. Basis of design is ZIRP by Duncan Galvanizing. Thickness of applied galvanizing repair paint shall be not less than coating thickness required by ASTM A 123 or A 153 as applicable.
- b. For factory-applied finish coatings, field-touch-up shall be performed by qualified applicators with experience in the application of high-performance industrial coatings. All coating manufacturer's requirements for mixing, application and environmental conditions must be followed. Touch-up shall be performed so that the repair is not visible from a distance of 6 feet. A touch-up repair kit and repair procedures shall be provided to the Owner for each type of factory-applied finish upon request.

**Warranty:**

- a. Warranty: Provide galvanizer's standard warranty that materials will be free from 10 percent or more visible rust for 20 years.
  - b. Warranty for the finish gloss and color shall be 10 years in accordance with the following performance specifications.
    - i. **Fade:** Loss of gloss shall not exceed 35 units of gloss which shall be measured in accordance with ASTM D 523-89 with 60 degree geometry.
    - ii. **Color Shift:** Shall not exceed 15 Delta E CIE LAB units for whites and light colors. Dark colors shall not exceed 25 Delta E CIE Lab units as measured by ASTM D 2244. (Yellows, Oranges and Reds are excluded.)
9. Provide final protection, prevent additional compaction and maintain conditions in a manner acceptable to the Engineer that ensures that Rain Garden Planter work is without damage or deterioration at the time of Substantial Completion. The Contractor shall replace any damaged elements identified by the Engineer during final inspection.

**9.52.04—Method of Measurement:** This work will be measured for payment by the actual number of completed and accepted Rain Garden Planters(s).

**9.52.05—Basis of Payment:** This work will be paid for at the Contract unit price per each "Rain Garden Planters" complete in place, which price shall include all excavation, backfill, formation of subgrade, construction of 'planter' elements, planting soil mix, planting, and all other materials, equipment, tools, and labor incidental thereto.

Pay Item	Pay Unit
Rain Garden Planter – Site No. 1	EA