Addendum No. 1 to IFB 24-53

CITY OF SOMERVILLE, MASSACHUSETTS
Department of Procurement and Contracting Services
KATJANA BALLANTYNE
MAYOR

To: All Parties on Record with the City of Somerville as Holding IFB 24-53
West Somerville Sewer and Stormwater Improvements

From: Andrea Caruth

Date: 4/4/2024

Re: **Responses to Requests for information and updates to rule for award, specifications, drawings, and appendices**

Addendum No. 1 to IFB 24-53

This addendum makes changes to the bidding documents.

This addendum shares responses to requests for information.

This addendum shares the meeting minutes pre-bid meeting minutes.

Please acknowledge receipt of this Addendum by signing below and including this form in your proposal package. Failure to do so may subject the proposer to disqualification.

NAME OF COMPANY / INDIVIDUAL: _____

ADDRESS: _____

CITY/STATE/ZIP: _____

TELEPHONE/FAX/EMAIL: _____

SIGNATURE OF AUTHORIZED INDIVIDUAL: _____

ACKNOWLEDGEMENT OF ADDENDA:

Addendum #1 _____ **#2** _____ **#3** _____ **#4** _____

Addendum No. 1 to IFB 24-53

MODIFICATIONS TO BIDDING INSTRUCTIONS

REPLACE Section 2.1 Rule for Award
The contract shall be awarded to the responsible and eligible Bidder submitting the lowest total price. The contract will be awarded within ninety (90) days after the bid opening. The time for award may be extended for up to 45 additional days by mutual agreement between the City and the apparent lowest responsive and responsible bidder.

ADD Section 2.1 Rule for Award
The contract shall be awarded to the responsible and eligible Bidder submitting the lowest total price. The City reserves the right to determine the lowest eligible bidder on the basis of the base bid or the adoption of the alternates, selected in order, and in combination with the base bid (For example: Base Bid, Base Bid + Alternate A). Prices are to remain the same for the entire contract period.

Addendum No. 1 to BID #24-53

NOTICE is hereby given to prospective Bidders of the following information, clarifications, and modifications to the Bidding Documents. The Bidding Documents remain unchanged except for modifications specifically indicated under Modifications. Bidders must acknowledge receipt of this Addendum in the Bid Form and comply with the requirements for submission of Bids as set forth in the Bidding Documents.

INFORMATION

A pre-bid conference was held on March 27, 2024 at 2 PM. Attached are pre-bid conference minutes for information only.

Note: Information in the minutes of the conference differing from that included in Bidding Documents shall be considered inaccuracies. Only modifications reflected in Addenda are valid.

The answers below are provided in response to questions and comments submitted by prospective Bidders.

1. *Please confirm the contractor is allowed to release filtered water removed during the pipe vacuuming process (known as "decant water") into the sanitary or storm system.*
    a. *If the decant water is to be released to the sanitary system, please confirm the sanitary sewer operator has granted permission.*
    b. *If the decant water is to be released to the storm system, please provide a copy of the MS4 permit.*

    Answer: Decant water can only be released into the sanitary sewer system.

2. *Are there any well water areas, wetland areas, ground water or other sensitive environments proximate to the work area? If so, are there specific controls required to protect these areas such as "pre-liners"?*

    Answer: Erosion and sediment control measures are discussed in Section 01 10 05 Paragraph 3.03 D. There are no specific controls required for any pipe segments in the Work area.

3. *Please confirm that the water introduced for the pipe jetting process is allowed to remain in the storm system.*

    Answer: Potable water introduced for the pipe jetting process is allowed to remain in the storm system.

4. *Can lining operations for small diameter pipe take place even if there isn't 3 days of dry weather forecasted?*

    Answer: Lining operations require 3-days of anticipated dry weather per Specification 330130.72.

5. *The spec calls to "grout infiltration leaks identified". When is the identification period? Post lining operations or during the warranty?*

    Answer: If infiltration is identified during post lining operations or warranty inspections, grouting will be required.

6. *Are videos available for viewing pre bid?*

   Answer: Copies of the reports are provided in Appendix H. No videos are available for viewing pre bid.

7. *According to specifications sections 33 46 65 and 33 46 66 for the Green Stormwater Infrastructure there are leakage tests and inspections to be performed as part of the contract work. Please provide more details regarding leakage testing required in association with the Green Stormwater Infrastructure systems.*

   Answer: Leakage test language has been removed, please see replacement sections for Section 33 46 65. There are no leakage test requirements for Section 33 46 66.

8. *For the Green Stormwater Infrastructure inspections there seems to be a 12 month interval for the pre-treatment systems (e.g. Pre-Treatment Screen on Deep Sump MH on Chetwynd, Pre-Treatment Inlet Device on Fairfax) and a 3 month interval for the storage systems. Is it the intention for the City to have the Manufacturer perform these inspections or can the Contractor perform them in accordance with or under the supervision of the Manufacturer? Please confirm neither the Contractor nor Manufacturer is responsible for any maintenance relating to the Green Stormwater Infrastructure systems.*

   Answer: Per inspections required by Section 33 46 65 Paragraph 2.03, the Manufacturer will perform these inspections quarterly through the first year of operation, but the Contractor will be responsible for required repairs discovered throughout the warranty period. The City will maintain the pre-treatment systems upon one year of completion and final acceptance. For the non-infiltrating bioinfiltration system, maintenance training may be requested at no cost to the City within one year following installation.

9. *On Sheet C-301 Fairfax Street, the plan calls for the replacement of a section of existing 8" water main. What is the material and approximate age of the existing water main?*

   Answer: The existing 8-inch water main was installed in 1922, the material is unknown.

10. *There are Owner Contingency Items 39, 40, 41, 42, 43, and 44; each of which are setup as Allowances. Please confirm all bidders are expected to include 100% of the allowance in their costs as well as in their bid unit pricing total. After the award and execution of the contract, to the extent Contractors incur costs relating to these contingency allowances, is the contractor to provide direct labor markup and 15% for profit and overhead and submit to the owner for reimbursement under the respective allowance item(s)?*

    Answer: Bidders should include 100% of the allowance in the costs and bid unit pricing total. If the costs are incurred on any of the contingency items, payment will be treated similarly to changes in the work in accordance with Article 11 of the General Conditions. Contractor shall submit time and material costs as back up for review. Markups will not be accepted for costs related to Temporary No Parking Signs or Material Escalation Price Adjustment contingency items.

11. Please review and respond to UCANE's questions regarding the bidding process, specifically retainage on this project.

Answer: The Measurement and Payment section and warranty requirements have been reviewed and edited. Please see the updated specifications included in this addendum for detailed changes.

MODIFICATIONS

NOTICE is hereby given that the Bidding Documents have been modified as follows.

Replacement pages are issued herewith, have an Issue Date of April 4, 2024, contain reference to "ADDENDUM NO. 1" in the footer, and text changes identified by double-underline for additions and ~~Strikeout~~ for deletions.

Replacement pages (with text changes)	Provided for purposes of double-sided printing only (reverse side of page with no changes) or revised page endings
01 11 00-5	01 11 00-6
33 01 30.61-15	33 01 30.61-16
33 01 30.72-17	33 01 30.72-18
33 01 30.81-20	33 01 30.81-19
33 46 66-14	33 46 66-13

The following replacement section(s) are reissued herewith in their entirety, have an Issue Date of April 4, 2024, contain(s) reference to "ADDENDUM NO. 1" in the footer, and text changes identified by double-underline for additions and ~~Strikeout~~ for deletions.

Replacement Sections	Number of Pages
01 20 25 Measurement and Payment	30
33 46 65 Green Stormwater Infrastructure Infiltration Systems	8
Appendix L: Notification Maps	10
Appendix M: Traffic Management Plan Guidelines	3

The following new item(s) are herewith added.

Attachment to Appendices Combined, "Appendix O: Irregular Shaped Pipes" (as may be amended) issued April 4, 2024, consisting of 5 pages

Individual Drawings as identified below are reissued herewith, have a revision date of April 4, 2024 in the revision block with changes encircled by "clouds" and designated as "ADDENDUM NO. 1".

Drawing No. C-301, Fairfax Green Stormwater Infrastructure Bid Alternate B (If Awarded by Owner)

Drawings are hereby modified as follows. Replacement pages/sheets are not being issued.

Drawing modifications are identified in the following table and text changes are identified by double-underline for additions and ~~strikeout~~ for deletions.

Drawing No./ Sheet No.	Modifications
C-100	Add the following to Notes; "12. CONTRACTOR TO BE AWARE OF IRREGULAR SHAPED PIPE SEGMENTS WITH EMBEDDED SCREWS. THIS INCLUDES BUT IS NOT LIMITED TO: A-5498 : A-5500 AND A-5500 : A-5501 ON FAIRFAX STREET AND 10-5860 : 10-5861 ON GORDON STREET. ANY WORK REQUIRED TO ADDRESS THIS AND PREPARE THE PIPE FOR LINING SHALL BE INCIDENTAL TO CIPP LINING OF THE PIPE AT NO ADDITIONAL EXPENSE TO THE OWNER. SEE APPENDIX O FOR DETAILS AND PHOTOS."

Prepared and Issued by Owner:

City of Somerville

In consultation with Woodard & Curran (Engineer)

F. Coordinate with Owner to obtain permission from private property owners when required to cross private property to reach City utility easements where Work is located.

1.05 SPECIAL REQUIREMENTS

A. Obtain permits from the City of Somerville and comply with General Terms and Conditions 5.10.

1. City of Somerville – Street and Sidewalk Opening/Occupancy Permit

a. The City has implemented an online platform, Citizen Serve, for permitting and licensing needs. Follow the steps outlined in Appendix B to obtain the applicable permits for the Work. Paper permit applications are no longer accepted by the City.

b. Submit a Right of Way Occupancy Request Form included as Appendix C, to Jesse Moos (jmoos@somerville.gov), City of Somerville Construction Liaison & Compliance Manager, every week by Thursday at 12:00 PM. The weekly request shall include an updated 3-week construction schedule.

c. City of Somerville – Hydrant Permit (Appendix D). Provide deposit payment for hydrant meter and backflow valve with the City of Somerville Water and Sewer Department.

d. City of Somerville – Drain Layer Application Instructions (Appendix E)

e. City of Somerville Temporary Parking Restrictions Permit (Appendix F)

2. Comply with MWRA Cured-In-Place Pipe (CIPP) Permitting referenced in Section 33 01 30.72 and Appendix I.

B. The City shall waive fees related to the City Street or Sidewalk Opening/Occupancy Permit and Temporary Parking Restrictions Permit except sign fees as specified in Section 01 11 05, Article 3.04.

C. Coordinate with Owner and Engineer for and provide public notification on the Project as specified below.

1. Notification to Owner and Engineer no less than 30 days prior to beginning Work in a new area of the Project to allow for Owner and Engineer to complete pre-Project notification to residents.

D. The Work includes Warranty Inspection ~~and final paving~~ which shall commence upon request for substantial completion or ~~45 calendar days prior to expiration of the Correction Period or~~ within 10 days of receipt of notice from Owner to commence Warranty Inspection. The Warranty Inspection ~~and final paving~~ must be completed in order for Final Completion to be achieved.

1. All Work completed except for Warranty Inspection is referred to as "Completion of Post Substantial Completion Punchlist".

E. The City will not provide parking spaces or staging areas during construction. The Contractor shall be required to locate and secure off-site construction parking area and staging area for equipment and materials unless otherwise directed by the Engineer or Owner.

F. The City will not provide a soil stockpiling or dump site. The Contractor shall prepare accordingly.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

This page intentionally left blank

3.14 WARRANTY INSPECTION

A. Warranty Inspection must commence upon request for substantial completion or within ~~45 calendar days prior to expiration of the Warranty Period or within~~ 10 days of receipt of notice from Owner to commence Warranty Inspection. ~~Within 14 calendar days prior to expiration of the Warranty Period (351 days from Substantial Completion), p~~Perform CCTV inspection of 15 percent of rehabilitated pipes and lateral connections in accordance with Section 33 01 30.10 in the presence of the Engineer. All warranty inspection videos must be delivered to the Engineer within 30 days of the Contractor's request for Substantial Completion. Specific locations will be selected by Owner.

B. If abnormalities and defects are discovered after inspection of a portion of rehabilitated pipes and lateral connections, perform CCTV inspection of all rehabilitated pipes and lateral connections at no additional cost to Owner.

C. Repair and replace abnormalities and defects discovered during the Warranty Inspection as recommended by manufacturer and as specified.

3.15 CLOSEOUT ACTIVITIES

A. Provide in accordance with Division 01 General Requirements.

END OF SECTION

This page intentionally left blank

e. Leak free pipe is required for final approval of liner installation. Repair or remove liner where leakage is observed through wall of pipe as recommended by CIPP manufacturer.

f. Final acceptance of rehabilitation work shall not be granted until defective areas are repaired to pipe lining manufacturers and Engineer's satisfaction.

g. The Contractor shall submit post-lining CCTV inspection videos, reports, and database in NASSCO format before final acceptance is granted. Additionally, the Contractor shall submit a list of service connections reinstated on each segment of pipe that has been rehabilitated.

7. Warranty Inspection

a. Warranty inspection must commence upon request for substantial completion or within ~~45 calendar days prior to expiration of Warranty Period or within~~ 10 days of receipt of notice from Engineer to commence warranty inspection. Perform CCTV inspection of 15 percent of rehabilitated pipes and laterals in accordance with Section 33 01 30.10 and in presence of Engineer~~, within 14 calendar days prior to expiration of Warranty Period, 351 days from Substantial Completion~~. All warranty inspection videos must be delivered to the Engineer within 30 days of the Contractor's request for Substantial Completion. Specific locations will be selected for warranty inspections by Engineer and will include all sizes of CIPP in Project.

b. Perform CCTV inspection of entire CIPP system during Warranty Period if abnormalities or defects are discovered by Engineer after primary warranty inspection.

c. Repair and replace abnormalities and defects discovered during warranty inspection as recommended by manufacturer or requested by Engineer, and as specified.

3.08 STARTUP AND COMMISSIONING

A. Provide in accordance with Division 01 General Requirements.

3.09 CLEANING

A. Do not discharge bypass or flood sewage to public or private property, including ground, surrounding residences, and downstream sewer lines. Immediately clean and repair damage resulting from cleaning and inspection activities to satisfaction of Engineer.

B. Collect cleaning water, solids and debris generated from pipe cleaning and discharge off-Site to appropriate waste facilities. Do not discharge cleaning water and solids to public or private property.

C. Promptly remove and legally dispose of damaged materials, including but not limited to, items with gouging, abrasion, flattening, cutting, puncturing, or ultra-violet degradation.

3.10 CLOSEOUT ACTIVITIES

A. Provide in accordance with Division 01 General Requirements.

3.11 ATTACHMENTS

A. Cured-In-Place Pipe Lining Installation & Service Lateral Reinstatement Form

END OF SECTION

E. Film Thickness Measurements

1. Where applicable and specified during application a wet film thickness gauge, meeting ASTM D4414, shall be used. Measurements shall be taken, in the presence of the Engineer, documented and attested to by the Contractor for submission to the Owner.

F. Holiday Detection Test

1. As directed by the Engineer, holiday detection shall be performed for all coating systems installed in corrosive environments.

2. After the epoxy coating product have set in accordance with manufacturer instructions, all surfaces shall be inspected for holidays with high-voltage holiday detection equipment. Reference NACE SP0188 for performing holiday detection.

3. All detected holidays shall be marked and repaired by abrading the coating surface with grit disk paper or other hand tooling method. After abrading and cleaning, additional coating can be hand applied to the repair area.

4. All touch-up/repair procedures shall follow the coating manufacturer's recommendations.

5. Documentation on areas tested, results and repairs made shall be provided to the Owner, in writing, by Contractor.

G. Adhesion Testing

1. Where specified, a minimum of 10% of the manholes coated shall be tested for adhesion/bond of the coating to the substrate. Testing shall be conducted in accordance with ASTM D4541, ASTM D7234, or NACE SP0188. Owner’s representative shall select the manholes to be tested.

2. A minimum of three 50 mm dollies shall be affixed to the coated surface at the cone area, mid-section and at the bottom of the structure or in areas suspect from non-destructive evaluation and testing The adhesive used to attach the dollies to the coating shall be rapid setting with tensile strengths in excess of the coating product and permitted to cure in accordance with manufacturer recommendations. The coating and dollies shall be adequately prepared to receive the adhesive.

3. Failure of the dolly adhesive shall be deemed a non-test and require retesting. Prior to performing the pull test, the coating shall be scored to the substrate by mechanical means without disturbing the dolly or bond within the test area.

4. Two of the three adhesion pulls shall exceed 300 psi or concrete failure with more than 50% of the subsurface adhered to the coating.

5. Should a structure fail to achieve two successful pulls as described above, additional testing shall be performed at the discretion of the Owner. Any areas detected to have inadequate bond strength shall be evaluated by the Owner.

6. Further bond tests may be performed in that area to determine the extent of potentially deficient bonded area and repairs shall be made by Contractor.

3.07 WATER AND WASTE MANAGEMENT

A. Discharge, bypass, or flooding of sewage, cleaning water, or debris to public or private property, including ground, surrounding residences, and downstream sewer lines, is prohibited.

3.08 WARRANTY INSPECTION

A. Warranty Inspection must commence upon request for substantial completion or within ~~45 calendar days prior to the expiration of the Warranty Period or within~~ 10 days of receipt of notice from Owner to commence Warranty Inspection. ~~Within 14 days prior to expiration of the Warranty Period (351 days from Substantial Completion), c~~Conduct visual inspection of 15 percent of rehabilitated manholes in the presence of the Engineer. Specific locations will be selected at random by the Owner.

B. Perform visual inspection of all rehabilitated manholes at no additional cost to the Owner if abnormalities and defects are discovered after inspection of a portion of rehabilitated manholes.

C. Repair and replace abnormalities and defects discovered during the Warranty Inspection as recommended by the manufacturer and as specified.

3.09 CLOSEOUT ACTIVITIES

A. Provide in accordance with Division 01 General Requirements.

END OF SECTION

B. Commissioning entails removing the protective covering from the Biofiltration Media, planting the plant material in accordance with the approved drawings, and placing of mulch per the manufacturer's direction.

1. Dig planting holes the depth of the root ball and two to three times as wide as the root ball. Wide holes encourage horizontal root growth that plants naturally produce.

2. With trees, you must ensure you are not planting too deep. Don't dig holes deeper than root balls. The media should be placed at the root collar, not above the root collar. Otherwise the stem will be vulnerable to disease.

3. Strictly follow manufacturer's planting guidance.

C. Cover the exposed root ball top with mulch. Mulch should not touch the plant base because it can hold too much moisture and invite disease and insects. Evenly place 3 inches of double-shredded hardwood mulch (if specified) on the surface of the media.

D. Plantings shall be watered-in at installation and temporary irrigations shall be provided as recommended by the manufacturer.

3.03 REPAIR/RESTORATION

A. Repair and replace any damaged materials. Do not install or leave in place any damaged materials. Repair or replace any defective materials in accordance with manufacturer's direction.

3.04 FIELD QUALITY CONTROL

A. Provide in accordance with Division 01 General Requirements.

B. Coordinate Site and field tests, and inspections as required by the manufacturer with Engineer and manufacturer before, during, and after construction.

3.05 CLEANING

A. Conform to the manufacturer's specifications.

3.06 CLOSEOUT ACTIVITIES

A. Provide in accordance with Division 01 General Requirements.

3.07 WARRANTY PERIOD

A. All work shall be guaranteed against defected workmanship and materials for a period of 1 year after Substantial ~~c~~Completion ~~and acceptance of Work~~.

END OF SECTION

SECTION 01 20 25

MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.01 DESCRIPTION

A. This Section describes the measurement and payment for the Work to be completed under each item of the Bid Form, which may also be referred to as "Pay Item".

B. Payment procedures are in accordance with General Terms and Conditions and Supplementary Conditions, and the General Requirements.

C. Measurement: As determined, verified, or approved by Engineer and/or Owner.

D. The Work described in each Pay Item shall be as described in the Specifications and shown on the Drawings and not included in other Pay Items.

1. Pay Item descriptions are general and may not specifically describe all associated Work or elements thereof, do not constitute Specifications, and do not supersede the content of the Specifications and Drawings.

2. Review the Specifications and Drawings for Work associated with each Pay Item. Claims for being unfamiliar with the content of the Specifications and Drawings will not be considered.

E. The following Work is not specifically described or designated as a Pay Item, is considered incidental to all Pay Items, and shall not be measured separately for payment.

1. General Requirements EXCEPT those items included in Mobilization/Demobilization and included as separate Pay Items.

2. Temporary sewage and storm bypass

3. Materials, equipment, and services necessary to verify existing field conditions and the location, size, type, material, and orientation of existing pipes and utilities shown on the Drawings excluding test pits.

4. Restoration of all areas disturbed by the Contractor within the limits of Work, including plantings.

5. Field and laboratory testing and reporting by independent laboratory, including but not limited to compaction of backfill materials; aggregate gradation; and concrete testing.

F. Payment will not be made for restoration of areas disturbed by the Contractor outside the limits of Work.

G. Payment will only be made for those utility services, including water and fire services, specifically identified for replacement on the Drawings. Relocation or replacement for the Contractor's convenience or due to breakage by the Contractor of any other utility services shown on the Drawings, or at locations which could reasonably be assumed, shall be at no cost to Owner.

H. Design, installation and removal of excavation support systems, temporary and permanent utility/structure support systems associated with a Pay Item shall be considered incidental to that Pay Item.

I. Normal dewatering and erosion control (including installation, operation, maintenance, removal, and off-Site disposal of erosion control devices) associated with a Pay Item shall be considered incidental to that Pay Item.

J. Police details will be direct billed by the police department to Owner. Provide daily detail slips to the Engineer. Police details scheduled and not used by the Contractor will be back-charged to Contractor. Contractor is responsible for canceling the detail at least 24 hours in advance.

1.02 MEASUREMENT AND PAYMENT BASIS

ITEM 1, A-1, B-1, C-1, D-1 Mobilization/Demobilization	
Measurement	Portion of Work completed and accepted.
Payment	Percent of Total Contract Price based on Schedule of Values (not to exceed 5%) excluding Pay Items 39 through 44 & ALT
Schedule of Payment	50% at Project commencement – 25% at Substantial Completion – 25% at Final Completion.
Includes delivery to and removal of equipment from the Project Site; installation and removal of temporary utilities, facilities and temporary controls; obtaining necessary permits and associated fees, including but not limited to insurance and bond costs; installation and removal of signage; development of pre-construction schedules and plans required by the General Terms and Conditions of the Contract, Supplementary Conditions and General Requirements; preparation of traffic management plans; performing necessary pre-construction and post-construction investigations, verifying existing field conditions, coordination, and Site clean-up, restoration, and closeout. EXCLUDED: police details direct billed to Owner (except for costs for failure to cancel); permit fees from the City except for deposit for hydrant meter and backflow valve.	

ITEM 2: 8-inch Gravity Sewer ITEM 3: 12-inch Storm Drain	
Measurement	As measured along the horizontal projection of the centerline of the pipe from inside manhole face.
Payment	Unit price per linear foot of pipe installed completed in place and tested.
Schedule of Payment	Monthly based on Work progress: 95~~80~~% upon installation, 5~~10~~% upon acceptance of pipe following receipt of post-construction CCTV inspection demonstrating acceptable installation as approved by the Engineer. ~~receipt of positive test results and 10% upon final cleanup and acceptance by the Engineer.~~
Includes labor, material and equipment required for installation of sewer pipe and removal and disposal of all sewer pipe shown on the Drawings and includes unmarked sewer pipe and replacement piping which, in the Engineer's judgment, could not be avoided by the Contractor. Also includes for installation shoring/bracing and wood sheeting left in place, saw cutting, furnishing, handling and installation of materials, pressure testing, couplings, removing and replacing signs, fences, benches, and mailboxes, removing and replacing granite curbing and bituminous concrete curbing, sidewalk replacement, crosswalk restoration, replacement of asphalt berm, driveway repairs, protecting and restoring retaining walls, removal and replacing guardrails, dust controls, pavement cutting, removal and disposal of pavement, clearing and grubbing, pipe bedding and blanket, marking tape, backfill and compaction, clay dams, wyes, ductile iron tees for chimneys, coring into existing manholes, removing and disposing of existing manholes, bricking and bulkheading of existing pipe where noted on Drawings, replacement of marked utility services to the property line, replacement of service connections and catch basin laterals, replacement of marked drain lines, pipe jacking, cleaning and flushing, and bypass pumping of sewer flows and/or hauling and disposal. Up to 3 feet of asphalt and/or concrete aprons for driveways and gravel resurfacing shall be incidental and not measured separately. Also includes carrier pipes, if needed, to meet horizontal and vertical separation requirements from water mains or to cross culvert. Includes landscape restoration, protection of trees to be preserved as directed by the City's arborist, installation of sidewalk tree pits as directed by the City's arborist, and loaming and seeding. For trenches more than 20-feet deep, Contractor shall be responsible for providing geotechnical engineer certified trench shoring per OSHA. This Pay Item shall also include post-installation CCTV for all pipe segments completed, and all other Work incidental to installing pipe not specified to be paid for under a separate Pay Item.	

ITEM 4.a: 8-inch Gravity Sewer Spot Repair within ROW (0-15 LF) ITEM 5.b: 15-inch Storm Drain Pipe Spot Repair within ROW (15-45 LF)	
Measurement	Portion of the Work complete and accepted, as shown on the Drawings
Payment	Unit price per each
Schedule of Payment	Monthly based on Work progress~~: 80% upon installation, 10% upon receipt of positive test results and 10% upon final cleanup and acceptance by the Engineer.~~
Includes labor, material and equipment required for installation of sewer spot repair within the sidewalk and removal and disposal of sewer pipe shown on the Drawings and includes unmarked sewer pipe and replacement piping which, in the Engineer's judgment, could not be avoided by the Contractor. Also includes for installation of shoring/bracing and wood sheeting left in place, saw cutting, furnishing, handling and installation of materials, pressure testing, couplings, tree trimming, removing and replacing signs, fences, benches and mailboxes, removing and replacing granite curbing and bituminous concrete curbing, sidewalk replacement, installation of replacement of asphalt berm, driveway repairs, removal and replacing guardrails, dust controls, pavement cutting, removal and disposal of pavement, clearing and grubbing, pipe bedding and blanket, marking tape, backfill and compaction, clay dams, wyes, ductile iron tees for chimneys, sewer laterals, connecting to existing sewer or drain with new pipe and if applicable including concrete collars and filling annular space around pipe with high strength non-shrink grouting, connecting to existing laterals, coring into existing manholes, removing and disposing of existing manholes, bricking and bulkheading of existing pipe where noted on Drawings, replacement of marked utility services to the property line, replacement of marked drain lines, cleaning and flushing, and bypass pumping of sewer flows and/or hauling and disposal. Up to 3 feet of asphalt and/or concrete aprons for driveways and gravel resurfacing shall be incidental and not measured separately. Also includes carrier pipes, if needed, to meet horizontal and vertical separation requirements from water mains or to cross culvert. Includes any exploratory test pit excavation where noted on the Drawings to confirm utility or pipe locations. Includes landscape restoration, protection of trees to be preserved and loaming and seeding. For trenches in excess of 20-feet deep, Contractor shall be responsible for providing geotechnical engineer certified trench shoring per OSHA. This Pay Item shall also include post-installation CCTV for all pipe segments completed and all other Work incidental to installing pipe not specified to be paid for under a separate Pay Item.	

ITEM 4.b: 8-inch Gravity Sewer Spot Repair within ROW (0-15 LF, Storm over Sewer) ITEM 4.c: 8-inch Gravity Sewer Spot Repair within ROW (15-45 LF, Storm over Sewer) ITEM 5.a: 10-inch Storm Drain Pipe Spot Repair within ROW (0-15 LF, Storm over Sewer)	
Measurement	Portion of the Work complete and accepted, as shown on the Drawings
Payment	Unit price per each
Schedule of Payment	Monthly based on Work progress: ~~80% upon installation, 10% upon receipt of positive test results and 10% upon final cleanup and acceptance by the Engineer.~~
Includes labor, material and equipment required for installation of storm drain and sewer spot repair where storm and sewer are in the same trench, and removal and disposal of all sewer and storm drain pipe shown on the Drawings and includes unmarked sewer pipe and replacement piping which, in the Engineer's judgment, could not be avoided by the Contractor. Also includes for installation, but is not limited to: Shoring/bracing and wood sheeting left in place, saw cutting, furnishing, handling and installation of materials, pressure testing, couplings, sewer laterals, connecting to existing sewer or drain with new pipe and if applicable including concrete collars and filling annular space around pipe with high strength non-shrink grouting, connecting to existing laterals, tree trimming, removing and replacing signs, fences, benches and mailboxes, removing and replacing granite curbing and bituminous concrete curbing, installation of replacement of asphalt berm, driveway repairs, removal and replacing guardrails, dust controls, pavement cutting, removal and disposal of pavement, clearing and grubbing, pipe bedding and blanket, marking tape, backfill and compaction, clay dams, wyes, ductile iron tees for chimneys, coring into existing manholes, removing and disposing of existing manholes, bricking and bulkheading of existing pipe where noted on Drawings, replacement of marked utility services to the property line, replacement of marked drain lines, cleaning and flushing, and bypass pumping of sewer flows and/or hauling and disposal. Up to 3 feet of asphalt and/or concrete aprons for driveways and gravel resurfacing shall be incidental and not measured separately. Also includes carrier pipes, if needed, to meet horizontal and vertical separation requirements from water mains or to cross culvert. Includes any exploratory test pit excavation where noted on the Drawings to confirm utility or pipe locations. Includes landscape restoration, protection of trees to be preserved and loaming and seeding. For trenches in excess of 20 feet deep, Contractor shall be responsible for providing geotechnical engineer certified trench shoring per OSHA. This Pay Item shall also include post-installation CCTV for all pipe segments completed and all other Work incidental to installing pipe not specified to be paid for under a separate Pay Item.	

ITEM 6: 6-inch PVC Sewer Service Lateral	
Measurement	As measured along the horizontal projection of the centerline of the pipe
Payment	Unit price per linear foot installed complete in place and tested
Schedule of Payment	Monthly based on Work progress: 95~~80~~% upon installation, 5~~10~~% upon acceptance of pipe following receipt of post-construction CCTV inspection demonstrating acceptable installation as approved ~~receipt of positive test results and 10% upon final cleanup and acceptance~~ by the Engineer.
Includes labor, tools, equipment required to install the pipe as well as: Excavation, shoring/bracing and wood sheeting left in place, saw cutting, furnishing, handling and installation of materials, couplings, loam and seed, removing and replacing signs, fences, benches and mailboxes, removing and resetting granite curbing, sidewalk replacement, replacement of asphalt berm, driveway repairs, removal and replacing guardrails, up to 3 feet of asphalt and/or concrete aprons for driveways and gravel resurfacing, dust controls, pavement cutting, removal and disposal of pavement, clearing and grubbing, removal and disposal of existing service lateral pipe, pipe bedding and blanket, backfill and compaction, clay dams, service lateral wyes, reconnecting the existing sewer service lateral, bypass pumping of sewer flows, testing, and insulation as specified and shown on the Drawings or as directed by the Engineer. Also includes replacement of marked utility services to the curb line unless directed otherwise by the Engineer and replacement of marked drain lines. Includes carrier pipes, if needed, to meet horizontal and vertical separation requirements from water mains or to cross culverts. Also includes landscape restoration, loam and seed and all other Work incidental to installing pipe not specified to be paid for under a separate Pay Item.	

ITEM 7: 8-inch Short Liner – Sewer ITEM 8: 12-inch Short Liner – Storm	
Measurement	Actual number of linear feet of each pipe sized lined, measured from the interior walls of the manholes.
Payment	Unit price per linear foot.
Schedule of Payment	Monthly based on Work progress~~: 80% upon installation, 20% upon post-construction CCTV inspection acceptance by the Engineer and final cleanup.~~
Includes material and equipment, services, installation, and construction associated with the placement of a short liner, including necessary work to facilitate access for lining and other incidental Work. Additional expenses related to alternative hours worked to perform Work during low flow; pre- and post-installation CCTV inspection; pipe cleaning; installation of pre-liner, the storage, testing, and disposal of any material resulting from the cleaning and inspection process; treatment or disposal of the process water from the lining process per MWRA Sewer Use Regulations, coordination and permitting with MWRA, reinstatement of services; dye testing services to determine if they are active, environmental controls; Warranty Inspection; and bypass pumping or redirecting of existing flows shall be considered incidental to the Work and shall not be measured separately for payment. Includes excavation, trenching, and temporary/permanent resurfacing associated with bypass pumping. Includes up to 5 gallons of grout pumped per service for grouting of services. Additional grout pumped to be measured and paid under Pay Item 13~~2~~. Excludes cutting of protruding service connections measured and paid under Pay Item 12~~1~~. Additionally, if during final inspection, the Engineer observes visual defects such as foreign inclusions, discoloration, dry/soft spots, pinholes, major wrinkles, bulges, and de-lamination, the Contractor shall be responsible for fixing the defects at no additional cost to the City.	

ITEM 9.a, C-2: 8-inch Cured-in-Place Pipe (CIPP) – Sewer ITEM 9.b: 10-inch Cured-in-Place Pipe (CIPP) – Sewer ITEM 9.c: 12-inch Cured-in-Place Pipe (CIPP) – Sewer ITEM 10.a, C-3: 8-inch Cured-in-Place Pipe (CIPP) – Storm ITEM 10.b: 10-inch Cured-in-Place Pipe (CIPP) – Storm ITEM 10.c, C-4, D-2: 12-inch Cured-in-Place Pipe (CIPP) – Storm ITEM 10.d, C-5, D-3: 15-inch Cured-in-Place Pipe (CIPP) – Storm ITEM D-4: 20-inch Cured-in-Place Pipe (CIPP) – Storm	
Measurement	Actual number of linear feet of each pipe sized lined, measured from the interior walls of the manholes
Payment	Unit price per linear foot
Schedule of Payment	Monthly based on Work progress: 95% upon installation and 5% ~~at final Warranty Inspection~~ upon acceptance of pipe following receipt of post-installation CCTV inspection demonstrating acceptable installation as approved by the Engineer.
Includes material and equipment, services, installation, and construction associated with the placement of cured-in-place pipe (CIPP) as specified in Section 33 01 30.72, including removing and reconstructing the top sections of manholes as necessary to facilitate access for lining and other incidental Work. Additional expenses related to alternative hours worked to perform Work during low flow; removing and restoring existing weir walls, pre- and post-installation CCTV inspection; pipe cleaning; installation of pre-liner, the storage, testing, and disposal of any material resulting from the cleaning and inspection process; treatment or disposal of the process water from the lining process per MWRA Sewer Use Regulations, coordination and permitting with MWRA, reinstatement of services; dye testing services to determine if they are active, environmental controls; Warranty Inspection; and bypass pumping or redirecting of existing flows shall be considered incidental to the Work and shall not be measured separately for payment. Includes excavation, trenching, and temporary/permanent resurfacing associated with bypass pumping. Includes up to 5 gallons of grout pumped per service for grouting of services. Additional grout pumped to be measured and paid under Pay Item 13~~2~~. Excludes cutting of protruding service connections measured and paid under Pay Item 12~~1~~. Additionally, if during final inspection, the Engineer observes visual defects such as foreign inclusions, discoloration, dry/soft spots, pinholes, major wrinkles, bulges, and de-lamination, the Contractor shall be responsible for fixing the defects at no additional cost to the City.	

ITEM 11: 8-12-inch Clean, Inspect, Test & Seal (CITS)	
Measurement	Actual linear feet of pipe cleaned, inspected, tested, and sealed upon acceptance by the Engineer
Payment	Unit price per linear foot
Schedule of Payment	Monthly based on Work progress: 95% upon installation and 5% ~~at~~ upon acceptance of pipe following receipt of post-installation CCTV inspection demonstrating acceptable installation as approved ~~final inspection and acceptance~~ by the Engineer
Includes material and equipment, services, installation, construction and testing inherent to the Work for the cleaning, CCTV inspection, testing, and grouting of mainline pipe joints and circular cracks as specified in Section 33 01 30.61, including other incidental Work. Additional expenses related to alternative hours worked to perform Work during low flow; CCTV inspection; the storage, testing, and disposal of any material resulting from the cleaning and inspection process; environmental controls; and bypass pumping or redirecting of existing flows shall be considered incidental to the Work and shall not be measured separately for payment. Includes up to 5 gallons of grout pumped per mainline joint or circular crack. Additional grout pumped will be measured and paid under Pay Item 13~~2~~.	

ITEM 12: Cut Protruding Service Connection	
Measurement	Actual number of service connections located and cut
Payment	Unit price per each
Schedule of Payment	Monthly based on Work progress
Includes material and equipment, services, and construction associated with the locating and cutting/grinding of protruding service connections as specified in Section 33 01 30.10, including other incidental Work. Additional expenses related to alternative hours worked to perform Work during low flow; CCTV inspection; pipe cleaning; the storage, testing, and disposal of any material resulting from the cleaning and inspection process; environmental controls; and bypass pumping or redirecting of existing flows shall be considered incidental to the Work and shall not be measured separately for payment. If the host pipe is damaged while cutting protruding service connections, repairing the host pipe shall be considered incidental to the Work and shall not be measured separately for payment.	

ITEM 13: Additional Grout Pumped for Services	
Measurement	Actual number of gallons of grout pumped
Payment	Unit price per gallon
Schedule of Payment	Monthly based on Work progress
Includes equipment, material, construction, and labor associated with mainline service connection grouting requested by Engineer as specified in Section 33 03 30.61.	

ITEM 14: 4-Foot Diameter Sewer Manhole Base Section	
Measurement	Each installed, complete in place, as shown on Drawings
Payment	Unit price per each
Schedule of Payment	Monthly based on Work progress: 90% upon installation, 10% upon acceptance of manhole following receipt of positive test results and construction of invert as approved by the Engineer
Includes labor, tools, equipment, dust controls, removal and disposal of existing sewer structures, furnishing and installing precast concrete manhole bases; pavement cutting, removal and disposal of pavement, clearing and grubbing, excavation, bedding, shoring/bracing and sheeting left in place, backfill and compaction, shoring and bracing; interior drop connections if required, connection to existing sewer with new pipe if applicable including concrete collars and filling annular space around pipe with high strength non-shrink grouting, supports, damp proofing, flexible boots, butyl sealants, construction of inverts, concrete encasement, link seals, hydraulic cement, coring, manhole rungs, testing, bricking and bulkheading of existing pipe where noted on Drawings, landscape restoration, loam and seed, resetting of curbs; and all other appurtenances contained within the manhole base section as shown on the Drawings. For trenches in excess of 20-feet, Contractor responsible for providing geotechnical engineer certified trench shoring per OSHA. Extended bases for anti-flotation shall be provided where required based on calculations to be performed by contractor or as directed by the Engineer or Owner.	

ITEM 15: 4-Foot Diameter Sewer Manhole Riser	
Measurement	As measured from top of cone to the downstream invert of the pipe, complete in place, as shown on the Drawings
Payment	Unit price per vertical foot
Schedule of Payment	Monthly based on Work progress: 90% upon installation, 10% upon acceptance of manhole following receipt of positive test results and construction of invert as approved by the Engineer.
Includes labor, tools, equipment, dust controls, removal and disposal of existing sewer structures, furnishing and installing precast concrete manhole riser and top sections of varying height; pavement cutting, removal and disposal of pavement, clearing and grubbing, excavation, bedding, shoring/bracing and wood sheeting left in place, backfill and compaction, shoring and bracing; interior drop connections, connection to existing sewer or drain with new pipe if applicable, supports, stainless steel pipe supports and anchors, damp proofing, flexible boots, butyl sealants, construction of inverts, concrete encasement, link seals, hydraulic cement, coring, manhole rungs, testing, bricking and bulkheading of existing pipe where noted on Drawings, landscape restoration, loam and seed, resetting of curbs; and all other appurtenances contained within the manhole riser and top sections as shown on the Drawings. For trenches in excess of 20-feet, contractor is responsible for providing geotechnical engineer certified trench shoring per OSHA. Excludes manhole base in Pay Item 1~~4~~3.	

ITEM 16: 4-Foot Diameter Storm Manhole Base Section	
Measurement	Each installed, complete in place, as shown on Drawings
Payment	Unit price per each
Schedule of Payment	Monthly based on Work progress: 90% upon installation, 10% upon acceptance of manhole following receipt of positive test results and construction of invert as approved by the Engineer.
Includes labor, tools, equipment, dust controls, removal and disposal of existing storm drain structures, furnishing and installing precast concrete manhole bases; pavement cutting, removal and disposal of pavement, clearing and grubbing, excavation, bedding, shoring/bracing and sheeting left in place, backfill and compaction, shoring and bracing; interior drop connections if required, connection to existing drain with new pipe if applicable including concrete collars and filling annular space around pipe with high strength non-shrink grouting, supports, damp proofing, flexible boots, butyl sealants, concrete encasement, link seals, hydraulic cement, coring, manhole rungs, testing, bricking and bulkheading of existing pipe where noted on Drawings, landscape restoration, loam and seed, resetting of curbs; and all other appurtenances contained within the manhole base section as shown on the Drawings. For trenches in excess of 20-feet, Contractor responsible for providing geotechnical engineer certified trench shoring per OSHA. Extended bases for anti-flotation shall be provided where required based on calculations to be performed by contractor or as directed by the Engineer or Owner.	

ITEM 17: 4-Foot Diameter Drain Manhole Riser Section	
Measurement	As measured from top of cone to the downstream invert of the pipe, complete in place, as shown on the Drawings
Payment	Unit price per vertical foot
Schedule of Payment	Monthly based on Work progress: 90% upon installation, 10% upon acceptance of manhole following receipt of positive test results and construction of invert as approved by the Engineer.
Includes labor, tools, equipment, dust controls, removal and disposal of existing storm drain structures, furnishing and installing precast concrete manhole riser and top sections of varying height; pavement cutting, removal and disposal of pavement, clearing and grubbing, excavation, bedding, shoring/bracing and wood sheeting left in place, backfill and compaction, shoring and bracing; interior drop connections, connection to existing sewer or drain with new pipe if applicable, supports, stainless steel pipe supports and anchors, damp proofing, flexible boots, butyl sealants, concrete encasement, link seals, hydraulic cement, coring, manhole rungs, testing, bricking and bulkheading of existing pipe where noted on Drawings, landscape restoration, loam and seed, resetting of curbs; and all other appurtenances contained within the manhole riser and top sections as shown on the Drawings. For trenches in excess of 20-feet, contractor is responsible for providing geotechnical engineer certified trench shoring per OSHA. Excludes manhole base in Pay Item 16~~5~~.	

ITEM 18: 30-inch Standard Manhole Frame & Cover – Sewer ITEM 19, D-11: 30-inch Standard Manhole Frame & Cover – Drain	
Measurement	Each installed, complete in place, as shown on Drawings.
Payment	Unit price per each.
Schedule of Payment	Monthly based on Work progress.
Includes materials, equipment, services and for furnishing and setting frames and covers to final grade of standard frames and covers, including brick and mortar leveling courses or concrete grade rings as specified, and asphalt collar over frame base, as specified in Section 33 39 13. Contractor is responsible for setting manhole frame and cover grades during temporary and final paving and all resetting, raising, or lowering associated with roadway and laying final pavement shall be included in this Pay Item.	

ITEM 20, D-12: Rebuild Bench and Invert	
Measurement	Actual number of manhole benches and inverts rebuilt.
Payment	Unit price per each.
Schedule of Payment	Monthly based on Work progress.
Material and equipment, services, installation, and construction associated with the rebuilding of manhole benches and inverts as specified in Section 33 01 30.81. Additional expenses related to alternative hours worked to perform Work during low flow; heavy cleaning of manhole to remove debris, power washing the structure; surface preparation; the storage, testing, and disposal of any material resulting from the cleaning and inspection process; environmental controls; and bypass pumping or redirecting of existing flows shall be considered incidental to the Work and shall not be measured separately for payment.	

ITEM 21: Manhole Rehabilitation – Epoxy Coating	
Measurement	Actual number of vertical feet of manhole coated, measured along the interior vertical wall from the top of the manhole bench to the bottom of the manhole frame.
Payment	Unit price per vertical foot.
Schedule of Payment	Monthly based on Work progress~~: 90% upon installation; 10% at final Warranty Testing~~
Includes material and equipment, services, installation, and construction associated with the cementitious or epoxy coating of manhole walls as specified in Section 33 01 30.81, including initial interior sealing and primer application (cementitious liner), patching, or repointing existing structure, power washing the structure, surface preparation, sealing of the bench, curtain grouting and other incidental Work. Additional expenses related to alternative hours worked to perform Work during low flow; heavy cleaning of manhole to remove debris, power washing the structure; surface preparation; the storage, testing, and disposal of any material resulting from the cleaning and inspection process; environmental controls; and bypass pumping or redirecting of existing flows shall be considered incidental to the Work and shall not be measured separately for payment.	

ITEM 22, C-6, D-13: Manhole Rehabilitation – Cementitious Coating	
Measurement	Each installed complete in place as shown on Drawings
Payment	Unit price per each
Schedule of Payment	Monthly based on Work progress: 9~~5~~0% upon installation; ~~5~~10% ~~at final Warranty Testing~~ upon receipt of positive test results as approved by the Engineer.
Includes equipment, services, material, installation, construction, and labor associated with cementitious restoration of existing sewer manhole as specified in Section 33 01 30.81, including initial interior sealing, patching, or repointing of the existing structure, power washing the structure, surface preparation, sealing of the bench and invert, curtain grouting, and other incidental Work. Additional expenses related to alternative hours worked to perform Work during low flow; heavy cleaning of manhole to remove debris, power washing the structure; surface preparation; the storage, testing, and disposal of any material resulting from cleaning and inspection process, and bypass pumping or redirecting of existing flows shall be considered incidental to the Work and shall not be measured separately for payment. Access to manholes, removal and disposal of sediment and debris, pedestrian and traffic control shall be considered incidental to the Work and shall not be measured separately for payment. All traffic control plans shall be approved by the City Traffic Engineer prior to the Work being started.	

ITEM 23: Heavy Clean Manhole	
Measurement	Actual number of manholes cleaned.
Payment	Unit price per each.
Schedule of Payment	Monthly based on Work progress.
Material, equipment, and services associated with the cleaning of manhole as specified in Section 33 01 30.81, and other incidental Work. Additional expenses related to alternative hours worked to perform Work during low flow; the storage, testing, and disposal of any material resulting from the cleaning and inspection process, rebuilding bench and invert where indicated on the Drawings, and bypass pumping or redirecting of existing flows shall be considered incidental to the Work and shall not be measured separately for payment.	

ITEM 24, A-3: Precast Concrete Catch Basin Complete with Frame and Grate	
Measurement	Each installed, complete in place, as shown on the Drawings.
Payment	Unit price per each
Schedule of Payment	Monthly based on Work progress.
Includes but is not limited to all materials, equipment, services and for furnishing and installing drain catch basins complete, including brick and mortar leveling courses or concrete grade rings as specified, and asphalt collar over frame base. Contractor is responsible for setting catch basin frame and grate grades during temporary and final paving and all resetting, raising or lowering associated with roadway and laying final pavement shall be included in this item, pavement cutting, removal and disposal of pavement, clearing and grubbing, excavation, bedding, shoring/bracing and wood sheeting left in place, backfill and compaction, shoring and bracing; hooded outlet, supports, construction of inverts, concrete encasement, deep sumps, riser sections, flat or cone tops, providing frame and grate, double frame and grate where shown, or curb inlet, hydraulic cement, coring, testing, bricking and bulkheading of existing pipe where noted on Drawings, landscape restoration, loam and seed, resetting of curbs; and all other appurtenances contained within the catch basin.	

ITEM 25.a, B-4: Water Main Installation	
Measurement	Installed, completed in place, as shown on the Drawings.
Payment	~~Percent of lump sum price based on Schedule of Values.~~ Lump Sum
Schedule of Payment	Monthly based on quantity installed, tested, and accepted.
Includes but is not limited to all labor, equipment, tools, clearing, traffic controls, saw cutting trench pavement, excavation, bedding, backfill, shoring/bracing and wood sheeting left in place, furnishing, handling and installation of materials, gate valves, valve boxes, bends, couplings, CLDI pipe, and any associated appurtenances. Also includes replacing signs, fences, and benches and mailboxes, removing and replacing granite curbing and bituminous concrete curbing, sidewalk replacement, installation of replacement of asphalt berm, driveway repairs, removal and replacing guardrails, dust controls, pavement cutting, removal and disposal of pavement, clearing and grubbing, pipe bedding and blanket, marking tape, backfill and compaction. This item includes disinfection and testing, capping/plugging abandoned utilities left in place, supporting and temporary relocation of existing utilities and all other incidentals necessary to install new CLDI water main, and abandon existing water mains as shown on the Drawings and as directed by the Engineer.	

ITEM 25.b, D-14: Water Main in Manhole Abandonment	
Measurement	Actual number of water mains abandoned
Payment	Unit price per each
Schedule of Payment	Monthly based on quantity abandoned and approved by the Engineer
Includes but is not limited to all labor, equipment, tools, clearing, traffic controls, and saw cutting required to cut, cap and abandon water mains inside existing manholes. This item includes capping/plugging abandoned utilities left in place, removal of abandoned water main segment and all other incidentals necessary to remove the existing water main from the manhole as indicated on the Drawings and as directed by the Engineer.	

ITEM 26.a: Unsuitable Material Excavation Above Normal Grade ITEM 26.b: Unsuitable Material Excavation Below Normal Grade	
Measurement	Actual number of cubic yards of unsuitable material, measured in place within the trench pay limits shown on the Drawings and as specified.
Payment	Unit price per cubic yard, complete in place.
Schedule of Payment	Monthly based on quantity installed.
Includes materials, equipment, services for excavation and replacement with gravel borrow of materials determined by the Engineer as unsuitable for pipe support or bedding below or above the normal grade of the trench or as backfill material for trenches, as defined in Section 31 00 00 including furnishing and installing gravel as specified and compacting, all required testing, documentation, and legal disposal of spoils not containing oil or hazardous materials. Excludes rock and boulder excavation. Special pipe bedding shall be paid for under Pay Item 27~~5~~.	

ITEM 27: Special Pipe Bedding	
Measurement	As measured along the centerline of the pipe at locations directed by the Engineer
Payment	Unit price per linear feet, complete in place
Schedule of Payment	Monthly based on quantity installed
Includes materials, equipment, services for excavation, installation of geotextile fabric and crushed stone bedding determined by the Engineer as suitable for pipe support below normal grade of the trench as defined in Section 31 00 00 including furnishing and installing gravel as specified and compacting, all required testing, documentation, and legal disposal of spoils not containing oil or hazardous materials. Excludes suitable backfill used to replace rock and boulder excavation.	

ITEM 28, D-15: Rock and Boulder Excavation	
Measurement	Actual number of cubic yards of rocks and boulders (rock) removed, measured in place within the trench pay limits shown on the Drawings and as specified
Payment	Unit price per cubic yard.
Schedule of Payment	Monthly based on Work progress
Includes labor, tools, equipment, and materials to remove rock from its original bed by drilling, barring, or wedging, specifically ledge or bedrock and boulders larger than one cubic yard in volume. Includes excavation, removal, and disposal of the rock, replacement of rock with gravel backfill material as specified in Section 31 00 00 or directed by the Owner, and other incidental Work necessary to remove and dispose of rock encountered in trenches excavated to perform the Work shown on the Drawings.	

ITEM 29, D-21: Test Pits	
Measurement	As measured in place based on material excavated
Payment	Unit price per cubic yard.
Schedule of Payment	Monthly based on quantity in place.
Includes labor, equipment, tools and materials to determine location, depth, diameter and material type for uncharted utilities or to shut off existing utilities in locations shown on Drawings, excavation, removing and disposing of unsuitable materials, temporary pavement, replacement of unsuitable materials with select backfill, backfilling and compacting in accordance with the Contract Documents, loam and seed, removing and resetting granite and bituminous curb and all other incidentals necessary to excavate uncharted utilities or locations noted in Drawings to determine information required. Field report/notes containing photos, sketches, size, depth of test pit, size and depth of utilities encountered in each test pit.	

ITEM 30: Controlled Density Fill (CDF)	
Measurement	As measured in place prior to excavation within Pay Limits shown on Drawings
Payment	Unit price per cubic yard
Schedule of Payment	Monthly based on quantity completed
Includes labor, tools, equipment, materials, excavation, placement and testing of controlled density fill material at locations shown on the Drawings. Includes any bricking and bulkheading of existing pipes as shown on the Drawings. Controlled Density Fill material shall be as defined in Section 31 00 00.	

ITEM 31, A-4, B-5, D-16: 4-inch Temporary Pavement	
Measurement	Actual number of square yards of temporary trench pavement installed, measured in place
Payment	Unit price per square yard
Schedule of Payment	Monthly based on Work progress
Includes all labor, equipment, tools, and materials to furnish and install temporary trench pavement, including saw cutting neat, straight edge, remove and dispose of existing pavement, fine grading and compacting gravel sub-base, emulsion, bituminous tack coat, adjusting of roadway castings to final grade, placement and compaction of required depth of Type I-1 binder course hot mix asphalt in required lift depths, restoring pavement markings, and all other incidental Work necessary to furnish and install temporary trench pavement. Includes maintenance of temporary trench pavement until replaced by permanent pavement or when directed by Engineer.	

ITEM 32, A-5, B-6, D-17: Permanent Pavement	
Measurement	Actual number of square yards of permanent trench pavement installed, measured in place
Payment	Unit price per square yard
Schedule of Payment	Monthly based on Work progress: 90~~85~~% upon installation, 10% when pavement markings have been fully restored.~~, and 5% at final Warranty Inspection~~
Includes labor, equipment, tools, and materials to furnish and install binder and top course hot mix asphalt for permanent trench pavement, including saw cutting neat, straight edge, remove and dispose of temporary pavement and existing pavement, fine grading and compacting gravel sub-base, emulsion, bituminous tack coat, adjusting of roadway castings to final grade, placement and compaction of required depth of Type I-1 binder and top course hot mix asphalt in required lift depths, restoring pavement markings including but not limited to roadway center lines and bike lanes and all other incidental Work necessary to furnish and install permanent trench pavement.	

ITEM 33: Additional Bituminous Pavement	
Measurement	In place based on weigh slips submitted
Payment	Unit price per ton
Schedule of Payment	Monthly based on quantity installed
Includes labor, material and equipment required to install additional bituminous pavement as directed by the Engineer. Leveling course for trenches, leveling course for mill and overlay, and up to 3-feet of driveway apron reconstruction shall not be measured for payment and is considered incidental to other Pay Items. Includes payment for additional temporary trench pavement necessary to match existing thickness. Contractor shall provide Engineer with weigh slips.	

ITEM 34, A-6, D-18: Remove and Reset Vertical Granite Curb	
Measurement	Linear foot complete in place
Payment	Unit price per linear foot
Schedule of Payment	Monthly based on Work progress
Includes labor, material and equipment required to remove, protect and reset granite curbing where directed onsite by the Engineer. Including saw cutting, removing and disposing of pavement, restoring and replacing pavement, excavation, bedding, backfill, compaction, concrete, removing and reinstalling granite curbing, traffic controls, replacement of pavement markings and all other incidental Work required for completing Work under this Pay Item.	

ITEM 35, A-7, B-7, D-19: Replace Sidewalk in Kind	
Measurement	As measured in place to replace sidewalks removed for installation of services
Payment	Unit price per square yard
Schedule of Payment	Monthly based on quantity installed, tested, and approved by the Engineer
Includes material, equipment, labor, tools, equipment, and materials to furnish and install concrete or hot mix asphalt to replace sidewalk sections removed for installation of water or sewer mains, services and appurtenances. Includes saw cutting of existing sidewalk; removal and disposal of existing materials, removal and disposal of tree stumps, providing 12-gravel sub-base, removal and resetting and traffic signs as necessary, replacing bituminous curb, fine grading, compaction, steel reinforcement for concrete, concrete, scoring, leveling, expansion joints, hot-mix asphalt handwork, tack coat, compaction and all other incidentals necessary to complete replacement of full sidewalk panels damaged by installation of Work. Match existing depth and grades of sidewalk surface.	

ITEM 36, D-20: Miscellaneous Concrete	
Measurement	Complete in place based on batch plant slips
Payment	Unit price per cubic yard
Schedule of Payment	Monthly based on quantity used
Includes labor, tools, material, and equipment required for furnishing and installing miscellaneous concrete, providing concrete as specified, welded wire fabric (if required) as directed by Engineer; specifically includes thrust blocks, cradles, and pipe encasement.	

ITEM 37, A-8, D-24: Crosswalk Striping	
Measurement	Actual number of crosswalks striped
Payment	Unit price per each
Schedule of Payment	Monthly based on quantity installed and approved by the Engineer
Includes labor, material, and equipment required for reinstating crosswalks impacted by the Work or new paving. Striping material and installation shall be as defined in Section 32 17 23. Reapplication of the material for any reason will not be compensated.	

ITEM 38, B-8, D-28: Catch Basin Inlet Protection	
Measurement	Units installed complete in place
Payment	Unit price each
Schedule of Payment	Monthly based on quantity installed, tested, and accepted by the Engineer
Includes labor, materials, tools and equipment necessary to furnish and install sedimentation sacks in accordance with the Contract Documents, routine maintenance, removal and disposal of sediment accumulation, regular replacement of sedimentation sacks as required or directed, cleaning catch basin sumps of any sediment allowed to enter the drainage system due to negligence of maintenance and all other incidentals necessary to furnish and install sediment sacks for all catch basins within and adjacent to the Project area.	

ITEM 39: Owner's Contingency Allowance for Additional Dewatering	
Measurement	Portion of Owner's contingency allowance amount authorized by the Owner
Payment	Percent of not to exceed contingency amount authorized by Change Order
Schedule of Payment	Monthly as authorized by Change Order
Includes but is not limited to all labor, material and equipment required to design, install, operate, maintain, and remove of dewatering system(s), including, but not limited to, pumping and handling groundwater, permits not included in mobilization, treatment and testing if required, legal discharge/disposal thereof, environmental controls and power as required to dewater beyond Normal dewatering. Normal dewatering shall not be measured for payment and is considered incidental to other Pay Items. The Contractor shall not receive payment for any unused portion of the Owner's Contingency allowance for Additional Dewatering.	

ITEM 40: Owner's Contingency Allowance for Unforeseen Conditions	
Measurement	Portion of Owner's contingency allowance amount authorized by the Owner
Payment	Percent of not to exceed contingency amount authorized by Change Order
Schedule of Payment	Monthly as authorized by Change Order
For price adjustments for unforeseen conditions encountered during the progress of the Work, for actual subsurface or physical conditions encountered at the Site that differ substantially or materially from those shown on the Drawings or indicated in the Contract Documents per 16.4 of the General Conditions of the Contract, with a price adjustment requested in writing within 14 days of the unforeseen condition being discovered. This allowance can only be used with the approval from the Engineer and Owner. The Contractor shall not receive payment for any unused portion of the Owner's Contingency allowance for Unforeseen Conditions.	

ITEM 41: Owner's Contingency Allowance for Temporary No Parking Signs	
Measurement	Portion of Owner's contingency allowance authorized by Owner
Payment	$1.00 per sign and based on invoices submitted for actual number of temporary no parking signs purchased from the City
Schedule of Payment	Monthly based on number of parking signs purchased from the City
Direct cost of Temporary No Parking Signs purchased from the City at $1.00 per sign per Section 01 11 05. No Contractor markup and/or administration fees are allowed. Labor, material and equipment, services, installation, associated with the purchasing and posting of Temporary No Parking Signs is not eligible for payment under this Pay Item and shall be considered incidental to the overall Project. Contractor shall not receive payment for any unused portion of the Owner's contingency allowance.	

ITEM 42, A-10, B-9, D-29: Owner's Contingency Allowance for Contaminated Soil and Groundwater	
Measurement	Portion of Owner's contingency allowance amount as authorized by the Owner
Payment	Percent of not to exceed contingency amount authorized by Change Order
Schedule of Payment	Monthly as authorized by Change Order
Includes labor, equipment, tools, and materials necessary to excavate, stockpile, maintain stockpiles, load and transport contaminated soil, and to store, treat and discharge contaminated groundwater as specified in Section 02 61 00 in the event contamination is encountered during construction. Includes laboratory characterization of contaminated soil and groundwater. Contractor shall not receive payment for any unused portion of the contingency allowance for Contaminated Soil and Groundwater.	

ITEM 43, A-11, B-10, D-30: Owner's Contingency Allowance for Materials Escalation Price Adjustment per MGL c30s38A	
Measurement	Portion of Owner's contingency allowance amount as authorized by the Owner
Payment	Percent of not to exceed contingency amount authorized by Change Order
Schedule of Payment	Monthly as authorized by Change Order
For price adjustments for materials escalation of Liquid Asphalt, Diesel Fuel, Gasoline, and Portland Cement per MGL c30s38A – see Supplementary Conditions. Contractor shall not receive payment for any unused portion of the Owner's Contingency allowance for Materials Escalation.	

ITEM 44, A-12, D-31: Owner's Contingency Allowance for Private Property Restoration	
Measurement	Portion of Owner's contingency allowance amount as authorized by the Owner
Payment	Percent of not to exceed contingency amount authorized by Change Order
Schedule of Payment	Monthly as authorized by Change Order
Includes but is not limited to all labor, tools, material and equipment required for furnishing and restoring all landscaping and/or property impacted during construction, removal and replacement of existing fences, installation of loam and seed, and all other Work incidental to the satisfactory completion of the Work. Contractor shall not receive payment for any unused portion of the Owner's Contingency allowance for Private Property Restoration.	

1.03 ALTERNATES (IF AWARDED BY OWNER)

ALTERNATE A: GREEN STORMWATER INFRASTRUCTURE AT CHETWYND AND WEST ADAMS

(see additional item descriptions in Section 1.02)

ITEM A-2: Green Stormwater Infrastructure Infiltration System	
Measurement	Portion of the Work complete and accepted, as shown on the Drawings
Payment	Percent of lump sum price based on Schedule of Values
Schedule of Payment	Monthly based on Work progress.
Material and equipment, services, installation, construction and testing inherent to the Work to install components of green stormwater infrastructure within the limits of Work as shown in the Drawings, including installation of infiltration tanks, geotextile fabric, maintenance port, maintenance port frame and cover, pretreatment structures, infiltration tank boots, antiscour plates and storm drain pipe and fittings integral to the system. Also includes maintenance and protection of traffic, saw cutting and removal of pavement, excavation, normal dewatering, backfill, sheeting, shoring, bedding, disposal of excess materials, site restoration, sidewalk restoration, accessible curb cut ramp restoration, cross walk and stop bar re-striping, removal and resetting of granite curbing, performing a preconstruction existing conditions verification survey, site grading, dust controls, coring and connecting into existing storm drain structures, and all other Work incidental to installing green stormwater infrastructure not specified to be paid for under a separate Pay Item. Contractor shall be responsible for providing geotechnical engineer certified trench shoring per OSHA.	

ITEM A-9: Furnish and Install Accessible Curb Ramps (Type A, B, C, D, E)	
Measurement	Actual number of accessible curb ramps installed
Payment	Unit price per each
Schedule of Payment	Monthly based on quantity installed, tested, and approved by the Engineer
Includes labor, tools, material and equipment required to furnish and install all components associated with new accessible curb ramps from the limits of the ramp tie-in to the adjacent surface(s) in accordance with the Construction Details, including, but not limited to: provision of granite transition curbs, flush granite curbs, tactile warnings, saw cutting of the existing pavement where directed, curb installation, all handling, cutting curb ends square, trimming exposed and hidden faces, cleaning all sections to be set, grading and compacting and/or placement of concrete base, ramp concrete sidewalk, materials as necessary to meet and match adjacent surfaces to ensure smooth transition to proposed or pre-construction conditions, feather sidewalk grade to meet surrounding sidewalk elevation, and, provision and construction of expansion and control joints, surface finishing, and all other incidentals necessary to furnish and install concrete driveways in accordance with the Contract Documents.	

ALTERNATE B: GREEN STORMWATER INFRASTRUCTURE AT FAIRFAX

(see additional item descriptions in Section 1.02)

ITEM B-2: Green Stormwater Infrastructure Non-Infiltrating Biofiltration System	
Measurement	Portion of Work completed and accepted.
Payment	Percent of lump sum price based on Schedule of Values
Schedule of Payment	Monthly based on progress
Material and equipment, services, installation, construction and testing inherent to the Work to install all components of green stormwater infrastructure within the limits of Work as shown in the Drawings, including maintenance and protection of traffic, performing a preconstruction existing conditions verification survey, saw cutting and removal of pavement, excavation, normal dewatering, installation of the impermeable liner, mesh liner, installation of underdrain, backfill, sheeting, shoring, bedding, plantings, mulch, river stone, bridging stone, installation of pretreatment inlet devices, installation of surrounding curbing and concrete collar as required, site grading, dust controls, commissioning of the system, disposal of excess materials, and all other Work incidental to installing the non-infiltrating bioinfiltration system not specified to be paid for under a separate Pay Item.	

ITEM B-3: 6-inch Storm Drain Pipe	
Measurement	As measured along the horizontal projection of the centerline of the pipe from inside manhole face.
Payment	Unit price per linear foot of pipe installed completed in place and tested.
Schedule of Payment	Monthly based on Work progress: 95~~80~~% upon installation, 5~~10~~% upon acceptance of pipe following receipt of post-construction CCTV inspection demonstrating acceptable installation as approved by the Engineer. ~~receipt of positive test results and 10% upon final cleanup and acceptance by the Engineer.~~
Includes labor, material and equipment required for installation of sewer pipe and removal and disposal of all sewer pipe shown on the Drawings and includes unmarked sewer pipe and replacement piping which, in the Engineer's judgment, could not be avoided by the Contractor. Also includes for installation shoring/bracing and wood sheeting left in place, saw cutting, furnishing, handling and installation of materials, pressure testing, couplings, removing and replacing signs, fences, benches, and mailboxes, removing and replacing granite curbing and bituminous concrete curbing, sidewalk replacement, crosswalk restoration, replacement of asphalt berm, driveway repairs, protecting and restoring retaining walls, removal and replacing guardrails, dust controls, pavement cutting, removal and disposal of pavement, clearing and grubbing, pipe bedding and blanket, marking tape, backfill and compaction, clay dams, wyes, ductile iron tees for chimneys, coring into existing manholes, removing and disposing of existing manholes, bricking and bulkheading of existing pipe where noted on Drawings, replacement of marked utility services to the property line, replacement of service connections and catch basin laterals, replacement of marked drain lines, pipe jacking, cleaning and flushing, and bypass pumping of sewer flows and/or hauling and disposal. Also includes carrier pipes, if needed, to meet horizontal and vertical separation requirements from water mains or to cross culvert. Includes installation of clean outs and associated bends and tees. This Pay Item shall also include post-installation CCTV for all pipe segments completed, normal dewatering as specified herein, and all other Work incidental to installing pipe not specified to be paid for under a separate Pay Item.	

ALTERNATE C: ADDITIONAL STORM DRAIN LINING

(see additional item descriptions in Section 1.02)

ALTERNATE D: ADDITIONAL STORM DRAIN UPGRADES ON BROADWAY

(see additional item descriptions in Section 1.02)

ITEM D-5: 12-inch Storm Drain Pipe Spot Repair within ROW (0 – 15 LF) ITEM D-6: 12-inch Storm Drain Pipe Spot Repair within Sidewalk (0 – 15 LF) ITEM D-7: 15-inch Storm Drain Pipe Spot Repair within Sidewalk (0 – 15 LF) ITEM D-8: 12-inch Storm Drain Pipe Spot Repair within Sidewalk (15 – 45 LF)	
Measurement	Portion of the Work complete and accepted, as shown on the Drawings
Payment	Unit price per each
Schedule of Payment	Monthly based on Work progress: 9080% upon installation, 10% upon ~~receipt of positive test results and 10% upon final cleanup and acceptance by the Engineer~~sidewalk installation and acceptance by the Engineer
Includes labor, material and equipment required for installation of sewer spot repair within the sidewalk and removal and disposal of sewer pipe shown on the Drawings and includes unmarked sewer pipe and replacement piping which, in the Engineer's judgment, could not be avoided by the Contractor. Also includes for installation of shoring/bracing and wood sheeting left in place, saw cutting, furnishing, handling and installation of materials, pressure testing, couplings, removing and replacing signs, fences, benches and mailboxes, removing and replacing granite curbing and bituminous concrete curbing, sidewalk replacement, installation of replacement of asphalt berm, driveway repairs, removal and replacing guardrails, dust controls, pavement cutting, removal and disposal of pavement, clearing and grubbing, pipe bedding and blanket, marking tape, backfill and compaction, clay dams, wyes, ductile iron tees for chimneys, sewer laterals, connecting to existing sewer or drain with new pipe and if applicable including concrete collars and filling annular space around pipe with high strength non-shrink grouting, connecting to existing laterals, coring into existing manholes, removing and disposing of existing manholes, bricking and bulkheading of existing pipe where noted on Drawings, replacement of marked utility services to the property line, replacement of marked drain lines, cleaning and flushing, and bypass pumping of sewer flows and/or hauling and disposal. Up to 3 feet of asphalt and/or concrete aprons for driveways and gravel resurfacing shall be incidental and not measured separately. Also includes carrier pipes, if needed, to meet horizontal and vertical separation requirements from water mains or to cross culvert. Includes any exploratory test pit excavation where noted on the Drawings to confirm utility or pipe locations. Includes landscape restoration, protection of trees to be preserved and loaming and seeding. For trenches in excess of 20-feet deep, Contractor shall be responsible for providing geotechnical engineer certified trench shoring per OSHA. This Pay Item shall also include post-installation CCTV for all pipe segments completed, normal dewatering as specified herein, and all other Work incidental to installing pipe not specified to be paid for under a separate Pay Item.	

ITEM D-9: 5-foot Diameter Drain Manhole Base Section	
Measurement	Each installed, complete in place, as shown on Drawings
Payment	Unit price per each
Schedule of Payment	Monthly based on Work progress: 90% upon installation, 10% upon acceptance of manhole following receipt of positive test results and construction of invert as approved by the Engineer
Includes labor, tools, equipment, dust controls, removal and disposal of existing storm drain structures, furnishing and installing precast concrete manhole bases; pavement cutting, removal and disposal of pavement, clearing and grubbing, excavation, bedding, shoring/bracing and sheeting left in place, backfill and compaction, shoring and bracing; interior drop connections if required, connection to existing drain with new pipe if applicable including concrete collars and filling annular space around pipe with high strength non-shrink grouting, supports, damp proofing, flexible boots, butyl sealants, concrete encasement, link seals, hydraulic cement, coring, manhole rungs, testing, bricking and bulkheading of existing pipe where noted on Drawings, landscape restoration, loam and seed, resetting of curbs; and all other appurtenances contained within the manhole base section as shown on the Drawings. For trenches in excess of 20-feet, Contractor responsible for providing geotechnical engineer certified trench shoring per OSHA. Extended bases for anti-flotation shall be provided where required based on calculations to be performed by contractor or as directed by the Engineer or Owner.	

ITEM D-10: 5-foot Diameter Drain Manhole Riser Section	
Measurement	As measured from top of cone to the downstream invert of the pipe, complete in place, as shown on the Drawings
Payment	Unit price per vertical foot
Schedule of Payment	Monthly based on Work progress: 90% upon installation, 10% upon acceptance of manhole following receipt of positive test results and construction of invert as approved by the Engineer.
Includes labor, tools, equipment, dust controls, removal and disposal of existing storm drain structures, furnishing and installing precast concrete manhole riser and top sections of varying height; pavement cutting, removal and disposal of pavement, clearing and grubbing, excavation, bedding, shoring/bracing and wood sheeting left in place, backfill and compaction, shoring and bracing; interior drop connections, connection to existing sewer or drain with new pipe if applicable, supports, stainless steel pipe supports and anchors, damp proofing, flexible boots, butyl sealants, concrete encasement, link seals, hydraulic cement, coring, manhole rungs, testing, bricking and bulkheading of existing pipe where noted on Drawings, landscape restoration, loam and seed, resetting of curbs; and all other appurtenances contained within the manhole riser and top sections as shown on the Drawings. For trenches in excess of 20-feet, contractor is responsible for providing geotechnical engineer certified trench shoring per OSHA. Excludes manhole base in Pay Item D-9~~13.~~	

ITEM D-22: Furnish and Install Accessible Curb Ramps (Type A, B, C, D, E)	
Measurement	Actual number of accessible curb ramps installed
Payment	Unit price per each
Schedule of Payment	Monthly based on quantity installed, tested, and approved by the Engineer
Includes labor, tools, material and equipment required to furnish and install all components associated with new accessible curb ramps from the limits of the ramp tie-in to the adjacent surface(s) in accordance with the Construction Details, including, but not limited to: provision of granite transition curbs, flush granite curbs, tactile warnings, saw cutting of the existing pavement where directed, curb installation, all handling, cutting curb ends square, trimming exposed and hidden faces, cleaning all sections to be set, grading and compacting and/or placement of concrete base, ramp concrete sidewalk, materials as necessary to meet and match adjacent surfaces to ensure smooth transition to proposed or pre-construction conditions, feather sidewalk grade to meet surrounding sidewalk elevation, and, provision and construction of expansion and control joints, surface finishing, and all other incidentals necessary to furnish and install concrete driveways in accordance with the Contract Documents.	

ITEM D-23: Furnish and Install Detectable Warning Panel	
Measurement	Actual number of detectable warning panels installed
Payment	Unit price per each
Schedule of Payment	Monthly based on quantity installed and approved by the Engineer
Includes labor, services, material and equipment associated with installation only of detectable warning panels in accordance with the Construction Details, with all of the components associated with new detectable warnings, saw cutting of the existing pavement, all handling, cutting curb ends square, trimming exposed and hidden faces, cleaning all sections to be set, including placement of concrete base, ramp concrete sidewalk, materials as necessary to meet and match adjacent surfaces to ensure smooth transition to proposed or pre-construction conditions, and other incidental Work, as shown on the Drawings and as specified.	

ITEM D-25: Remove and Replace Street Lights	
Measurement	Actual number of street lights replaced
Payment	Unit price per each
Schedule of Payment	Monthly based on quantity installed and approved by the Engineer
Includes labor, material, and equipment required for removing and reinstating street lights impacted by the Work or new paving. Includes removing and disconnecting the existing street light, furnishing new replacement street light, and installing the new street light. All Work shall be conducted in accordance with Section 02 41 14.	

ITEM D-26: Remove and Replace Fire Pull Box	
Measurement	Actual number of fire pull boxes replaced
Payment	Unit price per each
Schedule of Payment	Monthly based on quantity installed and approved by the Engineer
Includes labor, material, and equipment required for reinstating fire pull boxes impacted by the Work or new paving. The Contractor is responsible for installation of the grounding rod and concrete base foundation. The Contractor is to furnish a fire pull box that meets the requirements outlined in Section 02 41 14. Work excludes removing and disconnecting the existing fire pull box.	

ITEM D-27: Asbestos Pipe Removal and Disposal	
Measurement	Actual linear feet of asbestos pipe removed and disposed of at a disposal facility
Payment	Unit price per linear foot
Schedule of Payment	Monthly based on progress: 75% upon removal, 25% upon receipt of completed (signed) waste shipment record(s) from disposal facility.
Includes labor, tools, material, and equipment required to remove and dispose asbestos cement fire box lines and asbestos contaminated soils in accordance with Section 02 85 35, including but not limited to proper removal, transport, and disposal of identified asbestos-containing cement pipe and resultant asbestos-contaminated soils, asbestos abatement activities within fully enclosed negative pressure asbestos abatement work areas (glovebag), filing and payment for all notifications and permits necessary to complete the Work, and providing all temporary connections, electrical hoses, water heaters, and other equipment as required for asbestos abatement and air clearance sampling needs.	

PART 2 - PRODUCTS (not used)

PART 3 - EXECUTION (not used)

END OF SECTION

This page intentionally left blank

SECTION 33 46 65

GREEN STORMWATER INFRASTRUCTURE INFILTRATION SYSTEMS

PART 1 – GENERAL

1.01 SUMMARY

A. Section Includes

1. Provide excavation per Section 31 00 00 and/or as shown on the Drawings, to provide adequate support for project design loads and safety from excavation sidewall collapse. Excavations shall be in accordance with the owner's and OSHA requirements.

2. Provide and install 19.68"x23.62"x1.97" storage panel system (hereafter called Storage panel) and all related products including fill materials, geotextiles, geogrids, inlet, and outlet pipe with connections per the manufacturer's installation guidelines and in accordance with this Section and applicable reference standards listed in Article 1.03.

3. Provide and construct the cover of the infiltration system comprised of Storage panels including; crushed stone backfill, structural fill cover, and pavement in accordance with the manufacturer recommendations and Sections 31 00 00 and 32 12 16.

4. The Owner has determined that specifying this proprietary structure for the Project is in the public's best interest as this structure's design was required to provide the maximum stormwater storage volume under existing site constraints. Equal manufacturers may be considered per the General Conditions.

1.02 PRICE AND PAYMENT PROCEDURES

A. Measurement and payment requirements: per Division 01 General Requirements.

1.03 REFERENCES

A. Reference Standards

1. Refer to the Drawings for applicable Reference Standards.

2. Section 03 30 00 – Cast-in-Place Concrete

3. Section 31 00 00 – Earthwork

4. Section 32 16 13 – Curbs and Gutters

5. Section 32 12 16 – Asphalt Paving

6. Section 33 42 20 – Stormwater Utility Drainage Piping

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordination, sequencing, and scheduling: per Division 01 General Requirements.

1.05 SUBMITTALS

A. Submit in accordance with Division 01 General Requirements.

B. Product data

C. Shop Drawings: stamped and signed by a professional engineer licensed in the location of the Project.

D. Certificates

1. All materials shall be manufactured in International Organization for Standardization (ISO) certified facilities.

E. Design data and submittals: stamped and signed by a professional engineer licensed in the location of the Project.

F. Sample test reports and evaluations

G. Manufacturer instructions

H. Warranty for all infiltration system components.

I. Structural Design Certificate for the precast concrete structure that the design has been prepared and is in compliance with this Section and stamped by a professional engineer licensed in the state where the Project is located.

J. Source and Field Quality Control Submittals

~~1. Leakage test reports for each structure~~

~~2.~~1. Record as-built structure information neatly in a permanently bound notebook. Provide Engineer access to records. Submit copies to Engineer on a weekly basis.

K. Closeout and maintenance material submittals: per Division 01 General Requirements.

1. Location and rim elevations of precast concrete structures

2. Locations and invert elevations of pipe penetrations

1.06 QUALITY ASSURANCE

A. Provide in accordance with Division 01 General Requirements.

B. Qualifications: per Division 01 General Requirements for installer.

C. A preconstruction meeting with the manufacturer is required.

D. Manufacturer personnel should be present during construction of the system.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Provide in accordance with Division 01 General Requirements.

1.08 SITE CONDITIONS

A. Existing conditions: per Division 01 General Requirements.

PART 2 – PRODUCTS

2.01 STORAGE PANEL UNITS

A. Storage panel - Injection molded plastic cells stacked to form a 90% void modular structure of predesigned height (custom for each project).

B. Storage panel units shall meet the following Physical & Chemical Characteristics:

PROPERTY	DESCRIPTION	STORAGE PANEL VALUE
Void Area	Volume available for water storage	90%
Surface Void Area	Percentage of exterior available for infiltration	90%
Compressive Strength	ASTM D 2412 / ASTM F 2418	240.2 psi
HS-20 Minimum Cover	Cover required to support HS-20 loads	6”
HS-25 Minimum Cover	Cover required to support HS-25 loads	6”
Maximum Cover	Maximum allowable cover depth	< 16.7 feet
Unit Weight	Weight of plastic per cubic foot of tank	7.55 lbs / cf
Service Temperature	Safe temperature range for use	-14 to 185° F

2.02 ACCESSORIES

A. Conform to the manufacturer’s specifications.

B. Provide ~~leakage tests and~~ inspections in accordance with the manufacturer’s recommendations.

2.03 SOURCE QUALITY CONTROL

A. Provide in accordance with Division 01 General Requirements.

B. Provide ~~leakage tests and~~ inspections in accordance with the manufacturer's recommendations.

1. Pre-treatment systems shall be inspected yearly, or as directed by the City and by the manufacturer. Maintain as needed using acceptable practices or following manufacturer's guidelines.

2. The system will need to be inspected by the manufacturer for accumulation of sediments at least quarterly through the first year of operation ~~and at least yearly thereafter~~. This is done by removing the cap of the port and using a measuring device long enough to reach the bottom of the R-Tank system and stiff enough to push through the loose sediments, allowing a depth measurement.

PART 3 – EXECUTION

3.01 ASSEMBLY OF STORAGE PANEL UNITS

A. Conform to the manufacturer's recommendations.

3.02 LAYOUT AND EXCAVATION

A. Stakeout limits of the system and excavate to the required grades and dimensions indicated on the Drawings, ensuring that the excavation is at least 1 foot greater than Storage panel dimensions in each direction allowing for installation of non-woven filter fabric, Storage panel modules, and free draining backfill materials. All excavations must be prepared with OSHA-compliant excavated sides and sufficient working space.

B. Protect partially completed installation against damage from other construction traffic by establishing a perimeter with high visibility construction tape, fencing, barricades, or other means until construction is complete.

C. Base of the excavation shall be uniform, level, and free of lumps or debris and soft or yielding subgrade areas. Subgrade shall be undisturbed to the maximum extent possible. Light earth-moving construction equipment should be used to minimize unwanted compaction of the subgrade below the base. A minimum 2,000 pounds per square foot bearing capacity is required.

D. Refer to Section 31 00 00 if unsuitable soils or conditions are found. If indications of the water table are observed during excavation, the Engineer shall be contacted to provide recommendations.

E. Inspection of the Subgrade: the subgrade shall be inspected and approved by the Engineer and the manufacturer prior to placement of geosynthetics and backfilling Do not start installation of the Storage panel system until unsatisfactory subgrade conditions are corrected and the subgrade conditions are accepted by the Engineer.

3.03 BASE PREPARATION

A. Place a thin layer (3" unless otherwise specified) of crushed stone over the subgrade to establish a level working platform for the Storage panel modules. Level to within ½" (+/- ¼") or as shown on the Drawings. Native subgrade soils or other materials may be used if determined to meet the manufacturer's requirements and are accepted by the owner's engineer.

B. Lightly compact the bedding material with lightweight compaction tools to minimize the disturbance to the subgrade.

C. Outline the footprint of the Storage panel system on the excavation floor using spray paint or chalk line to ensure a 12" perimeter is available around the Storage panel system for proper installation and compaction of backfill.

3.04 INSTALLATION OF THE STORAGE PANEL

A. Where a filter fabric wrap is specified on the stone base, cut strips to length and install in excavation, removing wrinkles so material lays flat. Overlap filter fabric a minimum 12" or as recommended by manufacturer. Use tape, special adhesives, sandbags or other ballast to secure overlaps. As filter fabric can be damaged by extreme heat, smoking is not permissible on/near the filter fabric or other geotextiles, and tools using a flame to tack the overlaps, such as propane torches, are prohibited.

B. Install Storage panels in layers in accordance with the design drawings. Storage panel pieces on each layer should be connected to all other pieces on that layer. Layers should stack on top of each preceding layer evenly. No vertical connection between layers is required. It is advisable to use a string line to form square corners and straight edges along the perimeter of the Storage panel system. The panels are to be oriented as per the design drawing (19.68" x 23.62") with the required depth as shown on the Drawings. Additional coordination with the Engineer and manufacturer may be required in areas where 6" of separation cannot be provided. The Contractor shall coordinate the final layout of panels with the Engineer and the manufacturer in the field to avoid conflicts.

C. Wrap the Storage panel top and sides in monofilament geotextile fabric. Cut strips of monofilament geotextile fabric so that it will cover the sides and top, encapsulating the entire system to prevent backfill entry into the system. Overlap monofilament geotextile fabric 12" or as recommended by manufacturer. Take great care to avoid damage to monofilament geotextile fabric (and, if specified, impervious liner) during placement.

D. Identify locations of inlet, outlet and any other penetrations of the geotextiles. These connections should be installed flush (butted up to the Storage panel) and the geotextile fabrics shall be cut to enable hydraulic continuity between the connections and the Storage panel units. These connections shall be secured using

pipe boots with stainless steel pipe clamps. Support pipe in trenches during backfill operations to prevent pipe from settling and damaging the geotextiles or pipe. Connecting pipes at 90 degree angles, unless otherwise specified. Ensure the end of pipe is installed snugly against Storage panel system.

E. Install Inspection and Maintenance Ports in locations noted on Drawings. Install all ports in accordance with the manufacturer's recommendations.

3.05 BACKFILLING OF THE STORAGE PANELS

A. Backfill and fill with recommended materials as follows:

1. Place crushed stone backfill materials around the perimeter in lifts with a maximum thickness of 10". Each lift shall be placed around the entire perimeter such that each lift is no more than 24" higher than the side backfill along any other location on the perimeter of the Storage panel system. No fill shall be placed over top of tanks until the side backfill has been completed.

2. Compact each lift at the specified moisture content to a minimum of 95% of the Standard Proctor Density or until no further densification is observed (for self-compacting stone materials). The side lifts must be compacted with walk-behind compaction equipment. Even when "self-compacting" backfill materials are selected, a walk-behind vibratory compactor must be used. Perform compaction testing in accordance with ASTM D698.

3. Take care to ensure that the compaction process does not allow the machinery to contact the modules due to the potential for damage to the geotextile and Storage panel units.

4. No compaction equipment is permissible to operate directly on the Storage panel modules.

5. Install top backfill as required in accordance with Drawings using an LGP skid steer or dozer (rubber tracks preferred). Lightly compact using a walk-behind trench roller. Alternately, a roller (maximum gross vehicle weight of 6 tons) may be used in static mode only.

6. Install a geogrid as shown on Drawings. Geogrid shall extend a minimum of 1.5 feet beyond the limits of the excavation wall.

7. Following placement and compaction of the initial cover, subsequent lifts of crushed stone shall be placed at the specified moisture content and compacted to a minimum of 95% of the Standard Proctor Density and shall cover the entire footprint of the Storage panel system. During placement of fill above the system, unless otherwise specified, a uniform elevation of fill

shall be maintained to within 12" across the footprint of the Storage panel system.

8. Place additional layers of geotextile and/or geogrid at elevations as specified in the design details. Each layer of geosynthetic reinforcement placed above the Storage panel system shall extend a minimum of 1.5 feet beyond the limits of the excavation wall.

9. Only low-pressure tire or track vehicles shall be operated over the Storage panel system during construction. Dump Trucks and Pans shall not be operated within the Storage panel system footprint at any time. Where necessary the heavy equipment should unload in an area adjacent to the Storage panel system and the material should be moved over the system with tracked equipment.

10. Ensure that all unrelated construction traffic is kept away from the limits of excavation until the project is complete and final surface materials are in place. No unrelated loading should be allowed over the Storage panel system until the final design section has been constructed (including pavement).

11. Place surfacing materials over the structure with care to avoid displacement of cover fill and damage to surrounding areas.

3.06 REPAIR/RESTORATION

A. Repair and replace any damaged materials. Do not install or leave in place any damaged materials. Repair or replace any defective materials in accordance with manufacturer's direction.

3.07 FIELD QUALITY CONTROL

A. Provide in accordance with Division 01 General Requirements.

B. Coordinate Site and field tests, and inspections with Engineer and manufacturer before, during, and after construction.

3.08 CLEANING

A. Conform to the manufacturer's specifications.

3.09 CLOSEOUT ACTIVITIES

A. Provide in accordance with Division 01 General Requirements.

3.10 WARRANTY PERIOD

A. All work shall be guaranteed against defected workmanship and materials for a period of 1 year after Substantial ~~c~~Completion ~~and acceptance of Work~~.

END OF SECTION

Appendix L: Notification Maps

Planned Resident Outreach Ahead of CIPP Lining Work

Stage 1: 1 Week Notice

- Contractor should provide the City with a list of pipe segments to be lined the following week as part of the weekly ROW form submittals and three-week look aheads. The City utilizes this list to perform its own 1 Week notifications to homeowners, so it is imperative that any changes to this list be communicated to the City immediately.
- For each pipe segment that is scheduled to be lined the following week, the Contractor should post CIPP notifications to all properties that abut said pipe segment as well as any properties within **500** feet of either access manhole. CIPP notifications shall include a "1 Week" Flyer and FAQ Document. Examples of the "1 Week" Flyer, FAQ Document, and list of properties to be notified are included in **Appendix L.**
- Contractor should take care to distribute notices to all residences at a property, e.g., rear apartments. Notifications shall be posted either by placing in the mailbox or affixing to a labeled door.
- Notifications shall be posted as close to 7 days in advance as possible, and no later than Friday of the week preceding the lining work.

Stage 2: 24 Hour Notice

- Any changes to the three-week look ahead should be communicated to the City immediately. The City utilizes this list to perform its own 24 Hour notifications to homeowners, so it is imperative that any changes to this list be communicated to the City immediately.
- For each pipe segment that is scheduled to be lined the following day, the Contractor should post CIPP notifications to all properties that abut said pipe segment. CIPP notifications shall include a "1 Day" Flyer and FAQ Document. Examples of the "24 Hour" Flyer, FAQ Document, and list of properties to be notified are included in **Appendix L.**
- Contractor should take care to distribute notices to all residences at a property, e.g., rear apartments. Notifications shall be posted either by placing in the mailbox or affixing to a labeled door.
- Notifications shall be posted as close to 24 in advance as possible, and no later than 12pm on the day preceding the lining work. For pipe segments scheduled for lining on a Monday, notifications should be posted on the preceding Friday.

ISSUE DATE: APRIL 4, 2024

CITY OF SOMERVILLE, MASSACHUSETTS
DEPARTMENT of ENGINEERING
KATJANA BALLANTYNE
MAYOR

Director, Infrastructure & Asset Management
RICHARD E. RAICHE

Director of Engineering
BRIAN POSTLEWAITE

Contáctenos para esta información en español. | Contate-nos para esta informação em português | Kontakte nou pou enfòmasyon sa yo an kreyòl ayisyen. | नेपालीमा जानकारीका लागि हामीलाई सम्पर्क गर्नुहोस्। somerviva@somervillema.gov | 3-1-1 (617-666-3311)

1 WEEK CONSTRUCTION NOTICE

Sewer Rehabilitations – Sewer Lining 2023

City of Somerville

On or around _____, City contractors, XXXXXXXXXXXXXXXXXXX, will rehabilitate aging sewers in your neighborhood. Crews will use a method called cured-in-place-pipe lining (CIPP lining) to provide more structurally sound pipes without excavation. Residents in the vicinity of the locations below may be impacted by this work.

Work Locations: _____

Anticipated Work Schedule: Work expected to take place between ____ a.m. and ____ p.m. Schedule is subject to change due to weather or other factors. Hours may extend to 7 p.m. on certain streets with larger diameter sewers. Residents at the above locations will receive a second notice the day prior to the start of work.

Service Interruption: During this period, properties at the above locations will have their sewer service connection completely sealed off from the city's sanitary sewer main in the street. Residents on these streets are asked to limit their use of water going down your drains to an absolute minimum, and to not use washing machines or dishwashers. Failure to follow these instructions may cause a property's discharge to backup into the property.

Odor: Plastic- or glue-like odors may be detectable in the vicinity of this work while the liner cures. These will dissipate quickly once the process is complete. If you are sensitive to odors, consider opening windows or doors to increase airflow. Odors can be minimized by pouring several gallons of water down your sinks, showers, toilets, etc. prior to the start of work.

Noise: Moderate noise from compressors, blowers, truck engines, and bypass pumps.

Traffic Impacts: On-street parking restrictions are expected on both sides of the work zone. Isolated street closures will be in effect. Onsite crews will provide detour signage and help abutters get in and out of their driveway as needed.

Stay Informed: Sign up for the City alert system to receive notifications about disruptive construction, snow emergencies, and major events planned for your neighborhood: **somervillema.gov/alerts**

Questions? To learn more about CIPP lining visit the project website at **somervillema.gov/pipelinerehab** or call the Engineering Division at 617-625-6600 ext. 5400

Contractor Information:
XXXXXXXXX
Main Office: (XXX) XXX – XXXX
Project Manager: (XXX) XXX – XXXX

ADDENDUM NO. 1

Department of Public Works Building, First Floor • 1 Franey Road • Somerville, Massachusetts 02145
(617) 625-6600, Ext. 5400 Fax: (617) 625-4454 www.ci.somerville.ma.us

ISSUE DATE: APRIL 4, 2024

CITY OF SOMERVILLE, MASSACHUSETTS
DEPARTMENT of ENGINEERING
KATJANA BALLANTYNE
MAYOR

Director, Infrastructure & Asset Management
RICHARD E. RAICHE

Director of Engineering
BRIAN POSTLEWAITE

Contáctenos para esta información en español. | Contate-nos para esta informação em português | Kontakte nou pou enfòmasyon sa yo an kreyòl ayisyen. | नेपालीमा जानकारीका लागि हामीलाई सम्पर्क गर्नुहोस्। somerviva@somervillema.gov | 3-1-1 (617-666-3311)

24 HOUR CONSTRUCTION NOTICE

Sewer Rehabilitations – Sewer Lining 2024

City of Somerville

On_____, City contractors, XXXXXXX, will rehabilitate aging sewers in your neighborhood. Crews will use a method called cured-in-place-pipe lining (CIPP lining) to provide more structurally sound pipes without excavation.

Work Locations: _____

Anticipated Work Schedule: Work expected to take place between ____ a.m. and ____ p.m. Schedule is subject to change due to weather or other factors. If work is delayed, you will receive another notice prior to the start of work. Hours may extend to 7 p.m. on certain streets with larger diameter sewers.

Service Interruption: During this period, your property's sewer service connection will be completely sealed off from the city's sanitary sewer main in the street. Please help our work by limiting the use of water going down your drains to a minimum and avoid using washing machines or dishwashers. If you must shower, leave the water in the tub until your service has been restored. Any sump pumps connected to the sewer system should be disconnected and/or discharged elsewhere to avoid possible damage to our liner or backups into your basement. Failure to follow these instructions may cause your discharge to backup into your property.

Odor: Plastic- or glue-like odors may be detectable while the liner cures. This will dissipate quickly once the process is complete. If you are sensitive to odors, consider opening windows or doors to increase airflow. In most cases, any odors can be minimized by pouring several gallons of water down your sinks, showers, toilets, etc. prior to the start of work.

Noise: Moderate noise from compressors, blowers, truck engines, and bypass pumps.

Traffic Impacts: On-street parking restrictions are expected on both sides of the work zone. Isolated street closures will be in effect. Onsite crews will provide detour signage and help abutters in and out of their driveway as needed.

Stay Informed: Sign up for the City alert system to receive notifications about disruptive construction, snow emergencies, and major events planned for your neighborhood: **somervillema.gov/alerts**

Questions? To learn more about CIPP lining, please see the attached FAQ pamphlet, visit the project website at **somervillema.gov/pipelinerehab** or call the Engineering Division at 617-625-6600 ext. 5400

Contractor Information:
XXXXXXXXXX
Main Office: (XXX) XXX-XXXX
Project Manager: (XXX) XXX-XXXX

Department of Public Works Building, First Floor • 1 Franey Road • Somerville, Massachusetts 02145
(617) 625-6600, Ext. 5400 Fax: (617) 625-4454 www.ci.somerville.ma.us

ADDENDUM NO. 1

ISSUE DATE: APRIL 4, 2024

Notes:

1. Homes that are designated as seven (7) and one (1) day notices shall be notified seven days prior to any adjacent sanitary sewer CIPP work in the area and one day prior to work directly affecting the property.

2. Contractor to distribute the 7-day notices to homes within a 100-foot radius from the access manholes for CIPP lining, including properties outside of the City of Somerville boundary.

3. This figure shows 7-day notices for the base bid superseding bid alternate notices. In the event a bid alternate is awarded, notices shall follow the 7-day and 1-day protocols described above.

LEGEND

- City Limits
- Storm Drain Manholes
- Sanitary Sewer Manholes

Storm Drain Pipes
- CIPP Liner
- Existing Storm

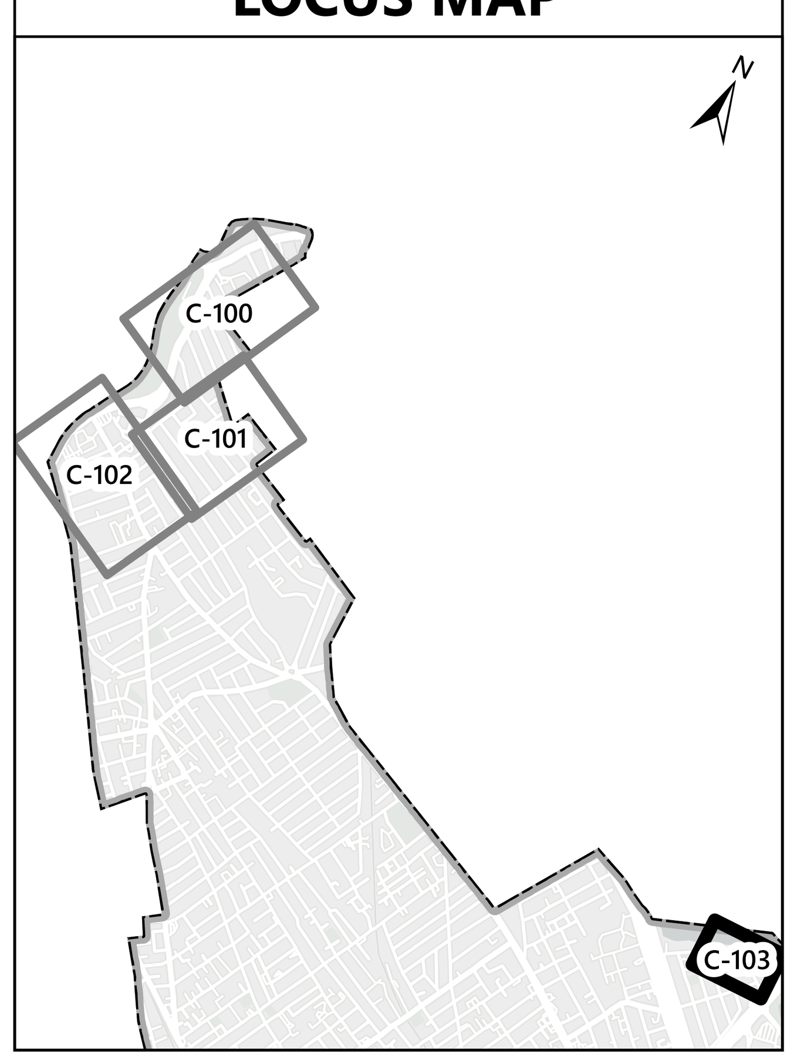
Bid Alternate Storm Drain Pipes
- CIPP Liner

Sewer Pipes
- CIPP Liner
- Existing Sewer

Base Notification
- 7 & 1 Day
- 7 Day

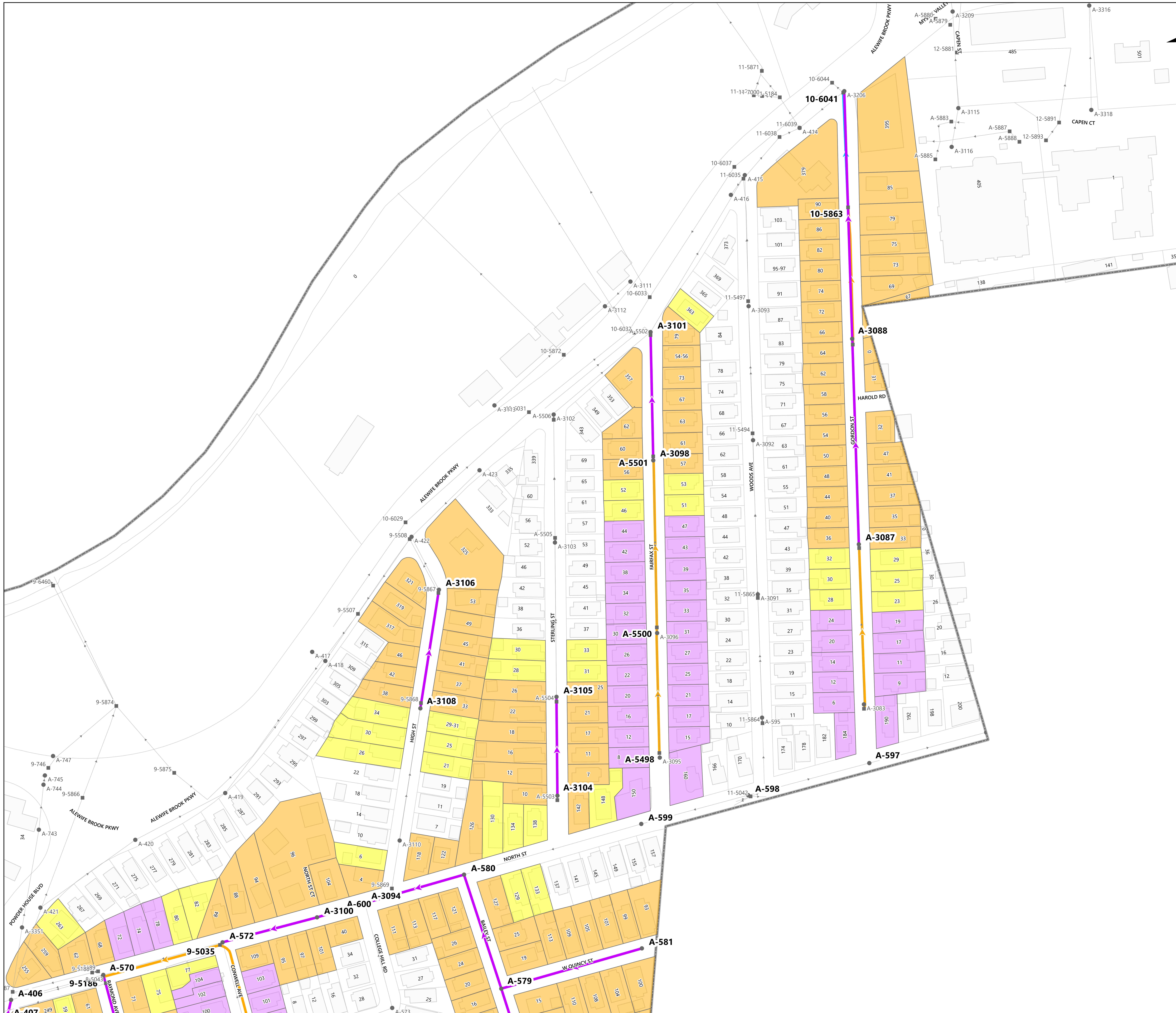
Bid Alternate Notification
- 7 & 1 Day
- 7 Day

LOCUS MAP



0 37.5 75 150 US Feet

CHECK GRAPHIC SCALE BEFORE USING



Woodard & Curran
40 Shattuck Road, Suite 110
Andover, Massachusetts 01810
866.702.6371 | www.woodardcurran.com

PE SEAL:

90% DESIGN SUBMISSION

CLIENT INFO:

CITY OF SOMERVILLE, MA
1 FRANEY ROAD
SOMERVILLE, MA 02145

WEST SOMERVILLE
SEWER & STORM
IMPROVEMENTS

REV	MM/DD/YY	DESCRIPTION

JOB NO:	0234621.04
DATE:	FEBRUARY 2024
SCALE:	AS NOTED
DESIGNED BY:	MRC
DRAWN BY:	MRC
CHECKED BY:	DCM, TP
FILENAME:	0234621.04 - CIPP Rehab Notifications

DRAWING TITLE:

SEWER & STORM CIPP NOTIFICATIONS

AREA #1

DRAWING NO:

C-100

SHEET: X OF XX

ADDENDUM NO. 1

ISSUE DATE: APRIL 4, 2024

Notes:

1. Homes that are designated as seven (7) and one (1) day notices shall be notified seven days prior to any adjacent sanitary sewer CIPP work in the area and one day prior to work directly affecting the property.

2. Contractor to distribute the 7-day notices to homes within a 100-foot radius from the access manholes for CIPP lining, including properties outside of the City of Somerville boundary.

3. This figure shows 7-day notices for the base bid superseding bid alternate notices. In the event a bid alternate is awarded, notices shall follow the 7-day and 1-day protocols described above.

LEGEND

- City Limits
- Storm Drain Manholes
- Sanitary Sewer Manholes

Storm Drain Pipes
- CIPP Liner
- Existing Storm

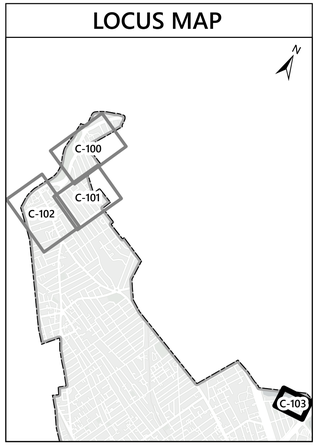
Bid Alternate Storm Drain Pipes
- CIPP Liner

Sewer Pipes
- CIPP Liner
- Existing Sewer

Base Notification
- 7 & 1 Day
- 7 Day

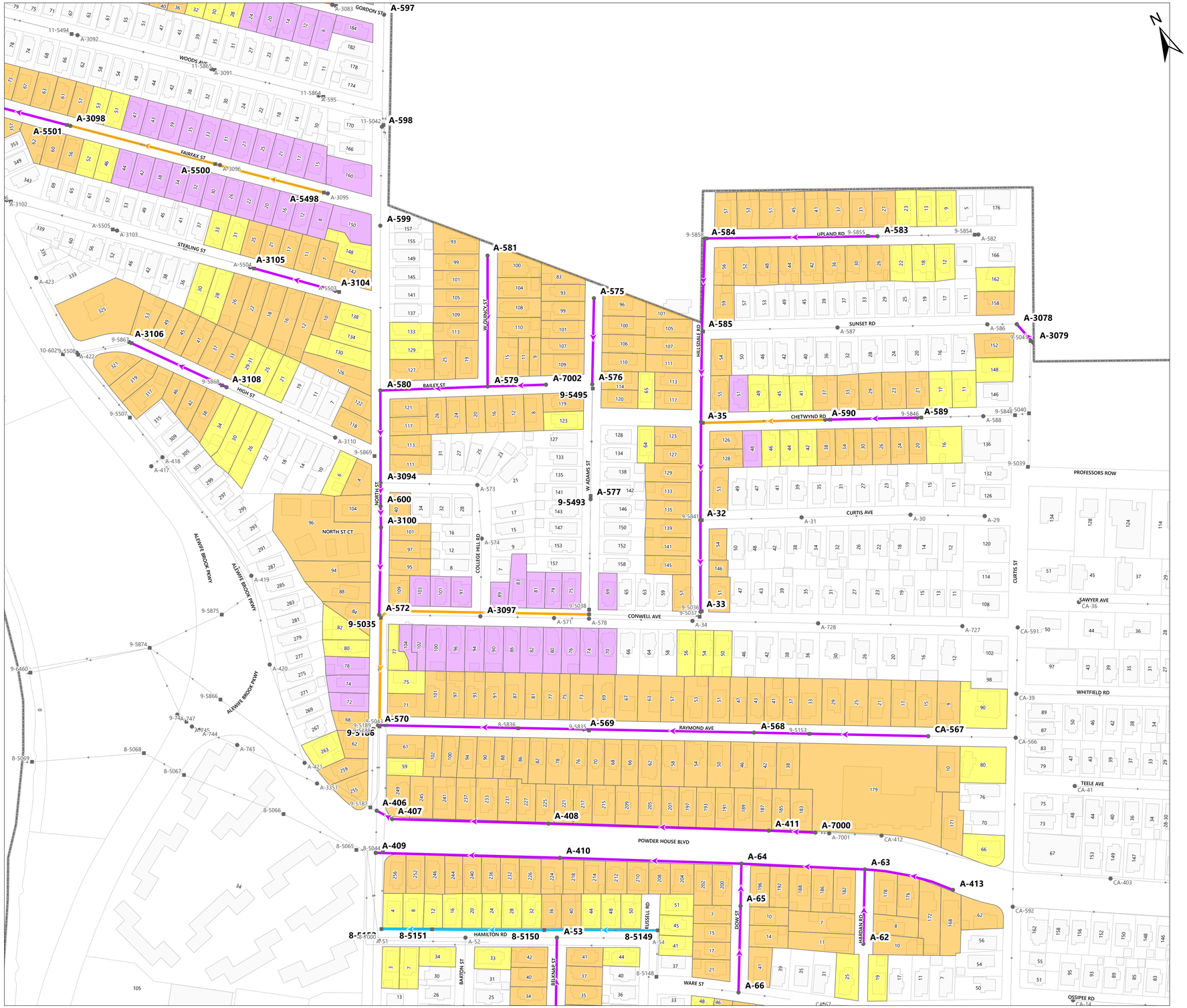
Bid Alternate Notification
- 7 & 1 Day
- 7 Day

LOCUS MAP



0 50 100 200 US Feet

CHECK GRAPHIC SCALE BEFORE USING



Woodard & Curran
40 Shattuck Road, Suite 110
Andover, Massachusetts 01810
866.702.6371 | www.woodardcurran.com

PE SEAL:

90% DESIGN SUBMISSION

CLIENT INFO:

CITY OF SOMERVILLE, MA
1 FRANEY ROAD
SOMERVILLE, MA 02145

WEST SOMERVILLE SEWER & STORM IMPROVEMENTS

REV	MM/DD/YY	DESCRIPTION

JOB NO:	0234621.04
DATE:	JANUARY 2024
SCALE:	AS NOTED
DESIGNED BY:	MRC
DRAWN BY:	MRC
CHECKED BY:	DCM, TP
FILENAME: 0234621.04 - CIPP Rehab Notifications	

DRAWING TITLE:

SEWER & STORM CIPP NOTIFICATIONS

AREA #2

DRAWING NO: **C-101**

SHEET: X OF XX

ADDENDUM NO. 1

ISSUE DATE: APRIL 4, 2024

Notes:

1. Homes that are designated as seven (7) and one (1) day notices shall be notified seven days prior to any adjacent sanitary sewer CIPP work in the area and one day prior to work directly affecting the property.

2. Contractor to distribute the 7-day notices to homes within a 100-foot radius from the access manholes for CIPP lining, including properties outside of the City of Somerville boundary.

3. This figure shows 7-day notices for the base bid superseding bid alternate notices. In the event a bid alternate is awarded, notices shall follow the 7-day and 1-day protocols described above.

LEGEND

- City Limits
- Storm Drain Manholes
- Sanitary Sewer Manholes

Storm Drain Pipes
- CIPP Liner
- Existing Storm

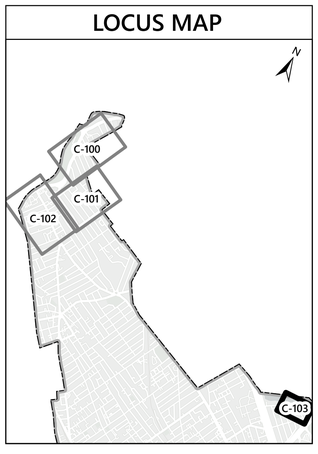
Bid Alternate Storm Drain Pipes
- CIPP Liner

Sewer Pipes
- CIPP Liner
- Existing Sewer

Base Notification
- 7 & 1 Day
- 7 Day

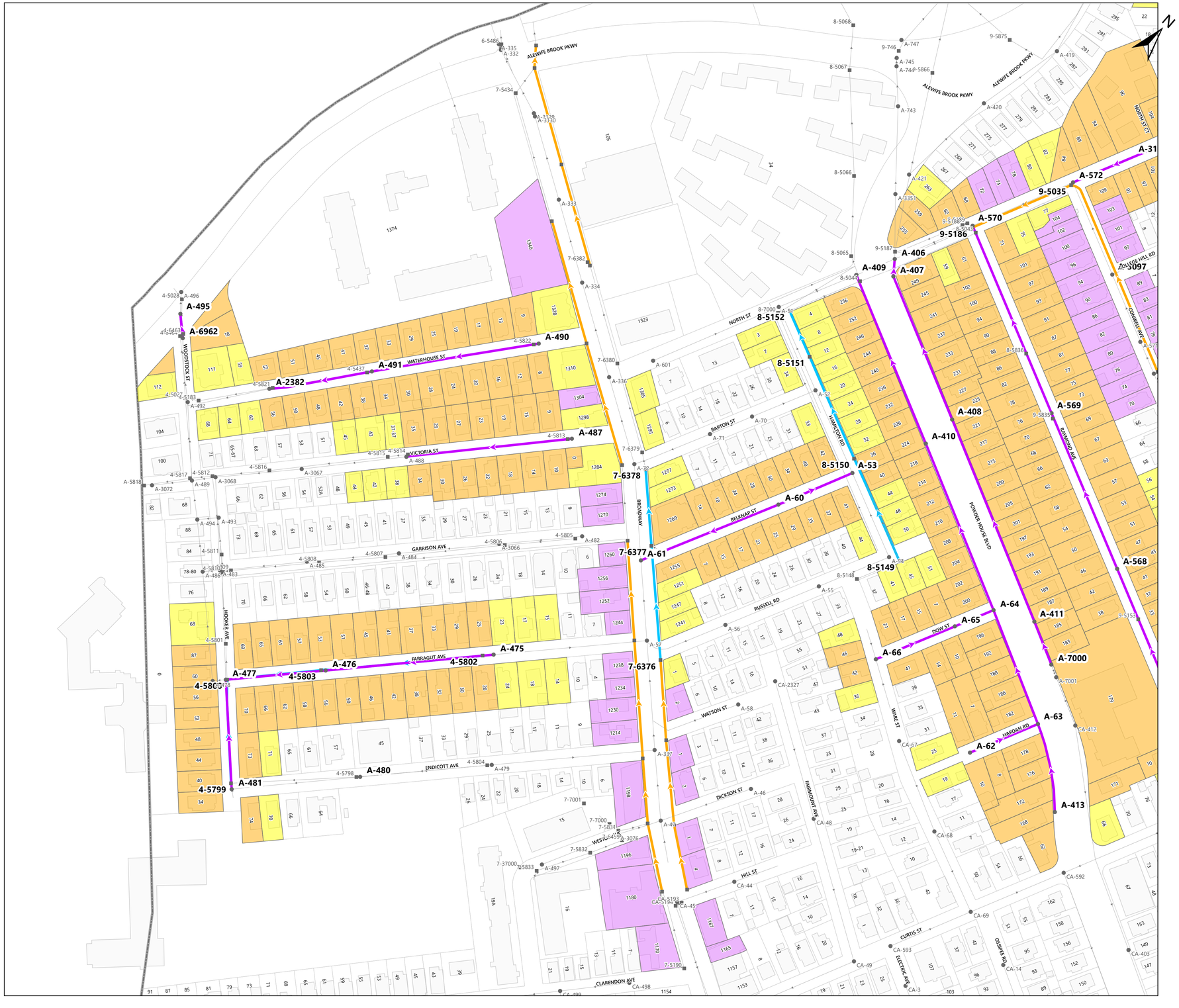
Bid Alternate Notification
- 7 & 1 Day
- 7 Day

LOCUS MAP



0 50 100 200 US Feet

CHECK GRAPHIC SCALE BEFORE USING



Woodard & Curran
40 Shattuck Road, Suite 110
Andover, Massachusetts 01810
866.702.6371 | www.woodardcurran.com

PE SEAL:

90% DESIGN SUBMISSION

CLIENT INFO:

CITY OF SOMERVILLE, MA
1 FRANEY ROAD
SOMERVILLE, MA 02145

WEST SOMERVILLE
SEWER & STORM
IMPROVEMENTS

REV	MM/DD/YY	DESCRIPTION

JOB NO:	0234621.04
DATE:	FEBRUARY 2024
SCALE:	AS NOTED
DESIGNED BY:	MRC
DRAWN BY:	MRC
CHECKED BY:	DCM, TP
FILENAME: 0234621.04 - CIPP Rehab Notifications	

DRAWING TITLE:

SEWER & STORM CIPP NOTIFICATIONS

AREA #3

DRAWING NO: C-102

SHEET: X OF XX

ADDENDUM NO. 1

ISSUE DATE: APRIL 4, 2024

Notes:

1. Homes that are designated as seven (7) and one (1) day notices shall be notified seven days prior to any adjacent sanitary sewer CIPP work in the area and one day prior to work directly affecting the property.

2. Contractor to distribute the 7-day notices to homes within a 100-foot radius from the access manholes for CIPP lining, including properties outside of the City of Somerville boundary.

LEGEND

- City Limits
- Storm Drain Manholes
- Sanitary Sewer Manholes

Storm Drain Pipes
- CIPP Liner
- Existing Storm

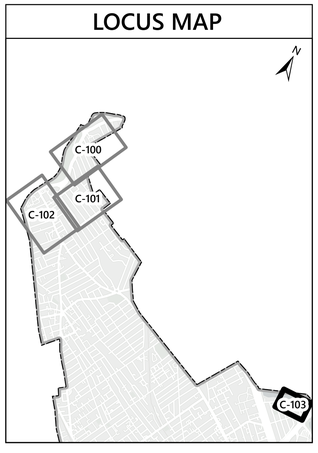
Bid Alternate Storm Drain Pipes
- CIPP Liner

Sewer Pipes
- CIPP Liner
- Existing Sewer

Base Notification
- 7 & 1 Day
- 7 Day

Bid Alternate Notification
- 7 & 1 Day
- 7 Day

LOCUS MAP



0 10 20 40 60 US Feet

CHECK GRAPHIC SCALE BEFORE USING

Woodard & Curran
40 Shattuck Road, Suite 110
Andover, Massachusetts 01810
866.702.6371 | www.woodardcurran.com

MUNICIPAL FREEDOM GIVES NATIONAL STRENGTH
SOMERVILLE, MASS.

PE SEAL:

90% DESIGN SUBMISSION

CLIENT INFO:

CITY OF SOMERVILLE, MA
1 FRANEY ROAD
SOMERVILLE, MA 02145

WEST SOMERVILLE
SEWER & STORM
IMPROVEMENTS

REV	MM/DD/YY	DESCRIPTION

JOB NO:	0234621.04
DATE:	FEBRUARY 2024
SCALE:	AS NOTED
DESIGNED BY:	MRC
DRAWN BY:	MRC
CHECKED BY:	DCM, TP

FILENAME: 0234621.04 - CIPP Rehab Notifications

DRAWING TITLE:

SEWER & STORM CIPP NOTIFICATIONS

AREA #4

DRAWING NO: **C-103**

SHEET: X OF XX

ADDENDUM NO. 1

ISSUE DATE: APRIL 4, 2024

The City of Somerville
Engineering Division
Infrastructure & Asset Management

Cured-in-Place-Pipe Lining FAQ

What is cured-in-place-pipe lining?

Cured-in-place-pipe (CIPP) lining, commonly known as "sewer lining," is a method of sewer repair. It is a cost-effective and non-invasive process that involves inserting a soft plastic liner inside a pipe, then curing (hardening) the liner with pressurized steam. The liner forms a smooth surface inside the existing pipe, restoring it to near-new condition.

Why is this work being done?

Many of Somerville's pipes are nearly a century old and need to be repaired due to their age, deteriorating functionality, or other problems. CIPP lining improves the structural integrity of existing sewer pipes and increases flow capacity. The lined pipe then becomes more resistant to holes, breaks, and joint failures. Sewer lining requires little or no excavation and significantly less time to complete than other sewer repair methods.

Does CIPP lining produce an odor?

During pipe rehabilitation, a plastic- or glue-like odor may be detectable. The CIPP process uses a styrene monomer resin to rehabilitate the pipes. Styrene is a chemical used to make many types of plastic and resins. Styrene can be detected by its smell even when very small amounts are present. This smell will dissipate quickly once the process is complete.

ADDENDUM NO. 1

The City of Somerville
Engineering Division
Infrastructure & Asset Management

Are there any health hazards associated with CIPP lining?

Since its inception approximately 40 years ago, CIPP lining is rapidly becoming an industry standard for pipe rehabilitation. Styrene exposure levels from the CIPP process are significantly below safe-exposure standards established by the US Occupational Safety and Health Administration (OSHA). The Massachusetts Water Resources Authority (MWRA) also has regulations and requirements for all CIPP projects. The City of Somerville adheres to regulatory laws to provide a safe environment for the public.

What else should I expect during CIPP construction?

Moderate noise from compressors, blowers, truck engines, and bypass pumps should be expected. On-street parking restrictions expected on both sides of the work zone. Lane shifts and isolated lane closures will be in effect.

Additional Questions and Support

If you have additional questions, please call the Engineering Division at 617-625-6600 ext. 5400 or email construction@somervillema.gov.

For any translation requests, contact 311(617-666-3311) or SomerViva@somervillema.gov.

Persons with disabilities who need auxiliary aids or reasonable modifications should please contact Adrienne Pomeroy in advance at 617-625-6600 x 2059 or ADA@somervillema.gov.

Appendix M: Traffic Management Plan Guidelines

ISSUE DATE - APRIL 4, 2024

CITY OF SOMERVILLE, MASSACHUSETTS
MAYOR KATJANA BALLANTYNE
DEPARTMENT of INFRASTRUCTURE & ASSET MANAGEMENT
ENGINEERING DIVISION

RICHARD E. RAICHE, PE, PMP, MCPPO
DIRECTOR OF INFRASTRUCTURE & ASSET MANAGEMENT

BRIAN C. POSTLEWAITE, PE
DIRECTOR OF ENGINEERING

Traffic Management Plan Guidelines

Construction activity that impacts the existing public street system must be controlled to protect the safety of the construction workers and all modes of the traveling public. Projects are required to submit a satisfactory Traffic Management Plan (TMP) prior to traffic plan approval for building, demolition, street occupancy, or site construction permits. Use of public parking spaces or the blockage of any portion of sidewalk or street for the purpose of construction activity requires a street occupancy permit.

Traffic Management Plans (TMPs) shall provide for the safe passage of the public through or along the construction work zone. On a case-by-case basis, applicants may be allowed to close a street or detour a mode of traffic when absolutely necessary for safety. TMPs shall conform with the latest edition of the Manual on Uniform Traffic Control Devices (MUTCD). In addition:

- Traffic control signs shall not be placed where they are an obstruction to pedestrians, bicycles, or motor vehicles. Recommend placing signs in the furniture zone, curb extensions, or parking lanes.
- Barrier systems utilized to separate the construction activity from the public right-of-way shall not inhibit sight distances, particularly for visibility of pedestrians and bicyclists. Recommend a maximum height of 48" from roadway grade.
- ADA compliance shall be maintained.
- Police details may be required.

All existing modes of travel in work zone area shall be accommodated if impacted by the activity. The safe passage of pedestrians, bicyclists, transit providers, and motorists are of equal importance when planning out the work zone; no pre-existing travel mode may be eliminated without the express approval of the Somerville Engineering Division. The TMP should also address on-street parking impacts, including deliveries and parking for adjoining businesses and property owners, and coordination with other on-going or future construction or utility projects in the vicinity.

Project Description. Provide a brief summary explaining your project. What is the scope of your work? Are you blocking any portion of the street or sidewalk? For how long? Where will you be parking project vehicles? What is the duration of your project?

Traffic Management Plan. Provide a dimensioned drawing showing the footprint of the proposed project site and the temporary traffic control measures. Consult the TMP Checklist below to confirm basic TMP requirements are met. Attach the TMP to the corresponding permit application in the CitizenServe Portal.

Department of Public Works Building, First Floor • 1 Franey Road • Somerville, Massachusetts 02145
(617) 625-6600, Ext. 5400 Fax: (617) 625-4454 www.somervillema.gov

ADDENDUM NO.1

ISSUE DATE - APRIL 4, 2024

CITY OF SOMERVILLE, MASSACHUSETTS
MAYOR KATJANA BALLANTYNE
DEPARTMENT of INFRASTRUCTURE & ASSET MANAGEMENT
ENGINEERING DIVISION

RICHARD E. RAICHE, PE, PMP, MCPPO
DIRECTOR OF INFRASTRUCTURE & ASSET MANAGEMENT

BRIAN C. POSTLEWAITE, PE
DIRECTOR OF ENGINEERING

Traffic Management Plan Checklist:

Creating a Traffic Management Plan (TMP) is an iterative and collaborative process. TMPs describe pedestrian, biking, traffic, and parking management techniques and illustrate the placement of traffic control devices. The below checklist was created to help the designer incorporate the required traffic plan elements into the proposed TMP, it does not need to be included with the TMP submission in Citizen Serve.

- ☐ Show the location (address, intersection) and dimensions of proposed project site.
- ☐ Label streets within plan limits and provide a north arrow.
- ☐ Indicate duration of work and schedule of work hours.
- ☐ Show existing conditions in the vicinity of the work area, including:
  - ☐ Curbs, sidewalks, driveways, and intersections.
  - ☐ Traffic signals and signs.
  - ☐ Pavement markings.
  - ☐ Parking restriction zones, signs, and meters.
- ☐ Show proposed temporary pavement markings, if applicable.
- ☐ Show direction of travel and proposed lane widths.
- ☐ Indicate staging area and materials storage area, as appropriate.
- ☐ Show advanced warning area, transition area, buffer area, active work zone, and termination area, and where the warning signs shall be located. Include dimensions for sign spacing.
- ☐ Indicate location of construction signs, barricades, delineators, and other MUTCD approved traffic control devices.
- ☐ Indicate the proposed size of temporary signs.

Police Detail. If the TMP requires a police detail, information can be obtained from the Detail Office at the Somerville Police Department at (617) 625-1600.

Temporary No Parking Signage or Meter Bagging. Email Traffic@somervillema.gov or call (617) 625-6600 if you need No Parking signage or bags to cover street meters. Keep in mind signage must be in place 48 hours before work begins and 311 must be notified when the signs are installed.

Parking Solutions. Did you know Somerville offers parking permits for contractors, commercial vehicles, realtors, rental cars and more? Visit Somerville's Parking Department website for more details: https://www.somervillema.gov/parking.

Questions? For questions regarding TMPs, email Jessica Bellow at jbellow@somervillema.gov.

Department of Public Works Building, First Floor • 1 Franey Road • Somerville, Massachusetts 02145
(617) 625-6600, Ext. 5400 Fax: (617) 625-4454 www.somervillema.gov

ADDENDUM NO.1

Appendix O: Irregular Shaped Pipes

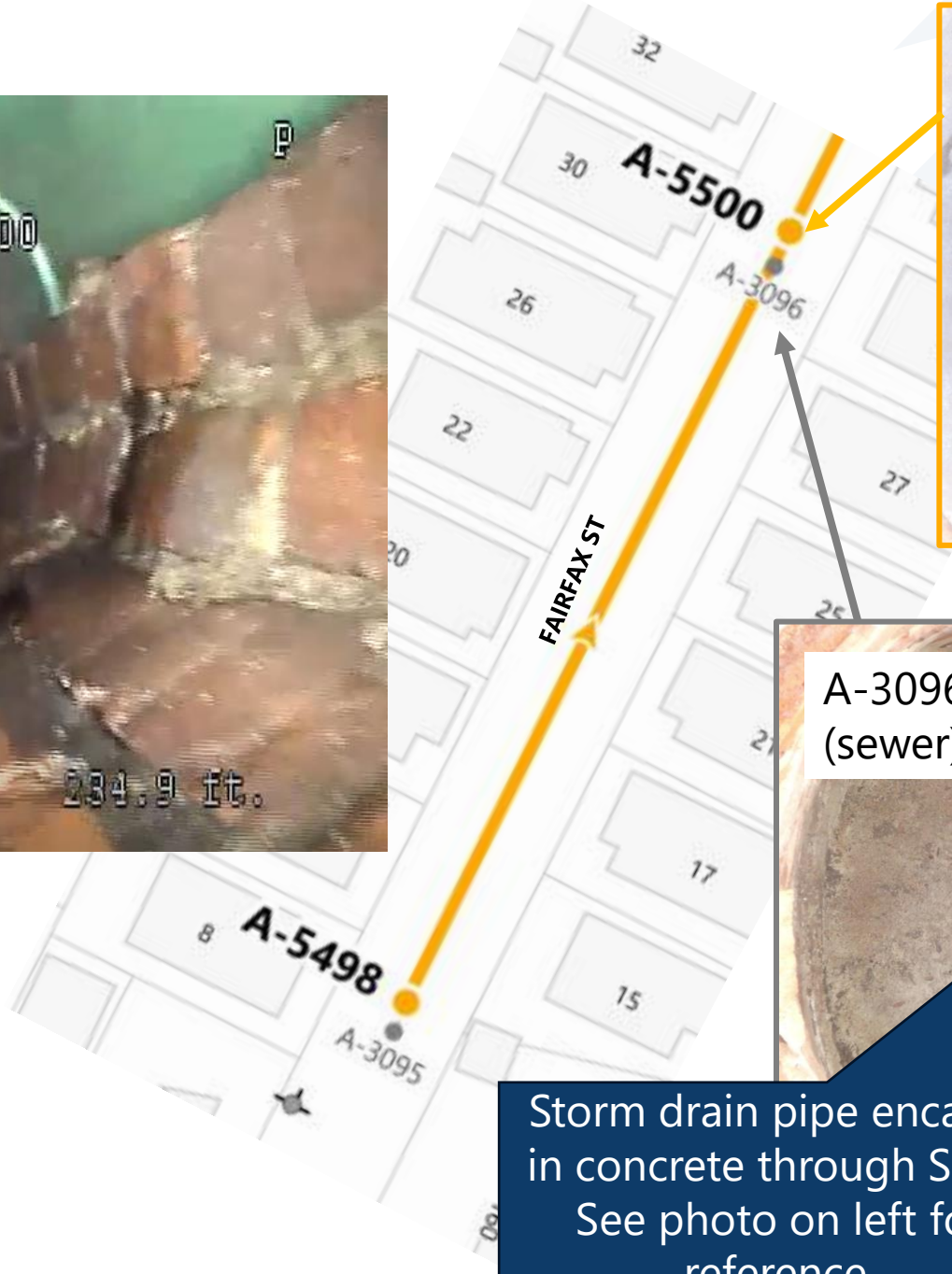
ISSUE DATE – April 4, 2024

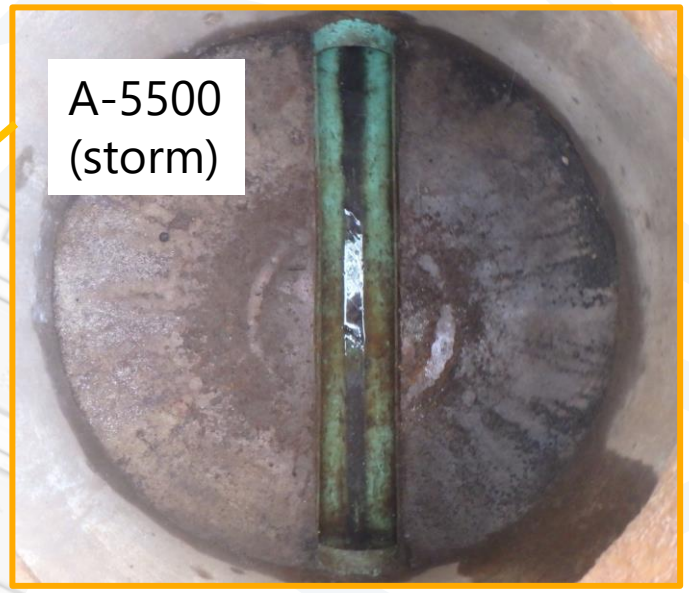
Woodard & Curran

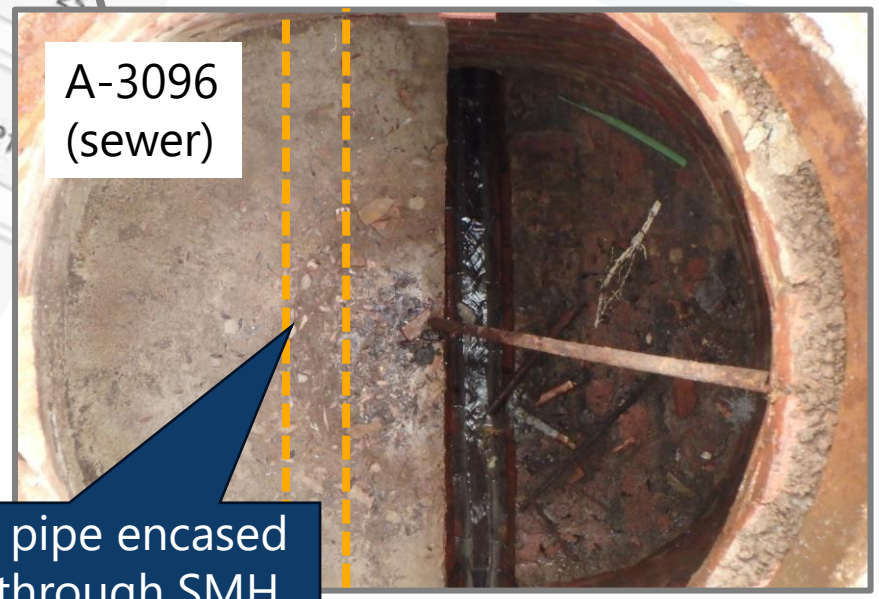
ADDENDUM NO. 1

Irregular Shaped Pipes

ISSUE DATE – April 4, 2024





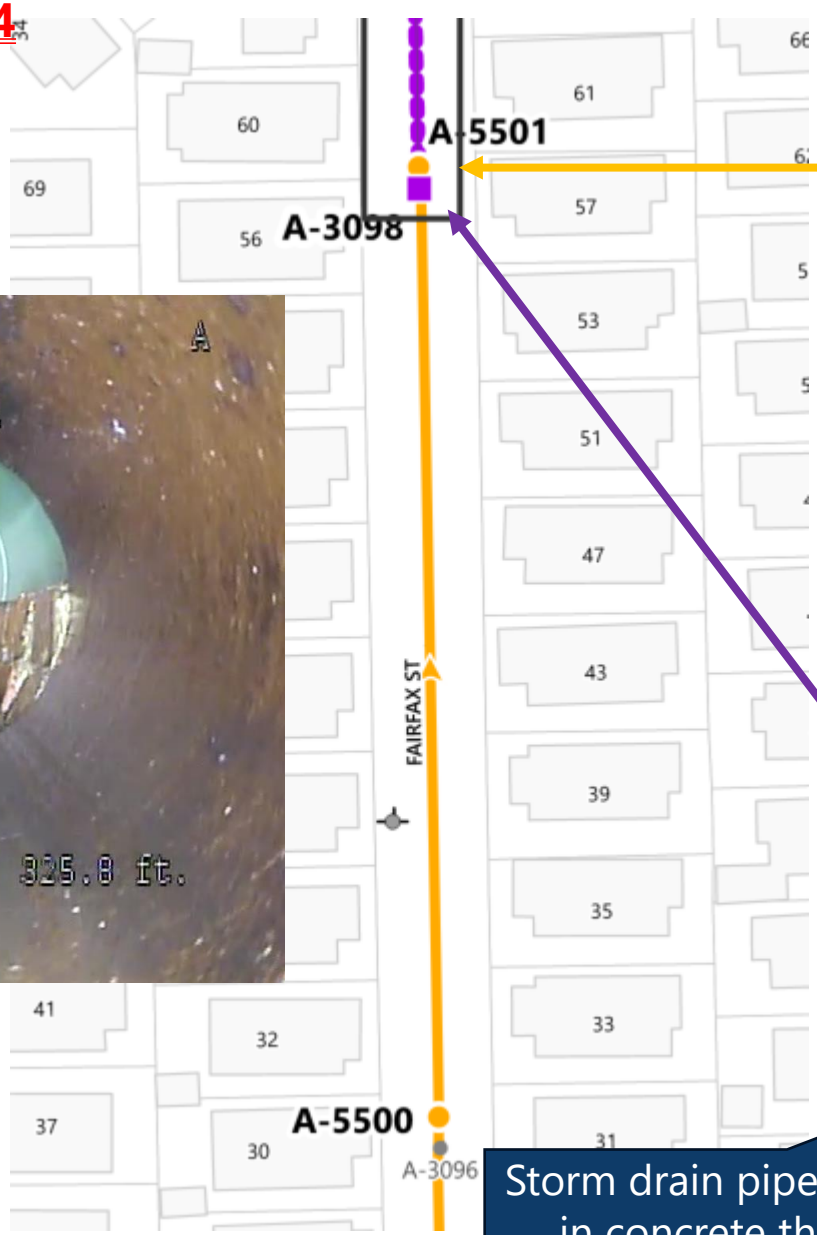


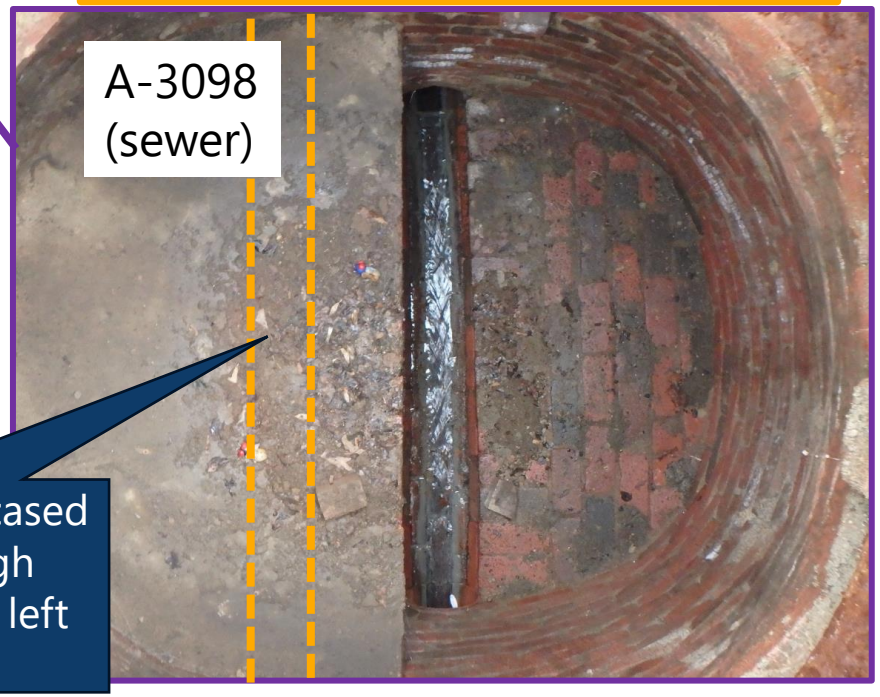
Storm drain pipe encased in concrete through SMH. See photo on left for reference.

ADDENDUM NO. 1

Woodard & Curran

ISSUE DATE – April 4, 2024





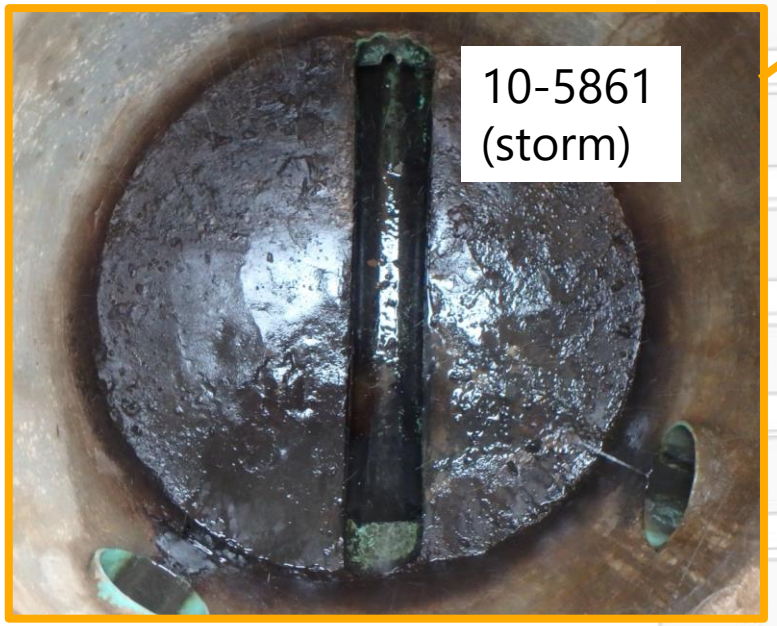
Storm drain pipe encased in concrete through SMH. See photo on left for reference.

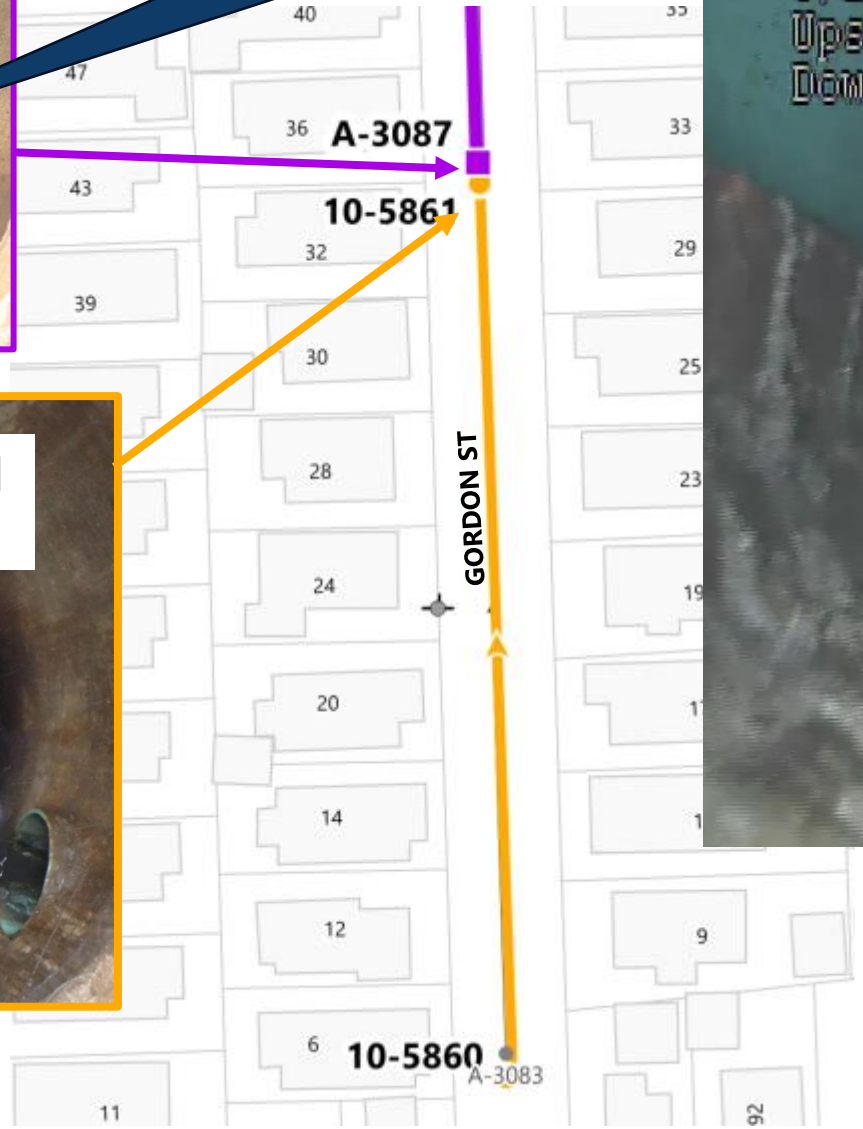
ADDENDUM NO. 1

Woodard & Curran

ISSUE DATE – April 4, 2024

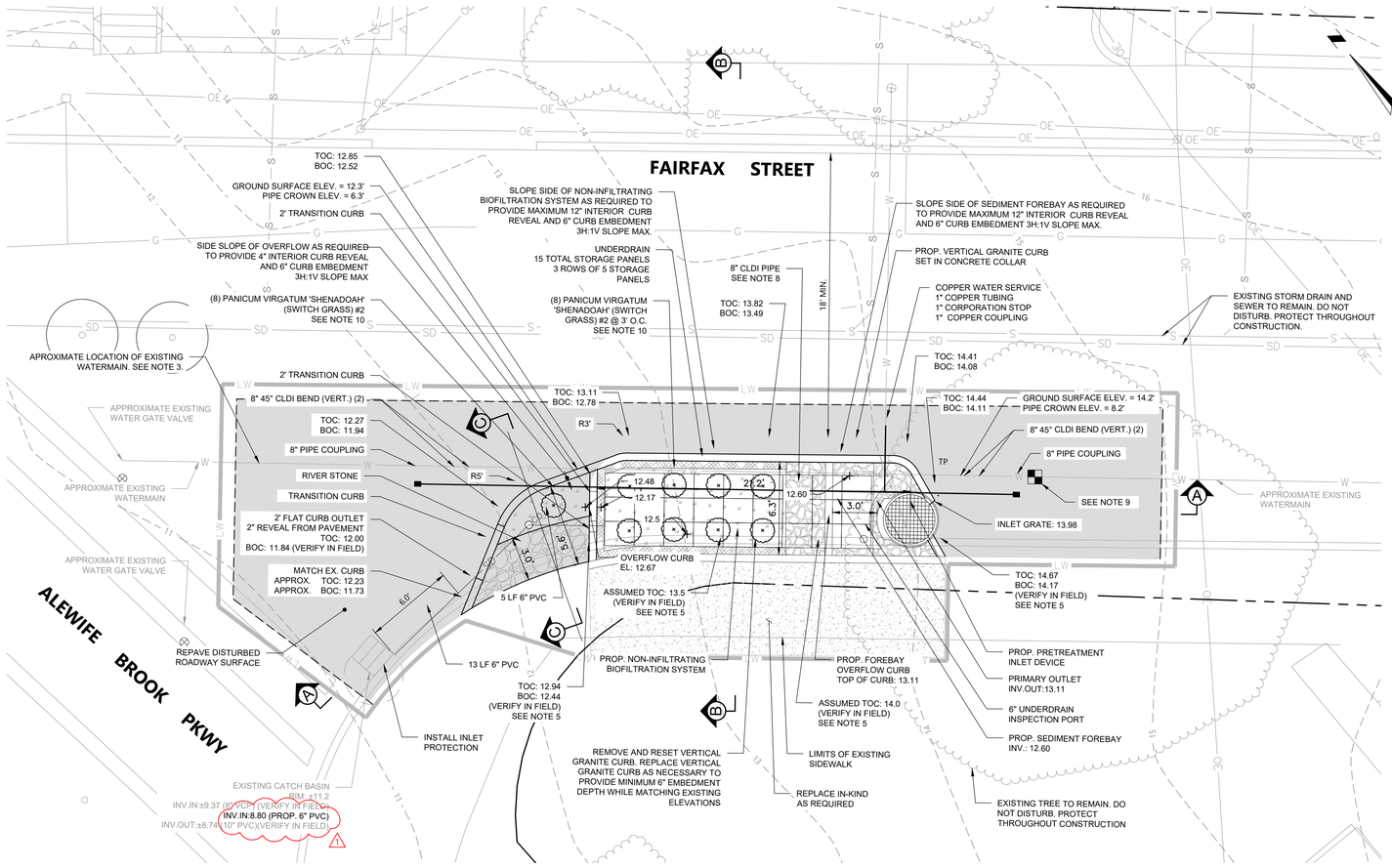
Storm drain pipe encased in concrete through SMH. See photo on right for reference.





ADDENDUM NO. 1

Woodard & Curran



PLAN

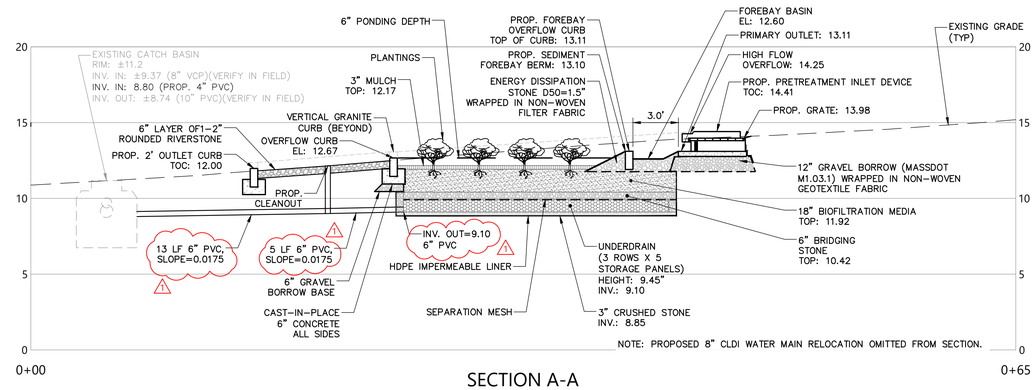
SCALE: 1" = 5'

5' 0 5' 10'

BAR SCALE
1" = 5'
CHECK GRAPHIC SCALE BEFORE USING

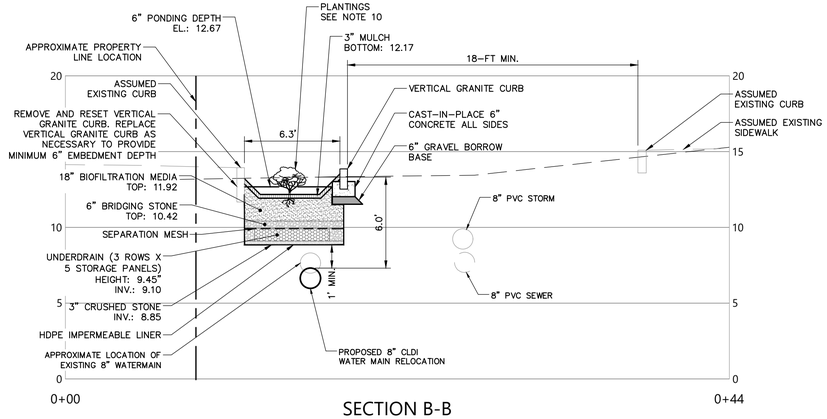
SECTION C-C

HORIZONTAL SCALE: 1" = 5'
VERTICAL SCALE: 1" = 5'



SECTION A-A

HORIZONTAL SCALE: 1" = 5'
VERTICAL SCALE: 1" = 5'



SECTION B-B

HORIZONTAL SCALE: 1" = 5'
VERTICAL SCALE: 1" = 5'

NOTES:

1. CONTRACTOR SHALL PROVIDE STORM DRAIN AND ALL ASSOCIATED CONNECTION MATERIALS PER SPECIFICATIONS UNLESS OTHERWISE NOTED ON DRAWINGS.
2. CONTRACTOR TO SUPPORT EXISTING UTILITIES IN PLACE. CONTRACTOR TO COORDINATE WITH UTILITY COMPANIES PRIOR TO CONSTRUCTION. NOTIFY RESPECTIVE UTILITIES IF ANY CONDUITS OR STRUCTURES ARE IMPACTED.
3. THE CONTRACTOR SHALL FIELD VERIFY INVERTS, PIPE SIZES, AND PIPE MATERIAL PRIOR TO ORDERING THE CONSTRUCTION MATERIALS.
4. CONTRACTOR SHALL DESIGN AND PROVIDE SUPPORT OF EXCAVATION AS REQUIRED TO CONSTRUCT NON–INFILTRATING BIO–FILTRATION WITHOUT DAMAGING PRIVATE PROPERTY AND EXISTING SUBSURFACE UTILITIES. CONTRACTOR SHALL PROVIDE SUPPORT OF EXCAVATION, SHOP DRAWINGS AND CALCULATIONS STAMPED BY A LICENSED ENGINEER IN THE STATE OF MASSACHUSETTS FOR REVIEW AND APPROVAL BY THE ENGINEER PRIOR TO EFFECTIVE CONSTRUCTION WORK AND PROCUREMENT OF MATERIALS.
5. ELEVATIONS OF EXISTING PAVEMENT, SIDEWALK, AND CURBING SHOWN ARE APPROXIMATE. CONTRACTOR SHALL VERIFY EXISTING PAVEMENT, CURB, AND SIDEWALK ELEVATIONS AT THE INTERFACE OF THE NON–INFILTRATING BIOFILTRATION SYSTEM AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES FROM THE ASSUMED ELEVATIONS SHOWN HEREIN PRIOR TO CONSTRUCTION AND PROCUREMENT OF MATERIALS.
6. CONTRACTOR SHALL INSTALL INLET PROTECTION WITHIN THE EXISTING CATCH BASIN TO REMAIN PRIOR TO CONSTRUCTION. SEDIMENT AND EROSION CONTROLS SHALL REMAIN IN PLACE UNTIL FINAL STABILIZATION HAS BEEN ACHIEVED AND THE CONTRACTOR HAS RECEIVED APPROVAL BY THE CITY.
7. CONTRACTOR SHALL PROVIDE TREE PROTECTION FOR ANY TREE IN PROXIMITY TO THE WORK OR EQUIPMENT. THE CONTRACTOR SHALL PRESENT THEIR TREE PROTECTION PLAN TO THE CITY'S ARBORIST FOR APPROVAL. THE CONTRACTOR SHALL NOT TRIM OR REMOVE ANY TREES WITHIN THE PROJECT AREA UNLESS APPROVED BY THE CITY'S ARBORIST.
8. WATER MAIN WORK MUST BE COMPLETED PRIOR TO GREEN STORM WATER INFRASTRUCTURE SHOWN. CONTRACTOR SHALL COMPLETE ALL WATER MAIN WORK SHOWN IN A SINGLE, 8–HOUR SHUTDOWN. TEST PIT, PRE–EXCAVATE AND SHORE AS REQUIRED TO COMPLETE WORK SHOWN IN 8 HOURS. COORDINATE WITH SOMERVILLE WATER DEPARTMENT FOR SHUTDOWN AT LEAST 2 WEEKS PRIOR TO PLANNED WORK. COMPLETE WORK IN ACCORDANCE WITH AWWA C651–14 SECTION 4.11. FINAL DEPTH OF INSTALLATION TO BE DETERMINED AFTER SITE ELEVATIONS DETAILED IN NOTE 5 ARE CONFIRMED.
9. TEST PIT SHALL BE CONDUCTED AT LOCATIONS SHOWN ON THE DRAWINGS AND AS DIRECTED BY THE ENGINEER TO CONFIRM ELEVATION OF EXISTING WATER MAIN, INCIDENTAL TO THE WATER MAIN INSTALLATION WORK. THE CONTRACTOR MAY CONDUCT ADDITIONAL TEST PITS TO VERIFY EXISTING CONDITIONS AT NO ADDITIONAL COST TO THE OWNER.
10. PLANTINGS TO BE FURNISHED AS IDENTIFIED ON THE DRAWINGS OR EQUAL APPROVED BY SOMERVILLE URBAN FORESTRY DIVISION AND BIOFILTRATION SYSTEM MANUFACTURER. PLANTINGS TO BE INSTALLED PER MASSDOT SECTION 771. CONTRACTOR SHALL SUBMIT PRODUCT SUBMITTALS FOR REVIEW AND APPROVAL BY THE ENGINEER AND THE CITY OF SOMERVILLE PRIOR TO PROCUREMENT OF MATERIALS OR EFFECTIVE CONSTRUCTION WORK.

RESTORATION NOTES:

1. CONTRACTOR TO PROVIDE TEMPORARY TRENCH PAVING PER DETAILS AND PAVING SCHEDULE UPON COMPLETION OF OPEN CUT WORK.
2. EXISTING PAVEMENT MARKINGS SHOWN ARE APPROXIMATE AND SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION. REPLACE ALL PAVEMENT MARKINGS IN LIMIT OF WORK PER SPECIFICATIONS FOLLOWING COMPLETION OF FINAL PAVING.
3. ALL SURFACE FEATURES DAMAGED DURING PERFORMANCE OF WORK SHALL BE RESTORED BY CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
4. ANY TRAFFIC SIGNS WITHIN THE AREA OF CONSTRUCTION IMPACTED BY THE PROPOSED WORK SHALL BE REMOVED AND RESET IN–KIND.

Woodard & Curran
40 Shattuck Road, Suite 110
Andover, Massachusetts 01810
866.702.6371 | www.woodardcurran.com

PE SEAL:

COMMONWEALTH OF MASSACHUSETTS
DAVID C. MOERING
CIVIL
No. 52841
REGISTERED PROFESSIONAL ENGINEER

ISSUED FOR BID

CLIENT INFO:

CITY OF SOMERVILLE, MA
1 FRANEY ROAD
SOMERVILLE, MA 02145

SEWER AND DRAINAGE SYSTEM IMPROVEMENTS DESIGN
WEST SOMERVILLE

REV	MM/DD/YY	DESCRIPTION
01	04/04/24	ADDENDUM 1

JOB NO:	0234621.04
DATE:	MARCH 2024
SCALE:	AS NOTED
DESIGNED BY:	RA
DRAWN BY:	RA
CHECKED BY:	DCM
FILENAME:	0234621.04 C-30X-A.dwg

DRAWING TITLE:

FAIRFAX GREEN STORMWATER INFRASTRUCTURE BID ALTERNATE B (IF AWARDED BY OWNER)

DRAWING NO:

C-301

SHEET: 23 OF 34

40 Shattuck Road | Suite 110
Andover, Massachusetts 01810
www.woodardcurran.com

T 800.426.4262
T 978.557.8150
F 978.557.7948

MEETING AGENDA

THIS MEETING: Construction for Sewer Rehabilitation – West Somerville Sewer and Stormwater Improvements

DATE/TIME: Wednesday, March 27, 2023, 2:00 PM

LOCATION: Virtual Zoom Meeting

PROJECT NAME: West Somerville Sewer and Stormwater Improvements

CLIENT: City of Somerville

Agenda

1. Introductions/Opening
2. Specification Highlights, Instructions, and Clarifications
3. Schedule
4. Questions
5. Meeting Conclusion

Introductions/Opening

- *OWNER:* City of Somerville.
- *ENGINEER:* Woodard & Curran.
- This pre-bid meeting is not mandatory; but please enter your name in the electronic sign-in form and fill in all information requested.
- Any questions that arise during or after this meeting shall be dealt with as specified in Contract Documents.

Contract Documents are available at no cost electronically on the City of Somerville's website: https://www.somervillema.gov/departments/finance/purchasing/bids/ifb-24-53. Bids should be submitted via Bid Express at bidexpress.com or delivered to the City of Somerville's Procurement & Contracting Services at the following address by 4/11/2024 at 1 PM EST:

City of Somerville, Procurement & Contracting Services Department

Attn: Andrea Caruth

93 Highland Avenue, Somerville, MA 02143

Project Description

- **Base Bid**
  - Installation of approximately 12,500 linear feet of cured-in-place pipe (10,300 LF of sanitary sewer and 2,200 LF of storm drain);
  - Removal of approximately 7 intruding service connections;
  - Rehabilitation of 310 vertical feet of sewer manholes and 230 vertical feet of storm drain manholes;
  - Installation or replacement of 12 sewer manholes and 6 storm drain manholes;
  - Open cut and replacement of approximately 1,100 linear feet of sanitary sewer pipe and approximately 400 linear feet of storm drainage pipe;
  - Open cut sanitary sewer spot repair of 13 locations and storm drain spot repair of 10 locations;
  - Installation of temporary pavement, permanent pavement, and sidewalk restoration; and
  - All materials, equipment, services and construction inherent to the Work.

- **Bid Alternate A — Green Stormwater Infrastructure at Chetwynd and W Adams (if awarded by Owner)**
  - Installation of subsurface infiltration system;
  - Installation of one deep sump catch basin with pre-treatment screen;
  - Installation of temporary pavement, permanent pavement and sidewalk restoration; and
  - All materials, equipment, services and construction inherent to the Work.

- **Bid Alternate B — Green Stormwater Infrastructure at Fairfax (if awarded by Owner)**
  - Installation of a non-infiltrating biofiltration system;
  - Installation of one rain guardian inlet;
  - Installation of underdrain connected to the existing catch basin;
  - Installation of temporary pavement, permanent pavement and sidewalk restoration as necessary;
  - Installation of approximately 35 linear feet of watermain; and
  - All materials, equipment, services and construction inherent to the Work.

- **Bid Alternate C — Additional Storm Drain Lining (if awarded by Owner)**
  - Installation of approximately 1,900 linear feet of cured-in-place pipe;
  - Rehabilitation of 55 vertical feet of storm drain manholes;
  - All materials, equipment, services and construction inherent to the Work.

- **Bid Alternate D — Additional Storm Drain Upgrades on Broadway (if awarded by Owner)**
  - Installation of approximately 2,600 linear feet of cured-in-place pipe;
  - Rehabilitation of 140 vertical feet of storm drain manholes;
  - Open cut storm drain spot repair of 6 locations;

- Installation of temporary pavement, permanent pavement, and sidewalk restoration; and
- All materials, equipment, services and construction inherent to the Work.

Specifications

- Virtual Bid Opening – Thursday, April 11, 2024, at 1:00 PM. The Zoom link is included in the Bid Documents.
- Interpretations or clarifications deemed necessary in response to questions received about the meaning or intent of the Bid Documents will be issued by Addenda to all Offerors who have registered as bid holders. Bidders are encouraged to contact the Procurement & Contracting Services Department to register as a bid document holder to automatically be alerted as to addenda as they are issued. It is the responsibility of the Offeror to also monitor the bid portal on the City's website for any updates, addenda, etc. regarding that specific solicitation.
- Questions received after 5:00 PM, Monday, April 1, 2024, will be answered at the City's discretion based on the substance of the question. Only answers in the Addenda will be binding. Oral statements, interpretations, and clarifications may not be relied upon and will not be binding or legally effective.

Schedule

- The City intends to award the project by April 25, 2024. The estimated project commencement date is May 16, 2024 and the estimated project completion date is June 27, 2025.
- Before any work is completed, the City of Somerville street occupancy permits and associated Traffic Management Plans must be submitted and approved by the City.
- Perform open cut repairs shown on the Contract Drawings prior to the installation of cured-in-place pipe (CIPP) liners.
- Coordinate and schedule CIPP lining Work with MWRA in accordance with MWRA permitting.
- Coordinate with City and City Arborist at least one week before scheduling Work on Broadway (if Awarded by Owner).
- Work shall be scheduled during non-school hours near and around West Somerville Neighborhood School and Open Center for Children at 177 and 155 Powder House Boulevard, respectively.

Qualifications

- Proposer shall have successfully completed at least ten (10) projects involving construction of similar size and scope in the same state as the Project covered by the Contract Documents within the last ten (10) years.

- Proposer or its Subcontractor shall have a minimum of five (5) years continuous experience in CIPP lining and manhole rehabilitation for projects of similar size and scope. The lead field personnel shall have a minimum 5 years' experience with proposed CIPP and manhole rehabilitation technologies and have demonstrated competency and experience to perform resin wet-out, removal of intruding service connections, CIPP liner installation, CIPP liner curing, robotic service reinstatements, and manhole rehabilitation.

- Proposer or its Subcontractor shall have at least five (5) projects of similar size and scope that include temporary street repair, final paving, and surface restoration within public streets within the last ten (10) years.

- Proposer or its Subcontractor overseeing the bypass pumping system shall have provided bypass pumping for a minimum of 10 years and five (5) projects of similar size and scope.

- All employees on the project shall possess a minimum 10-hour OSHA construction safety training.

- Optional:
  Are you a Mass. Supplier Diversity Office MBE/WBE certified minority or woman owned business? Additional minority designations may be submitted by attaching supporting documentation.

Project Award

Project award is based on lowest total bid price, from a qualified eligible and responsible bidder.

Bid Items

Please carefully review the bid items in Section 01 20 25 – Measurement and Payment of the Technical Specifications.

Permitting

- City of Somerville – Street and Sidewalk Opening/Occupancy Permit. The Contractor is responsible for obtaining street and sidewalk occupancy permits from the City's permitting website, Citizen Serve, at https://www.somervillema.gov/citizenserve. This includes completing Traffic Management Plans prior to commencing work. TMPs shall be prepared for each work site location or typical traffic management plans for similar work zones and shall be strictly adhered to. TMPs may require detours for multiple forms of travel when pedestrian and/or cycling traffic is expected to be impacted.

Unapproved deviation from a TMP may result in shut down of the work site at the Contractor's expense.

- City of Somerville – Hydrant Permit
- City of Somerville – Drain Layer Application Instructions
- City of Somerville – Temporary Parking Restrictions Permit
- Right-of-Way Occupancy Request Form will be submitted every week by Thursday at 12:00 PM to Jesse Moos, City of Somerville Construction Liaison & Compliance Manager. The weekly request shall include an updated 3-week construction schedule.
- Coordinate and schedule Work with DCR in accordance with the DCR permit.
- Coordinate CIPP lining work and obtain appropriate discharge permits from MWRA before initiating work.

Other Contractor Responsibilities

- *Weekly Right-of-way Coordination Meetings:* – The Contractor will attend Right-of-Way Coordination meetings on a weekly basis throughout the Work to review upcoming areas of inspection, schedule, police details, traffic impacts and potential conflicts/interests. Right-of-Way Construction Coordination Meetings are held on Thursdays at 3:00 PM. Meetings may be held virtually or in-person at Somerville City Hall.

- *Weekly Progress Meetings:* - The Contractor shall prepare for and attend progress meetings on a weekly basis throughout progress of the Work with the City and other pertinent stakeholders. These meetings may be changed to bi-weekly or monthly as mutually agreed upon.

- The City will not provide parking spaces or staging areas during construction. The Contractor shall be required to locate and secure off-site construction parking area and staging area for equipment and materials unless otherwise directed by the Engineer or Owner.

Water and Waste Management

- Discharge, bypass, or flooding of sewage, cleaning water, or debris to public or private property, including ground, surrounding residences, and downstream pipes is prohibited. Immediately clean and repair damage resulting from cleaning and inspection to satisfaction of Engineer.
- All materials removed by during the cleaning of the combined and sanitary sewer systems shall be stored, tested, transported, and disposed of in accordance with local, state, and federal disposal regulations.
- The Contractor shall be responsible for the legal disposal of all debris removed from the sewers during the cleaning operation including any costs incurred.

- Water shall be provided by the City at no cost. The Contractor shall apply for a hydrant permit and pay for any associated permit fee. Approval by the City Water Department shall be obtained before water is used at each hydrant location.
- The City will not provide a soil stockpiling or dump site. The Contractor shall prepare accordingly.
- The Contractor shall be responsible for trench dewatering and should review the geotechnical boring data included in the bid documents.

Special Items

- CIPP Lining Notification Schedule: The Contractor shall be responsible for providing the City with a list of pipe segments to be lined as part of the ROW form submittals and three-week look aheads.
    - For each sewer pipe to be lined, the contractor shall prepare "One Week" and "24 Hour" Notice Letters to impacted property owners. "24 Hour" Notice letters to be provided only to homes directly connected to the sewer pipe being lined.
    - For each storm drain pipe to be lined, the contractor shall prepare "One Week" Notice Letters to impacted property owners.
    - Maps of associated properties along with example notice letters are included in **Appendix L**.
- Storm over sewer lining: In some storm pipe segments on Fairfax Street and Gordon Street, a segment of pipe is comprised of a small PVC pipe crown placed over an invert in an old manhole. Photos and locations of this work will be provided in an upcoming Addendum.

Meeting Conclusion

- There will be an Addendum issued after this meeting that includes the minutes for this meeting, the sign-in sheet, and will address questions received or raised during this meeting or prior to 5:00 PM, Monday, April 1, 2024, question deadline.

Questions

- Open Discussion