October 14, 2025

ADDENDUM #3

CITY OF EAST PROVIDENCE
DEPARTMENT OF PUBLIC WORKS - ENGINEERING DIVISION
REQUEST FOR PROPOSALS
EP24/25-026
STORMWATER QUALITY IMPROVEMENT RETROFITS

Addendum No. 3 forms a part of the Contract Documents and modifies the original Bidding Documents dated September 22, 2025 as noted below.

All Bidders must acknowledge receipt of this Addendum in the space provided on the signature page of the Bid Forms. **Failure to do so may subject the Bidder to disqualification.**

CHANGES MADE TO THE CONTRACT DOCUMENTS

1. ADVERTISEMENT

- Updated bid opening date to Wednesday, October 22, 2025 at 10:00 AM.

2. MEASUREMENT AND PAYMENT

- Added Allowance for Traffic Control via Police Officers.
- Added furnishing and installation of RIDOT standard guardrail with MUTCD compliant roadway end marker to Lump Sum Item 4: Sand Filter and Lump Sum Item 6: Gravel Wetland.
- Revised Item 7: Storm Sewer Improvements to reflect that the contractor to furnish and install a Tideflex® Check Valve or equivalent product and check valve to be fitted on the 29”x45” elliptical reinforced concrete pipe.

3. BID FORM

- Added Item 3: Allowance of $5,000 for Traffic Control via Police Officers.
- Added Bid Unit Price column.
- Updated bid opening date to Wednesday, October 22, 2025 at 10:00 AM.

4. SPECIFICATIONS

- Section 1.3 Summary: Updated reference to Tideflex® Check Valve or equivalent product.
- Section 2.13: Retitled Storm Drain Check Valve and revised Section 2.13.A as follows:

- *Check valve shall be a Tideflex Series TF-1 or equivalent to be fitted on a 29" x 45" elliptical reinforced concrete pipe.*

5. DRAWINGS

- Updated detail references and match lines on Construction Drawings in response to questions posed by Bidders.

RESPONSES TO QUESTIONS POSED BY CONTRACTORS

Questions posed by Bidders, along with the City's responses, are attached as part of Addendum No. 3.

Bidder must acknowledge receipt of this Addendum No. 3 on the signature page of the Bid Forms to be submitted by the stipulated deadline.

ATTACHMENTS to Addendum No. 3:

- Revised Advertisement Add 3
- Revised Measurement and Payment Section Add 3
- Revised Bid Form Add 3
- Revised Specification Section 334000 Add 3
- Revised Construction Drawings Add 3
- Responses to Pre-Bid Questions Add 3

END OF ADDENDUM NO. 3

CITY OF EAST PROVIDENCE
DEPARTMENT OF PUBLIC WORKS - ENGINEERING DIVISION
REQUEST FOR PROPOSALS
EP24/25-026
STORMWATER QUALITY IMPROVEMENT RETROFITS
BID OPENING ~~FRIDAY~~WEDNESDAY, OCTOBER 22~~17~~, 2025, AT 10:00 AM

ADVERTISEMENT

The City of East Providence is soliciting proposals from contractors experienced in storm and sanitary sewer improvements to provide and install storm drain & sewer piping, stormwater retrofit BMP's, and additional associated stormwater infrastructure at three locations in and around the Sabin Point Park: Locust St., Narragansett Ave, & Middle St., East Providence, Rhode Island.

A pre-bid meeting will be held on Thursday, September 25, 2025, at 2:00pm in Conference Room A at East Providence City Hall, located at 145 Taunton Avenue, East Providence, Rhode Island 02914.

Specifications may be downloaded from the City's website https://eastprovidenceri.gov/rfp

One (1) original, three (3) copies and 1 Thumb Drive of the proposal shall be submitted in one (1) sealed envelope to East Providence City Hall, Controllers Office, Room 103, Attn: Jessica Lamprey, Procurement Specialist, 145 Taunton Ave., East Providence, RI 02914 no later than, **~~FRIDAY~~WEDNESDAY, OCTOBER 22~~17~~, 2025, AT 10:00 AM.** The bids will be publicly opened and recorded on the same day at East Providence City Hall in Conference Room A. Bids received with a time of 10:01 AM or later will be rejected. The outside envelope must be marked RFP EP25/26-026 **STORMWATER QUALITY IMPROVEMENT RETROFITS.**

The City reserves the right to waive any informality to reject any or all bids if deemed to be in the best interest of the City.

Any questions should be directed to Daniel Borges, Director of Public Works (401) 435-7701 dborges@eastprovidenceri.gov, Erik Skadberg, City Engineer, City of East Providence, Rhode Island, at (401) 435-7703 extension 1, eskadberg@eastprovidenceri.gov, and Jessica Lamprey, Procurement Specialist at Jlamprey@eastprovidenceri.gov, no later than **WEDNESDAY, OCTOBER 10, 2025, AT 4:00PM.**

Equal Opportunity/Affirmative Action Employer'
Jessica Lamprey, Procurement Specialist
Jlamprey@eastprovidenceri.gov

MEASUREMENT AND PAYMENT

GENERAL REQUIREMENTS

1. Under the total price bid for the project, the Contractor shall furnish all materials, equipment, and labor to perform all operations necessary to complete the Work specified herein. All supervision, overhead items, protection and precautions and all other costs incidental to the Work, complete and as specified, shall be included.

2. A complete finished job as intended by the general nature of these specifications shall be produced whether any wording or direction is inadvertently omitted or not clearly stated.

3. The Contractor shall summarize all Site activities and quantities involved in the Work on a work sheet each day to be submitted to and resolved with the Engineer and City at the end of each day.

4. Measurement for payment for lump sum items will be based on percentage of work complete as determined by the Engineer and City.

5. Measurement for payment for unit price items will be based on actual quantity installed for the Work, as determined by the Engineer and City. Payment for unit price items shall be made based upon the actual quantities of work performed, submitted on an approved invoice, and approved by the Engineer and City.

6. Measurement for payment for hourly/daily/weekly items will be based on the time worked on the Site. Time spent traveling to and from the Site and any other time such as preparation for Site activities must be included as part of the mobilization activities.

MEASUREMENT OF QUANTITIES

The following payment terms relate to individual items included in the Bid:

1. Measurement by Weight:

   Measurement shall be by the ton as determined at a United States Department of Transportation (USDOT)-certified or other weigh station acceptable to Engineer, prior to delivery to the Site and/or off-site recycling/disposal/reuse facilities.

2. Measurement by Volume:

   For stockpiled soil, measurement shall be determined to the nearest cubic yard volume by physical measurement of the stockpile dimensions prior to excavation or loading.

   For excavations, measurement shall be determined to the nearest cubic yard volume by physical measurement of the excavation dimensions prior to placement and compaction of backfill.

   For backfill, measurement shall be determined to the nearest cubic yard volume determined by physical measurement of the excavation dimensions prior to placement and compaction of backfill.

   For solid and other bulk wastes, measurement shall be determined based on cubic yards or tons charged for off-site management by the receiving facility, as verified by the Engineer, for actual certified receipts or weight slips (tons) provided by the approved receiving facility.

MEASUREMENT AND PAYMENT ITEMS

The following measurement and payment terms relate to individual items included in the Bid:

LUMP SUM ITEMS

Item 1 – Mobilization/Demobilization

Under the lump sum bid price for this Item, Contractor shall provide the following:

- Mobilization and demobilization of all labor, materials and equipment not specifically included under other Items.
- 100% Surety/Performance Bond.
- Insurance certificates, including those for all Subcontractors.
- Attendance at the pre-construction conference, at weekly progress meetings and at other time critical site meetings requested by Engineer or City.
- Site-Specific Health and Safety Plan, including certificates demonstrating personnel are properly trained.
- Filing for and obtaining all necessary permits, except for CRMC permit.
- Dig Safe notification for all subsurface activities at the Site.
- Submittals not specifically required under other bid items.
- Preparation and submittal of the Project Schedule and Schedule of Values for Lump Sum Items, plus any other submittals not specifically included under other payment items.
- Temporary facilities, including but not limited to sanitary facilities, drinking water for site workers, safety tape and barricades, equipment decontamination/staging areas, trailers, and all preparatory work not specifically included under other payment items.
- ~~Police detail as needed for safe ingress and egress for trucks and other construction vehicles during entire contract.~~
- Site cleanup to the satisfaction of Engineer.
- Removal and off-site management of erosion controls, temporary chain link fencing and barriers.
- Removal of all protective measures related to traffic controls, trees, residential features, etc.

Measurement for payment will be made based on percent complete for this Item, as determined by Engineer.

Payment under this Item will be considered full compensation for all labor, materials, and equipment required to conduct the work described above.

Item 2 – Site Preparation

Under the lump sum bid price for this Item, Contractor shall provide the following:

- Furnishing, installing, maintaining (for the duration of the Contract), and removing erosion controls shown on the Contract Drawings. Erosion controls include, but are not limited to, compost filter sock, inlet protection for catch basins, polyethylene sheeting, silt fencing.
- Clearing and grubbing.
- Preparation of temporary stockpile and material/equipment staging areas.
- Temporary relocation and storage of playground equipment, in coordination with the City.
- Furnishing and installing a temporary chain link fence around the limits of disturbance.
- Installation of any barriers or other demarcations for excavation or site control.
- Provide all labor, materials and equipment required to control dust emissions.

- Protection of City property, site features, residential houses, and underground utilities not identified for demolition.
- Construction and installation of construction entrances with appropriate materials.
- Testing pitting or other subsurface investigation required for location of subsurface utilities and evaluation of subsurface conditions.
- Survey control and protection of benchmarks and survey control points from disturbance during construction.
- Temporary removal of site features such as mailboxes, fencing/posts, etc.

Measurement for payment will be made based on percent complete for this Item, as determined by Engineer.

Payment under this Item will be considered full compensation for all labor, materials, and equipment required to conduct the work described above.

Item 3 –Demolition

Under the lump sum bid price for this Item, Contractor shall provide the following:

- Furnishing and installation of support of excavation to allow for demolition of subsurface structures.
- Cutting and capping of existing storm sewer piping, as indicated on the Drawings.
- Cutting and plugging of existing sanitary sewer pipes, as indicated on the Drawings.
- Demolition and removal of existing storm catch basins, storm and sanitary manholes, and storm/sanitary piping.
- Demolition and removal of one (1) light pole and base.
- Demolition and removal of 415 linear feet (LF) of concrete sidewalk.
- Removal of existing guard rail, wood posts, within Sabin Park at the end of Middle Street.
- Milling of asphalt pavement in Middle Street and Narragansett Avenue.
- Removed material shall be managed off-site at a properly permitted facility. The Contractor shall use the most cost-effective means of off-site material management.
- Removal and disposal of shrubs, trees, and other vegetation, as denoted on the plans and required to perform the work.

Measurement for payment will be made based on percent complete for this Item, as determined by Engineer.

Payment under this Item will be considered full compensation for all labor, materials, and equipment required to conduct the work described above.

Item 4 – Sand Filter

Under the lump sum bid price for this Item, Contractor shall provide the following:

- Excavation to the lines and grades to install the sand filter, as indicated on the Drawings.
- Furnishing and installing 100 linear feet of perforated PVC underdrain piping and riser piping. Includes grates for top of riser pipe and UV-resistant paint.
- Furnishing and installing 11 linear feet of solid PVC piping.
- Furnishing and installation of 1000 square feet (SF) of impermeable high-density polyethylene (HDPE) liner.
- Installation of two (2) asphalt swales and sediment forebay.
- Furnishing and installing one (1) concrete weir wall and stone inlet.
- Procurement of 4 CY of bioretention mix, 4 CY of concrete sand, 3 CY of 3” pea gravel, 4 CY of ¾” crushed gravel, 113 Square Yards (SY) of loam and seed.

- Furnishing and installation of steel guardrail with MUTCD compliant roadway end marker sign in accordance with Section 901 of the Rhode Island Standard Specifications.

Costs for dewatering and disposal of dewatering fluids shall be paid for under **Item 9** & **Item 11** respectively. Costs for excess soil management shall be paid for under **Item 13.**

Measurement for payment will be made based on percent complete for this Item, as determined by Engineer.

Payment under this Item will be considered full compensation for all labor, materials, and equipment required to conduct the work described above.

Item 5 – Dry Swale

Under the lump sum bid price for this Item, Contractor shall provide the following:

- Excavation to the lines and grades to install the dry swale, as indicated on the Drawings.
- Installation of v-notch pre-cast concrete curb.
- Furnishing and installation of asphalt inlet.
- Furnishing and installation of stone inlet.
- Furnishing and installation of 255 LF of perforated underdrain piping.
- Furnishing and installation of 30 SY of riprap.
- Furnishing and installation of 30 SY of filter fabric.
- Furnishing and installation of 2000 square feet (SF) of impermeable high-density polyethylene (HDPE) liner.
- Procurement of 80 CY of bioretention mix, 12 CY of 3" pea gravel, 30 CY of ¾" crushed gravel, 60 SY of loam and seed.

Costs for dewatering and disposal of dewatering fluids shall be paid for under **Item 9** & **Item 11** respectively. Costs for excess soil management shall be paid for under **Item 13.**

Measurement for payment will be made based on percent complete for this Item, as determined by Engineer.

Payment under this Item will be considered full compensation for all labor, materials, and equipment required to conduct the work described above.

Item 6 – Gravel Wetland

Under the lump sum bid price for this Item, Contractor shall provide the following:

- Excavation to the lines and grades to install the gravel wetland, as indicated on the Drawings.
- Furnishing and installation of 133 LF of perforated underdrain piping/riser piping.
- Furnishing and installation of 15 LF of solid PVC piping.
- Installation of asphalt sediment forebay.
- Furnishing and installation of stone inlet.
- Furnishing and installation of two (2) precast concrete spillways.
- Furnishing and installation of precast concrete outlet control structure, as detailed on the Drawings.
- Furnishing and installation of 11,000 square feet (SF) of impermeable high-density polyethylene (HDPE) liner.
- Procurement of 275 CY of wetland soil mix, 110 CY of 3" pea gravel, 475 CY of ¾" crushed gravel, 60 SY of loam and seed.
- Furnishing and installation of steel guardrail with MUTCD compliant roadway end marker sign in accordance with Section 901 of the Rhode Island Standard Specifications.

Costs for dewatering and disposal of dewatering fluids shall be paid for under **Item 9** & **Item 11** respectively. Costs for excess soil management shall be paid for under **Item 13.**

Measurement for payment will be made based on percent complete for this Item, as determined by Engineer.

Payment under this Item will be considered full compensation for all labor, materials, and equipment required to conduct the work described above.

Item 7 – Storm Sewer Improvements

Under the lump sum bid price for this Item, Contractor shall provide the following:

- Trenching and excavation to install the storm piping and structures to the elevations and grades, as shown on the plans.
- Furnishing and installation of support of excavation.
- Backfill, compaction, and installation of identification tape. Basis of bid shall use 175 CY of bedding material. Ordinary borrow material (either reused from onsite sources or imported shall be paid for under the Unit Price Item 12).
- Cleanout and maintenance of drainage system prior to completion.
- Inspection and testing of new drainage system.
- Furnishing and installation of pre-cast concrete headwall to accept a 29"x45" elliptical reinforced concrete pipe.
- Furnishing and installation of 75 SY of rip rap for outlet protection.
- Furnishing and installation of three (3) Arlington-style trenches of 20', 20', and 8' as indicated on the plans.
- Furnishing and installing one (1) Tideflex series TF-1 check valve or equivalent to be fitted on a 29" x 45" elliptical reinforced concrete pipe.
- Equipment, labor and materials required to maintain storm sewer flow during entire contract.
- As-built drawings, as recorded by a registered professional surveyor/engineer.

Costs for dewatering and disposal of dewatering fluids shall be paid for under **Item 9** & **Item 11** respectively. Costs for ordinary borrow backfill shall be paid for under **Item 12**. Costs for excess soil management shall be paid for under **Item 13**.

Measurement for payment will be made based on percent complete for this Item, as determined by Engineer.

Payment under this Item will be considered full compensation for all labor, materials, and equipment required to conduct the work described above.

Item 8 – Sanitary Sewer Improvements

Under the lump sum bid price for this Item, Contractor shall provide the following:

- Trenching and excavation to install the sanitary sewer piping and structures to the elevations and grades, as shown on the plans.
- Backfill, compaction, and installation of identification tape. Basis of bid shall use 37 CY of bedding material. Ordinary borrow material (either reused from onsite sources or imported shall be paid for under the Unit Price **Item 12**).
- Furnishing and installation of support of excavation.
- Coring to install new sanitary sewer piping into existing sanitary manholes.
- Cleanout and maintenance of sanitary system prior to completion.
- Inspection and testing of new sanitary system.
- Equipment, material and labor required to maintain sanitary sewer flow during contract.
- As-built drawings, as recorded by a registered professional surveyor/engineer.

Costs for dewatering and disposal of dewatering fluids shall be paid for under **Item 9** & **Item 11** respectively. Costs for ordinary borrow backfill shall be paid for under **Item 12**. Costs for excess soil management shall be paid for under **Item 13.**

Measurement for payment will be made based on percent complete for this Item, as determined by Engineer.

Payment under this Item will be considered full compensation for all labor, materials, and equipment required to conduct the work described above.

Item 9 – Dewatering

Under the lump sum bid price for this Item, Contractor shall provide the following:

- Design, furnish, install, test, operate, monitor, and maintain a dewatering system for the duration of the contract, as approved by the Engineer. Contractor shall assume for base bid approximately 3 months of dewatering.
- Contractor shall assume the use of a fractionation tank, pumps, sediment/filter bags, standby power, valves and other appurtenances.
- Dewatering system shall be designed to control surface and groundwater flow into excavations and permit construction on dry, stable subgrades.
- Test borings or other subsurface investigations, as needed, for dewatering design/operations.
- Installation of dikes, berms and other control measures to prevent stormwater from entering excavations.
- Preparation of shop drawings and field reports for dewatering system.
- Monitoring of site features, as necessary, to ensure settlement has not occurred due to dewatering.
- Removal of dewatering system when no longer required.

Costs for disposal of dewatering fluids shall be paid for under **Item 11**.

Measurement for payment will be made based on percent complete for this Item, as determined by Engineer.

Payment under this Item will be considered full compensation for all labor, materials, and equipment required to conduct the dewatering work, as described above.

Item 10 – Landscaping

Under the lump sum bid price for this Item, Contractor shall provide the following:

- Installation of plantings, as shown on the Drawings.
- Watering and other maintenance requirements of plantings for the first year to maintain effectiveness.
- Replanting/re-seeding if any plantings don't survive the first year.
- Procurement of 1 Acre of Loam & Seed for disturbed areas outside of designated BMP's.

Measurement for payment will be made based on percent complete for this Item, as determined by Engineer.

Payment under this Item will be considered full compensation for all labor, materials, and equipment required to conduct the dewatering work, as described above.

Item 11 –Management of Dewatering Fluids

Under the unit bid price for this Item, the Contractor shall discharge dewatering into the City's storm sewer system. Contractor shall assume for base bid the management of 21,000 gallons of dewatering fluids.

Contractor to also perform/provide the following:

- Permits or other approvals required to discharge dewatering fluids to the City storm sewer system.
- Obtain and submit copy of current operating permits for the respective Receiving Facilities for Engineer's review and approval, prior to shipping dewatering fluids from the Site.
- Wheel washing, including construction and maintenance of truck wash-down pads, to prevent tracking soil on City streets.
- Payment of all transportation, taxes and receiving facility gate fees, including environmental and other applicable fees.
- Documentation of all shipments, including all signed original manifests and load summaries provided by Engineer.
- Certified disposal slips for all shipments.

Payment will be made at the unit bid price for each gallon of dewatering fluid sent to the City's storm sewer system or loaded, transported and shipped off-site, as indicated either by meter readings provided by contractor or certified slips and manifest documents, and will be considered full compensation for Work under this Item.

Item 12 – Importation, Compaction, and Placement of Ordinary Borrow

Under the unit price for this Item, Contractor shall reuse, import, compact, and install 789 tons of ordinary borrow in accordance with the specifications and to the limits as shown on the Drawings.

Work under this Item shall include the following:

- Furnish and install ordinary borrow materials in excavations to subgrade lines and grades and as directed by Engineer.
- Compaction of ordinary borrow in accordance with the specifications and as directed by Engineer.
- Providing field quality control through the use of a qualified independent geotechnical engineering testing agency for backfilled material.

Measurement shall be by the ton, as determined by certified weight slips submitted to Engineer.

Payment for this Item will be made for the quantities documented on certified weight slips, at the unit bid price, as determined by Engineer.

Item 13 – Excess Soil Management

Under the unit bid price for this Item, the Contractor shall load, transport, and deliver non-hazardous soils to appropriately permitted off-site management facilities, approved by Engineer. Contractor shall assume for bidding 2700 tons of excess soils to be managed during the project.

Contractor to also perform/provide the following:

- Selection of waste disposal facilities
- Obtain and submit copy of current operating permits for the respective Receiving Facilities for Engineer's review and approval, prior to shipping soils from the Site.
- Preparation & Coordination of Waste Profile, Bill of Ladings, and other approvals with Engineer and Receiving Facilities. City will sign all waste disposal documentation as Generator.
- Sampling and analysis of soils to obtain acceptance from receiving facilities according to their requirements.
- Transportation of all materials to appropriately licensed receiving facilities.
- Use of appropriate transportation containers and lining and/or covering of all loads to eliminate leakage and/or wind erosion during shipments. No free liquids in the wastes will be permitted.
- Wheel washing, including construction and maintenance of truck wash-down pads, to prevent tracking soil on City streets.
- Payment of all transportation, taxes and receiving facility gate fees, including environmental and other applicable fees.
- Documentation of all shipments, including all signed original Bills of Ladings, manifests and load summaries provided by Engineer.
- Certified weight slips for all shipments.
- Surveying for quantity take-off and as-built plans.
- Stockpiling and handling of excavated materials.
- Assisting Engineer with collection of soil confirmation samples.
- Implementation of dust control measures during the entire earthwork operation.

Payment will be made at the unit bid price for each ton of excess soil managed off-site at appropriately licensed off-site facilities, as indicated on certified weight slips and manifest documents, and will be considered full compensation for Work under this Item.

Release of retainage for this Item will be made upon receipt of all appropriate disposal documentation, including certified weight slips, manifests, and other relevant documentation.

Item 14 – Asphalt Paving

Under the unit price for this Item, Contractor shall import, place, compact and install 1-1/2-inch Dense Grade Crushed Stone and hot mix asphalt in accordance with the specifications and to the limits as shown on the Drawings.

Work under this Item shall include the following:

- Import, compact and install 25 cy of 1-1/2-inch Dense Grade Crushed Stone to match existing grades or as directed by Engineer.
- Cleaning and application of tack coat to adjoining pavement.
- Install 32 tons of hot mix asphalt which includes 2.5-inch hot mix asphalt intermediate course and 1.5-inch hot mix asphalt surface course to match final surrounding grades and as directed by Engineer. New pavement pitch shall be constructed to prevent ponding and direct stormwater flow appropriately.
- Furnish and install 450 LF of cape cod berm asphalt curbing.

Measurement shall be by the square yard of paving, as determined by the Engineer.

Payment for this Item will be made for the area of paving, at the unit bid price.

Item 15 – Concrete Sidewalk Restoration

Under the unit price for this Item, Contractor shall import, place, compact and install gravel borrow, 8" base as shown on details and concrete in accordance with the specifications and to the limits as shown on the Drawings.

Work under this Item shall include the following:

- Import, compact and install 40 cy of gravel borrow, 8" base as shown on details to match existing grades or as directed by Engineer.
- Install 290 linear feet of 4-inch bituminous concrete sidewalk to match final surrounding grades and as directed by Engineer. New concrete pitch shall be constructed to prevent ponding and direct stormwater flow appropriately.

Costs for ordinary borrow backfill shall be paid for under **Item 12.** Costs for excess soil management shall be paid for under **Item 13.**

Measurement shall be by the square yard of concrete sidewalk installed, as determined by the Engineer.

Payment for this Item will be made for the area of concrete, at the unit bid price.

Item 16 –4' Diameter Precast Manhole

Under the unit price for this Item, Contractor shall furnish and install one (1) 4-foot inside diameter precast concrete manhole, complete with all necessary equipment, in accordance with the Contract Drawings and Specifications, and to the lines and grades directed by the Engineer. This Item shall include, but is not limited to, placement of precast sections, installation of steps, gaskets, sealants, frames and covers, pipe connections, backfilling, and surface restoration as required.
Work under this Item shall include the following:

- Furnish and install 4-foot diameter precast concrete manhole with all associated equipment in conformance with the details shown on the Contract Drawings and as directed by the Engineer.
- Provide all necessary excavation, dewatering, shoring, and backfill to complete the work.

- Install frame and cover to finished grade, adjusted as necessary.
- Connect incoming and outgoing pipes with watertight connections.

Measurement shall be by each manhole installed, complete and in place, as determined by the Engineer.

Payment for this Item shall be made at the unit bid price per each manhole, which shall constitute full compensation for furnishing and installing the precast manhole and all work incidental thereto, as described above.

Item 17 –5' Diameter Precast Manhole

Under the unit price for this Item, Contractor shall furnish and install three (3) 5-foot inside diameter precast concrete manholes, complete with all necessary equipment, in accordance with the Contract Drawings and Specifications, and to the lines and grades directed by the Engineer. This Item shall include, but is not limited to, placement of precast sections, installation of steps, gaskets, sealants, frames and covers, pipe connections, backfilling, and surface restoration as required.

Work under this Item shall include the following:

- Furnish and install 5-foot diameter precast concrete manhole with all associated equipment in conformance with the details shown on the Contract Drawings and as directed by the Engineer.
- Provide all necessary excavation, dewatering, shoring, and backfill to complete the work.
- Install frame and cover to finished grade, adjusted as necessary.
- Coring, as necessary for connection of existing storm sewer pipes.

Measurement shall be by each manhole installed, complete and in place, as determined by the Engineer.

Payment for this Item shall be made at the unit bid price per each manhole, which shall constitute full compensation for furnishing and installing the precast manhole and all work incidental thereto, as described above.

Item 18 –6' Diameter Precast Manhole

Under the unit price for this Item, Contractor shall furnish and install one (1) 6-foot inside diameter precast concrete manholes, complete with all necessary equipment, in accordance with the Contract Drawings and Specifications, and to the lines and grades directed by the Engineer. This Item shall include, but is not limited to, placement of precast sections, installation of steps, gaskets, sealants, frames and covers, pipe connections, backfilling, and surface restoration as required.

Work under this Item shall include the following:

- Furnish and install 6-foot diameter precast concrete manhole with all associated equipment in conformance with the details shown on the Contract Drawings and as directed by the Engineer.
- Provide all necessary excavation, dewatering, shoring, and backfill to complete the work.
- Install frame and cover to finished grade, adjusted as necessary.
- Coring, as necessary for connection of existing storm sewer pipes.

Measurement shall be by each manhole installed, complete and in place, as determined by the Engineer.

Payment for this Item shall be made at the unit bid price per each manhole, which shall constitute full compensation for furnishing and installing the precast manhole and all work incidental thereto, as described above.

Item 19 –7' Diameter Precast Manhole

Under the unit price for this Item, Contractor shall furnish and install one (1) 7-foot inside diameter precast concrete manholes, complete with all necessary equipment, in accordance with the Contract

Drawings and Specifications, and to the lines and grades directed by the Engineer. This Item shall include, but is not limited to, placement of precast sections, installation of steps, gaskets, sealants, frames and covers, pipe connections, backfilling, and surface restoration as required.

Work under this Item shall include the following:

- Furnish and install 7-foot diameter precast concrete manhole with all associated equipment in conformance with the details shown on the Contract Drawings and as directed by the Engineer.
- Provide all necessary excavation, dewatering, shoring, and backfill to complete the work.
- Install frame and cover to finished grade, adjusted as necessary.
- Coring, as necessary for connection of existing storm sewer pipes.

Measurement shall be by each manhole installed, complete and in place, as determined by the Engineer.

Payment for this Item shall be made at the unit bid price per each manhole, which shall constitute full compensation for furnishing and installing the precast manhole and all work incidental thereto, as described above.

Item 20 –Precast Double Grated Catch Basin

Under the unit price for this Item, Contractor shall furnish and install six (6) precast double grated catch basins, complete with all necessary equipment, in accordance with the Contract Drawings and Specifications, and to the lines and grades directed by the Engineer. This Item shall include, but is not limited to, placement of precast sections, installation of steps, gaskets, sealants, frames and covers, pipe connections, backfilling, and surface restoration as required.

Work under this Item shall include the following:

- Furnish and install 5-foot diameter precast double grated catch basin with all associated equipment in conformance with the details shown on the Contract Drawings and as directed by the Engineer.
- Provide all necessary excavation, dewatering, shoring, and backfill to complete the work.
- Install frame and cover to finished grade, adjusted as necessary.
- Coring, as necessary for connection of existing storm sewer pipes.

Measurement shall be by each manhole installed, complete and in place, as determined by the Engineer.

Payment for this Item shall be made at the unit bid price per each manhole, which shall constitute full compensation for furnishing and installing the precast manhole and all work incidental thereto, as described above.

Item 21 –36" Reinforced Concrete Pipe

Under the unit price for this Item, the Contractor shall furnish and install 169 LF 36-inch reinforced concrete pipe (RCP) in accordance with the technical specifications and to the lines, grades, and limits directed by the Engineer. This Item includes, but is not limited to, jointing of the pipe as shown on the Contract Drawings.

Work under this Item shall include the following:

- Furnish and install 36-inch reinforced concrete pipe to the lines, grades, and elevations shown on the Contract Drawings and as directed by the Engineer.
- Install joints, fittings, and other equipment as required.

Measurement shall be by the linear foot of installed pipe, measured along the centerline of the pipe from end to end, as determined by the Engineer.

Payment for this Item will be made for the quantities documented on the approved measurements, at

the unit bid price per linear foot, which shall be full compensation for furnishing all labor, materials, equipment, and incidentals necessary to complete the work.

Item 22 –24" Reinforced Concrete Pipe

Under the unit price for this Item, the Contractor shall furnish and install 11 LF 24-inch reinforced concrete pipe (RCP) in accordance with the technical specifications and to the lines, grades, and limits directed by the Engineer. This Item includes, but is not limited to, jointing of the pipe as shown on the Contract Drawings.

Work under this Item shall include the following:

- Furnish and install 24-inch reinforced concrete pipe to the lines, grades, and elevations shown on the Contract Drawings and as directed by the Engineer.
- Install joints, fittings, and other equipment as required.

Measurement shall be by the linear foot of installed pipe, measured along the centerline of the pipe from end to end, as determined by the Engineer.

Payment for this Item will be made for the quantities documented on the approved measurements, at the unit bid price per linear foot, which shall be full compensation for furnishing all labor, materials, equipment, and incidentals necessary to complete the work.

Item 23 –18" Reinforced Concrete Pipe

Under the unit price for this Item, the Contractor shall furnish and install 42 LF of 18-inch reinforced concrete pipe (RCP) in accordance with the technical specifications and to the lines, grades, and limits directed by the Engineer. This Item includes, but is not limited to, jointing of the pipe as shown on the Contract Drawings.

Work under this Item shall include the following:

- Furnish and install 18-inch reinforced concrete pipe to the lines, grades, and elevations shown on the Contract Drawings and as directed by the Engineer.
- Install joints, fittings, and other equipment as required.

Measurement shall be by the linear foot of installed pipe, measured along the centerline of the pipe from end to end, as determined by the Engineer.

Payment for this Item will be made for the quantities documented on the approved measurements, at the unit bid price per linear foot, which shall be full compensation for furnishing all labor, materials, equipment, and incidentals necessary to complete the work.

Item 24 –12" Reinforced Concrete Pipe

Under the unit price for this Item, the Contractor shall furnish and install 95 LF of 12-inch reinforced concrete pipe (RCP) in accordance with the technical specifications and to the lines, grades, and limits directed by the Engineer. This Item includes, but is not limited to, jointing of the pipe as shown on the Contract Drawings.

Work under this Item shall include the following:

- Furnish and install 12-inch reinforced concrete pipe to the lines, grades, and elevations shown on the Contract Drawings and as directed by the Engineer.
- Install joints, fittings, and other equipment as required.

Measurement shall be by the linear foot of installed pipe, measured along the centerline of the pipe from end to end, as determined by the Engineer.

Payment for this Item will be made for the quantities documented on the approved measurements, at the unit bid price per linear foot, which shall be full compensation for furnishing all labor, materials, equipment, and incidentals necessary to complete the work.

Item 25 –24" x 48" Concrete Box Culvert

Under the unit price for this Item, the Contractor shall furnish and install 453 LF 24-inch x 48-inch concrete box culvert in accordance with the technical specifications and to the lines, grades, and limits directed by the Engineer. This Item includes, but is not limited to, jointing of the box culvert as shown on the Contract Drawings.

Work under this Item shall include the following:

- Furnish and install 24-inch x 48-inch concrete box culvert to the lines, grades, and elevations shown on the Contract Drawings and as directed by the Engineer.
- Install joints, fittings, and other equipment as required.

Measurement shall be by the linear foot of installed box culvert, measured along the centerline of the box culvert from end to end, as determined by the Engineer.

Payment for this Item will be made for the quantities documented on the approved measurements, at the unit bid price per linear foot, which shall be full compensation for furnishing all labor, materials, equipment, and incidentals necessary to complete the work.

Item 26 –29" x 45" Elliptical Reinforced Concrete Pipe

Under the unit price for this Item, the Contractor shall furnish and install 49 LF 29-inch x 45-inch elliptical reinforced concrete pipe in accordance with the technical specifications and to the lines, grades, and limits directed by the Engineer. This Item includes, but is not limited to, jointing of the pipe as shown on the Contract Drawings.

Work under this Item shall include the following:

- Furnish and install 29-inch x 45-inch elliptical reinforced concrete pipe to the lines, grades, and elevations shown on the Contract Drawings and as directed by the Engineer.
- Install joints, fittings, and other equipment as required.

Measurement shall be by the linear foot of installed pipe, measured along the centerline of the pipe from end to end, as determined by the Engineer.

Payment for this Item will be made for the quantities documented on the approved measurements, at the unit bid price per linear foot, which shall be full compensation for furnishing all labor, materials, equipment, and incidentals necessary to complete the work.

Item 27 –8" Sanitary Sewer Pipe

Under the unit price for this Item, the Contractor shall furnish and install 527 LF of 8-inch sanitary sewer pipe in accordance with the technical specifications and to the lines, grades, and limits directed by the Engineer. This Item includes, but is not limited to, jointing of the pipe as shown on the Contract Drawings.

Work under this Item shall include the following:

- Furnish and install 8-inch sanitary sewer pipe to the lines, grades, and elevations shown on the Contract Drawings and as directed by the Engineer.
- Install joints, fittings, and other equipment as required.

Measurement shall be by the linear foot of installed pipe, measured along the centerline of the pipe from end to end, as determined by the Engineer.

Payment for this Item will be made for the quantities documented on the approved measurements, at the unit bid price per linear foot, which shall be full compensation for furnishing all labor, materials, equipment, and incidentals necessary to complete the work.

Item 28 –4' Diameter Sanitary Sewer Manhole

Under the unit price for this Item, Contractor shall furnish and install one (1) 4-foot inside diameter sanitary sewer manhole, complete with all necessary equipment, in accordance with the Contract Drawings and Specifications, and to the lines and grades directed by the Engineer. This Item shall include, but is not limited to, installation of steps, gaskets, sealants, frames and covers, pipe connections, backfilling, and surface restoration as required.

Work under this Item shall include the following:

- Furnish and install 4-foot diameter sanitary sewer manhole with all associated equipment in conformance with the details shown on the Contract Drawings and as directed by the Engineer.
- Provide all necessary excavation, dewatering, shoring, and backfill to complete the work.
- Install frame and cover to finished grade, adjusted as necessary.
- Coring, as necessary for connection of existing sanitary sewer pipes.

Measurement shall be by each manhole installed, complete and in place, as determined by the Engineer.

Payment for this Item shall be made at the unit bid price per each manhole, which shall constitute full compensation for furnishing and installing the precast manhole and all work incidental thereto, as described above.

ALLOWANCES

Item 29 – Allowance for Unforeseen Conditions

Allowance to be included and carried in the base bid. This Item includes the compensation for unforeseen conditions that the Contractor may encounter during construction. These conditions may include but are not limited to; hazardous material encountered within the limits of the proposed work, and other unforeseen conditions not shown on the Drawings including but not limited to additional work ordered by the Engineer for which specific items of work are not included within the Contract Documents.

Before permitting work to begin under any allowance, the Contractor shall provide an itemized written estimate of cost to the City for review and approval for the work to be performed.

Payment for this Item shall be an amount negotiated with the Contractor on a case-by-case need, based on receipted invoices and signed receipt, without charges for Contractor overhead and profit submitted for the actual work performed. This payment shall be considered full compensation for furnishing all labor, materials, and equipment required for such work completed to the satisfaction of the Engineer. No payments exceeding the approved amounts will be made by the City.

Item 30 – Allowance for Traffic Control via Police Detail

Allowance to be included and carried in the base bid. This Item includes the compensation for the cost charged to the Contractor by the City of East Providence Police Department for providing a police detail for traffic control, only in areas required by the Engineer, City of East Providence Public Works, City of East Providence Police Department and/or DOT. Excluded from this payment are any costs

associated with traffic control, including flaggers, where the Engineer, Police Department and/or DOT do not specifically require the use of a police detail.

Before permitting work to begin under any allowance, the Contractor shall provide an itemized written estimate of cost to the City for review and approval for the work to be performed.

Payment for this Item shall be an amount negotiated with the Contractor on a case-by-case need, based on receipted invoices presented by the Police Department to the Contractor for the work, without charges for Contractor overhead and profit submitted for the actual work performed. This payment shall be considered full compensation for furnishing all labor, materials, and equipment required for such work completed to the satisfaction of the Engineer. No payments exceeding the approved amounts will be made by the City.

END OF M&P SECTION

PLEASE COMPLETE THIS PAGE AND SUBMIT WITH YOUR BID

CITY OF EAST PROVIDENCE
DEPARTMENT OF PUBLIC WORKS - ENGINEERING DIVISION
REQUEST FOR PROPOSALS
EP24/25-026
STORMWATER QUALITY IMPROVEMENT RETROFITS
BID OPENING ~~FRIDAY~~WEDNESDAY, OCTOBER 22~~17~~, 2025, AT 10:00 AM

BID FORM

Acknowledgement of Addendum (if applicable)

Addendum Number	Signature of Bidder
_____	_____
_____	_____

The undersigned bidder, being familiar with local conditions affecting the cost of the work, hereby proposes to provide all necessary labor, materials, equipment and incidental items necessary to do all the work called for in the Specifications and in accordance with the Contract Documents.

The undersigned further understands that the lump sum bid includes all work including labor materials and equipment necessary to construct the project in accordance with the plans, details and specifications. Prevailing wages will apply to this project.

All prices must be written in words and figures. In case of discrepancy, the amount shown in words will govern.

At the time of the opening of bids, the bidder shall have inspected the sites of the work to familiarize themselves with the conditions relating to the work under the contract. Bidder hereby agrees to begin work within ten (10) days after the date of the NOTICE TO PROCEED, unless otherwise specified or permitted by the CITY, and shall complete the work under the provisions of the Contract no later than **November 13, 2026. All work shall be warranted for one year.**

Bid surety in the form of an original bid bond in the amount of five (5) percent of the total bid price must be submitted with each bid. The undersigned bidder further agrees to pay the premiums for the Surety Bond (Performance, Labor and Materials Payment Bonds) for which said premiums are to be included in the Bid Price.

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Payment requests shall be submitted on original AIA forms.

The City reserves the right to waive any informality to reject any or all bids if deemed to be in the best interest of the City.

Item No.	Unit	Estimated Quantity	Description	Bid Unit Price	Bid Price in Figures	Bid Price in Words
1	LS	1	Mobilization/Demobilization	-		
2	LS	1	Site Preparation	-		
3	LS	1	Demolition	-		
4	LS	1	Sand Filter	-		
5	LS	1	Dry Swale	-		
6	LS	1	Gravel Wetland	-		
7	LS	1	Storm Sewer Improvements	-		
8	LS	1	Sanitary Sewer Improvements	-		
9	LS	1	Dewatering	-		

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10	LS	1	Landscaping	-		
11	Gallon	21,000	Management of Dewatering Fluids			
12	Ton	789	Importation, Compaction, and Placement of Ordinary Borrow			
13	Ton	2700	Excess Soil Management			
14	Ton	32	Asphalt Paving			
15	Linear Feet	290	Concrete Sidewalk Restoration			
16	Each	1	4’ Diameter Precast Manhole			
17	Each	3	5’ Diameter Precast Manhole			
18	Each	1	6’ Diameter Precast Manhole			
19	Each	1	7’ Diameter Precast Manhole			
20	Each	6	Precast Double Grated Catch Basin			

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21	Linear Feet	169	36” Reinforced Concrete Pipe			
22	Linear Feet	11	24” Reinforced Concrete Pipe			
23	Linear Feet	42	18” Reinforced Concrete Pipe			
24	Linear Feet	95	12” Reinforced Concrete Pipe			
25	Linear Feet	453	24” x 48” Concrete Box Culvert			
26	Linear Feet	49	29” x 45” Elliptical Reinforced Concrete Pipe			
27	Linear Feet	527	8” Sanitary Sewer Pipe			
28	Each	1	4’ Diameter Sanitary Sewer Manhole			
29	ALLOW	1	Allowance for Unforeseen Conditions	-	$150,000	One Hundred Fifty Thousand Dollars
30	ALLOW	1	Allowance for Traffic Control via Police Detail	-	$5,000	Five Thousand Dollars
Total Base Bid						

PLEASE COMPLETE THIS PAGE AND SUBMIT WITH YOUR BID

BIDDING FIRM: _____

NUMBER & STREET: _____

CITY/STATE/ZIP:_____

PHONE NO: (_)_____FAX NO: ( )_____

EMAIL ADDRESS: _____

PRINT NAME:_____TITLE: _____

SIGNATURE:_____DATE: _____

SECTION 334000

STORM DRAINAGE UTILITIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and Division 1 Specification Sections, apply to this Section.

1.2 REFERENCES

A. All work specified in this Section shall conform to “Standard Specifications for Road and Bridge Construction” of the Rhode Island Department of Transportation, latest revision, herein referred to as “State Standards”.

B. Plans entitled “Stormwater Quality Improvement Retrofits” prepared by TRC Engineers, Inc. of East Providence, RI dated September 2025.

1.3 SUMMARY

A. This Section includes gravity-flow, nonpressure storm drainage outside the building, with the following components:
1. Pipe
2. Precast concrete drain manholes/outlet control structure:
3. Precast concrete catch basins
4. Subdrainage
5. PVC Barrier
6. Precast Concrete Headwall
7. Tideflex® ~~Gate~~ Check Valve or equivalent

1.4 DEFINITIONS

A. PVC: Polyvinyl chloride plastic.

B. HDPE: High Density Polyethylene.

C. RCP: Reinforced Concrete Pipe.

D. PE: Polyethylene

1.5 SUBMITTALS

A. The Contractor shall submit for approval, manufacturer’s printed recommendations for the storage, protection, handling, installation and testing of stormwater piping, fittings and appurtenances, which shall be strictly adhered to by the Contractor.

B. Shop Drawings: For the following:
   1. Manholes/Outlet Control Structure: Include plans, elevations, sections, details, and frames and covers. Include design calculations, and concrete design-mix report for cast-in-place manholes.
   2. Catch Basins: Include plans, elevations, sections, details, and frames, covers, and grates.
   3.
   4. Pipe of all materials, including precast culvert bend.
   5. PVC Barrier: Include specifications on materials, dimensions, and physical characteristics. Indicate manufacturer's recommended method for joining and bonding multiple sections.

C. Conformance Certificate: Each shipment of castings and concrete manholes, catch basins and outlet control structure shall be accompanied with the manufacturer's notarized certification and cylinder testing results that materials meet specified requirements.

D. Record Drawings: All installed underground utilities shall be designated on as-built drawings by the contractor of record and provided to the City and Engineer in AutoCad electrical format prior to completion of the project. All as-built drawings, (underground and above ground) shall be dimensioned from permanent benchmarks such as existing buildings and include depths at various points throughout the extent of the work, and invert elevations at all structures.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Protect pipe, pipe fittings, and seals from dirt and damage.

B. Handle catch basins, manholes and outlet control structures according to manufacturer's written rigging instructions.

C. Use only nylon-protected slings to handle pipe. The use of hooks or bare cables will not be permitted.

D. Avoid damage to castings from impact, abrasion, or corrosion during handling and storage.

E. Do not store PVC piping and fittings in the sunlight for extended periods of time. Store pipe in accordance with manufacturer's recommendations.

F. Ship rubber gaskets in cartons and store in a clean area away from grease, oil, ozone producing electric motors, heat and the direct rays of the sun.

G. Use all means necessary to protect precast concrete units and materials before, during and after installation and to protect the installed work and materials for all other trades.

H. In case of damage, immediately make all repairs and replacements necessary to the approval of the City's Representative at the Contractor's expense.

I. Pipe, pipe fittings, and other associated appurtenances damaged during deliver handling or storage shall be replaced at no additional cost to the City.

1.7 PROJECT CONDITIONS

A. The Contractor shall provide means of stormwater management during construction to control runoff and protect downstream areas from damage resulting from stormwater runoff.

B. The Contractor is responsible for any damage resulting from stormwater runoff during construction, including damage from flooding.

1.8 QUALITY CONTROL

A. All precast concrete shall be the product of a manufacturer who has demonstrated capability to produce precast concrete products of the quality specified. A manufacturer must be able to show that he has experienced personnel, physical facilities, established quality control procedures, and a management capability sufficient to execute the work of this contract. When requested by the City's Representative, the Contractor shall submit written evidence of the above requirements.

B. Experienced plant personnel shall closely supervise the manufacturing process, and daily records of concrete strength shall be kept and submitted to the City's Representative for control.

C. Provide at least one person who shall be present at all times during execution of this portion of the work and who shall be thoroughly trained and experienced in the installation of the precast concrete structures and shall direct all work performed under this Section.

PART 2 - PRODUCTS

2.1 PVC PIPE AND FITTINGS

A. PVC Profile Gravity Pipe and Fittings: ASTM F 794 pipe, with bell-and-spigot ends; ASTM D 3034 fittings, with bell ends.

B. The pipe and fittings shall be homogeneous throughout and free from visible cracks, holes, foreign inclusion or other injurious defects. The pipe shall be as uniform as commercially practical in color, capacity, density and other physical properties.

C. Joints shall be bell and spigot. For SDR-35 PVC pipe, the bell shall consist of an integral wall section with a solid cross section rubber ring factory-assembled, securely locked in place to prevent displacement. Joints shall conform to ASTM Standard D 3212. For SCH 40 PVC piping, joints shall be glued with PVC cement approved by the manufacturer.

D. All fittings and accessories shall have dimensions as recommended by the manufacturer and have bell and/or spigot configurations compatible with that of the pipe.

E. Pipe shall pass impact resistance test in accordance with ASTM D 2444 and minimum pipe stiffness test at 5% deflection in accordance with ASTM D 2412.

F. The normal length of 12-inch size and smaller pipe shall be 12.5 feet.

G. Pipe and fittings shall be manufactured in the United States of America and shall be accompanied by the manufacturer's certificate of compliance, in addition to meeting the performance tests specified hereinafter.

H. PVC pipe shall be SCH 40 where pipe has less than 2 feet of cover or as directed by the Owner's Representative.

I. PVC perforated pipe shall conform to ASTM/ANSI D 2729 or ASTM F 810. Perforations shall be 5/8" holes on 5" centers.

2.2 HIGH-DENSITY POLYETHYLENE PIPE AND FITTINGS

A. High-Density Polyethylene Pipe and fittings shall be ADS N-12 IB ST Smooth Interior Pipe, ADS N-12 IB ST High Capacity Large Diameter Pipe or approved equivalent. Joints shall be soil-tight and include a rubber gasket on the spigot end of the pipe. When installed into the bell end, the joint shall be sealed.

B. Pipe shall conform to AASHTO M294 (Type ‘S’) for the specified diameters and strength classes.

C. Pipe shall be rated to withstand H-20 Loading Criteria with 18” of cover.

2.3 REINFORCED CONCRETE PIPE

A. Reinforced-Concrete Pipe and Fittings: ASTM C 76 (ASTM C 76M), with bell-and-spigot ends and sealant joints with ASTM C 990 (ASTM C 990M), bitumen or butyl-rubber sealant.

B. Pipe shall conform to AASHTO M170 for the specified diameters and strength classes. The minimum cement content shall be 564 pounds per cubic yard.

C. Strength class of reinforced concrete pipe shall be Class III unless specified otherwise on the drawings.

D. Joint of reinforced concrete pipe shall be made with flexible watertight rubber gaskets and the remaining exterior void of the joint shall be sealed with Portland cement mortar.

2.4 FLEXIBLE PIPE COUPLINGS

A. Flexible Couplings: Elastomeric sleeve with stainless-steel shear ring and corrosion-resistant-metal tension band and tightening mechanism on each end as manufactured by Fernco Inc. or approved equivalent.

2.5 MANHOLE, CATCH BASIN AND OUTLET CONTROL STRUCTURE MATERIALS

A. Cement shall be Portland cement conforming to ASTM C150, Type III, high early strength.

B. Aggregate: shall conform to ASTM C330 and shall be graded, crushed stone with a resulting unit weight of concrete of up to one hundred fifty-five (155) pounds per cubic foot, and a minimum unit weight of not less than one hundred forty-eight (148) pounds.

C. Water: shall be clear and free of injurious and deleterious substances.

D. Concrete: shall have a minimum strength of 5000 psi at twenty-eight (28) days and a strength of 3000 psi at the time of form release.

E. During the process of manufacturing of the units not less than two (2) test cylinders shall be tested at time release of the form and two (2) at age twenty-eight (28) days.

F. All compression test cylinders shall be made, cured and stored in accordance with ASTM C31. Cylinders shall be tested in accordance with ASTM C39.

G. All concrete shall be air entrained as specified per RIDOT Standard Specifications.

H. Admixtures shall only be used after prior approval of the Engineer.

I. All reinforcing bars shall conform to the requirements of ASTM designation: A615, Grade 60.

J. Welded wire fabric shall conform to the requirements of ASTM designation: A185.

2.6 PRECAST CONCRETE MANHOLES, CATCH BASINS AND BRICK

A. Precast Concrete Manhole and Catch Basin sections shall be equal to that shown on the drawings and shall conform to ASTM Specifications C-478 and C-76 Class IV Wall “B”. The horizontal joints between sections shall be sealed using a flexible butyl resin sealant and shall conform to ASTM C-990. In addition, the horizontal joints on the inside and outside of the manhole and catch basin shall be sealed with a “Quick Plug” as manufactured by Parson or approved equal.

B. Brick shall conform to ASTM Specification C-32, except that the table therein is amended to provide that the required minimum compressive strength in pounds per square inch shall be for any individual brick 3,000 or 5,000 for the average of five bricks selected at random. The maximum absorption of water by five-hour boiling test shall not exceed 16% for any individual brick or 12% for the average of any five bricks selected at random.

C. Unless otherwise noted on the Drawings, manholes less than fifteen (15) feet deep shall have an interior diameter of 48 inches. Manholes fifteen (15) feet and deeper shall have an interior diameter of 60 inches unless otherwise noted. Manholes with an interior diameter of 72 inches shall be utilized where indicated on the Drawings. All catch basins shall have an interior diameter of 48 inches unless specified otherwise.

D. Openings for pipe insertions shall be round and shall be precast or cored only. The diameter of the opening shall be adequate to install a rubber boot seal. The cored or precast opening shall maintain a minimum undisturbed distance of 6” from manhole section joints. Flexible rubber boot shall be neoprene with stainless steel clamps and bands.

E. Weirs for diversion manholes may be constructed with concrete block joined with mortar or cast into the structure. Contractor shall form each weir as depicted on the plans. Provide a watertight seal with no gaps between weir wall and structure wall. Weirs shall be connected to structure wall using epoxy coated steel rebar reinforcement.

2.7 MANHOLE AND ACCESS RISER FRAMES AND COVERS

A. Manhole and access riser Frames and Covers shall be cast iron and conform to the details on the drawings. Cast iron shall conform to ASTM A-48, Class 25. The underside of the cover and upper side of lip frame must present parallel plane surfaces, and at these points of contact, the frames and covers shall be machined to prevent covers from rocking in the frames under traffic.

B. Covers shall bear evenly in the frame and both frame seats and covers shall be accurately fabricated so that covers are interchangeable for use with any and all frames. Where indicated, frames and covers shall be watertight, and locked. The sizes and weights (medium duty, heavy duty, etc.) are shown on the detail sheets for special manholes.

C. Mortar shall consist of one part cement and two parts clean sand. No lime shall be used.

D. Covers shall have a non-slip surface and shall have the word “DRAIN”, inscribed.

E. Frames and covers shall be installed on the manholes and access riser as indicated on the drawings. They shall be well bedded and encased in cement mortar and accurately set to the grades indicated or as directed. Red clay brick with cement mortar shall be used to adjust grade of frame and cover. One half inch of cement mortar plaster cast shall be applied to exterior of red clay bricks.

2.8 CATCH BASIN FRAMES AND GRATES

A. Catch Basin Frames and Grates shall be cast iron and conform to the details on the drawings. Cast iron shall conform to ASTM A-48, Class 25. The underside of the grate and upper side of lip frame must present parallel plane surfaces, and at these points of contact, the frames and grates shall be machined to prevent grates from rocking in the frames under traffic.

B. Grate shall bear evenly in the frame and both frame seats and grates shall be accurately fabricated so that grate is interchangeable for use with any and all catch basin frames.

C. Mortar shall consist of one part cement and two parts clean sand. No lime shall be used.

D. Gratings shall have a non-slip surface.

E. Gratings shall be installed on the catch basins as indicated on the drawings. They shall be well bedded and encased in cement mortar and accurately set to the grades indicated or as directed. Red clay brick with cement mortar shall be used to adjust frame and grate. One half inch of cement mortar plaster cast shall be applied to exterior of red clay bricks.

2.9 MANHOLE STEPS

A. Manhole steps shall be manufactured of Copolymer Polypropylene plastic with ½” grade 50 steel reinforcement.

B. Steps shall conform to ASTM D-4101 under Type II.

C. The capacity of each step shall be 1000 lb. at 5-1/8 inch distance from wall and 1500 lb. at 4-inch distance from wall.

D. Steps shall measure 12 inches wide (min.) and extend 5-1/8 inches from wall.

E. Manhole steps shall be provided in each base, riser and top section and shall be integrally cast in each; 12 inches O.C.

2.10 GEOTEXTILES

A. Refer to Section 310000 for requirements regarding geotextile filter fabrics.

2.11 PRECAST CONCRETE HEADWALL

A. For pipes greater than 8” in diameter: headwall shall be in accordance with Section 709 of the RI Standard Specifications and per dimensions listed on the details.

2.12 IDENTIFICATION

A. Underground-type line markers for non-metallic pipelines: manufacturer's standard permanent detection tape, bright-colored, continuous printed polyethylene tape with a metallic core for each detection of non-metallic underground installations, intended for direct-burial service; not less than 6" wide x 4 mils thick. Provide green detection tape with black printing reading "Caution Drain Line Buried Below" as manufactured by Seton or approved equivalent.

2.13 ~~TIDEFLEX®~~ STORM DRAIN CHECK VALVE

A. ~~Tideflex c~~Check valve shall be a Tideflex Series TF-1 or equivalent to be fitted on a 29" x 45" elliptical reinforced concrete pipe.

PART 3 - EXECUTION

3.1 EARTHWORK

A. Excavation, trenching, and backfilling are specified in Section 310000 "Earthwork."

3.2 PIPE INSTALLATION

A. Reinforced Concrete Pipe: The method of joining reinforced concrete pipe sections shall be such that the ends are fully entered, and the inner surfaces are reasonably flush and even. Joints shall be made with rubber gaskets and Portland Cement grout. The completed joints shall be protected against rapid drying by suitable covering material.

B. Use only nylon-protected slings to handle pipe. The use of hooks or bare cables will not be permitted.

C. PVC Piping: No machinery shall directly contact the PVC pipe to push the pipe into place. The pipe shall be pushed into place by hand. The use of a hammer or mallet is permitted, with the use of a board to shield the end of the pipe being struck by the hammer. The pipe shall not be directly contacted with a hammer or mallet. Any pipe damaged while being pushed into place or while being laid in the trench shall be removed from the site and replaced at the expense of the Contractor.

D. Pipe shall be inspected before any backfill is placed. Any pipe determined by the City's Representative to be out of alignment, unduly settled, or damaged shall be taken up and re-laid or replaced at no additional cost to City.

E. General Locations and Arrangements: Drawing plans and details indicate location and arrangement of underground storm drainage piping. Install piping as indicated, following piping manufacturer's written instructions.

F. Install piping beginning at low point, true to grades and alignment indicated with unbroken continuity of invert. Place bell ends of piping facing upstream. Install gaskets, seals, sleeves, and couplings according to manufacturer's written instructions for use of lubricants, cements, and other installation requirements.

G. If conflicts between utilities, the Contractor shall stop work on the utilities, contact the Engineer, and await direction from the Engineer.

H. Install piping with 36-inch minimum cover unless otherwise specified on the Drawings.

I. Install piping with a minimum slope as specified on Drawings.

J. Install PVC piping according to ASTM D 2321, ASTM F 1668, and manufacturer's recommendations.

K. Install reinforced-concrete piping according to ASTM C 1479 and manufacturer's recommendations.

3.3 MANHOLE INSTALLATION

A. Excavation and backfilling requirements for installation of manhole and catch basin structures shall be in accordance with the requirements as specified in Section 310000, Earthwork.

B. Manhole and catch basin barrel and cone sections shall be set so as to be vertical and in true alignment.

C. Where required for future connections, openings shall be cast in the manholes and catch basins at the proper location and shall be sealed with watertight brick bulkheads or plugs.

D. The inverts of all manholes shall be constructed of brick and formed to the details shown on the contract drawings.

E. Concrete Base Slabs for manholes and catch basins shall have a full thickness of 12 inches shall extend 6 inches beyond the outside walls.

F. Inverts: Where pipe alignment permits, and where directed by the City's Representative, the pipe shall be continued through the manhole and the top half carefully and evenly cut away. Where changes in alignment occur, unless otherwise authorized by the Engineer, inverts shall be constructed of brick and mortar with a smooth flow line and an even curve in accordance with the plans.

G. Joints: Pipe joints into manholes and catch basins shall be constructed in accordance with the details shown on the plans. Complete details of the boot manufacture and installation shall be submitted for approval. All areas around pipes passing through walls of manholes and catch basins shall be completely filled with waterproof cement mortar to tightly fill any space through which water can pass. All manhole and catch basin joints between sections shall be sealed with 1" diameter Butyl rubber sealant with hydraulic cement and coated with bitumastic sealant on the exterior.

H. Bricks shall be laid in a workmanlike manner, true to line, and the joints shall be carefully struck and pointed on the inside. Bricks shall be thoroughly wet when laid and each brick shall be laid in mortar so as to form full bed, end and side joints in one operation. The outside of the brickwork shall be neatly plastered with ½" layer of cement mortar as the work progresses. The brickwork shall be satisfactorily bonded to the concrete and cast iron frame. No brick masonry shall be laid in water, or any water allowed to rise on the brickwork until the masonry has set for at least 24 hours.

I. Damp-proofing: All exterior surfaces of manholes and catch basins shall receive at least one coat of asphalt damp-proofing.

3.4 PRECAST CONCRETE HEADWALL INSTALLATION

A. For pipes 8” or smaller in diameter: headwall shall be installed in accordance with manufacturer’s recommendations.

B. For pipes greater than 8” in diameter: headwall shall be installed in accordance with Section 709 of the RI Standard Specifications.

3.5 TIDEFLEX® CHECK VALVE OR EQUIVALENT INSTALLATION

A. Check valve installation and maintenance shall be performed in accordance with manufacturer’s recommendations. ~~For installation, refer to the Red Valve Tideflex Series TF-1/ Series TF-2 Check Valves Installation, Operation, and Maintenance Manual~~.

3.6 CLOSING ABANDONED STORM DRAINAGE SYSTEMS

A. Abandoned Piping: Close open ends of abandoned underground piping indicated to remain in place. Include closures strong enough to withstand hydrostatic and earth pressures that may result after ends of abandoned piping have been closed. Use procedure below:
   1. Close open ends of piping with threaded metal caps, plastic plugs, or other acceptable methods suitable for size and type of material being closed. Do not use wood plugs.

B. Abandoned Manholes and Structures: Excavate around manholes and structures as required and use one procedure below:
   1. Remove manhole or structure and close open ends of remaining piping.
   2. Remove top of manhole or structure down to at least 48 inches below final grade. Fill manhole below this point with gravel borrow and compact to 92%
   3. Backfill to grade according to Section 310000 - Earthwork.

3.7 IDENTIFICATION

A. Materials and their installation are specified in Section 310000 - Earthwork. Arrange for installation of green warning tape directly over piping and at outside edge of underground structures.
   1. Use detectable warning tape over nonferrous piping and over edges of underground structures.

3.8 FIELD QUALITY CONTROL

A. Inspect interior of piping to determine whether line displacement or other damage has occurred. Inspect after approximately 24 inches of backfill is in place, and again at completion of Project.
   1. Defects requiring correction include the following:
      a. Alignment: Less than full diameter of inside of pipe is visible between structures.

b. Deflection: Flexible piping with deflection that prevents passage of ball or cylinder of size not less than 92.5 percent of piping diameter.
c. Crushed, broken, cracked, or otherwise damaged piping.
d. Infiltration: Water leakage into piping.
e. Exfiltration: Water leakage from or around piping.

2. The Contractor shall, at his own expense, replace defective piping using new materials, and repeat inspections until defects are within allowances specified.
3. The Contractor shall repair any defects or corrections required by the Owner's Representative.

3.9 CLEANING

A. The Contractor shall clean interior of piping and structures of dirt, debris, and superfluous materials prior to commencing work, during construction and prior to acceptance of stormwater drainage system.

B. The Contractor shall also clean downstream portions of the stormwater conveyance system which recovered silt deposits from the construction activity.

3.10 RECORD DRAWINGS

A. All installed underground utilities shall be designated on as-built drawings by the contractor of record and provided to the Owner and Engineer in AutoCAD electrical format prior to completion of the project. All as-built drawings, (underground and above ground) shall be dimensioned from permanent benchmarks such as existing buildings and include depths at various points throughout the extent of the work, and invert elevations at all structures.

END OF SECTION

STORMWATER QUALITY IMPROVEMENT RETROFITS

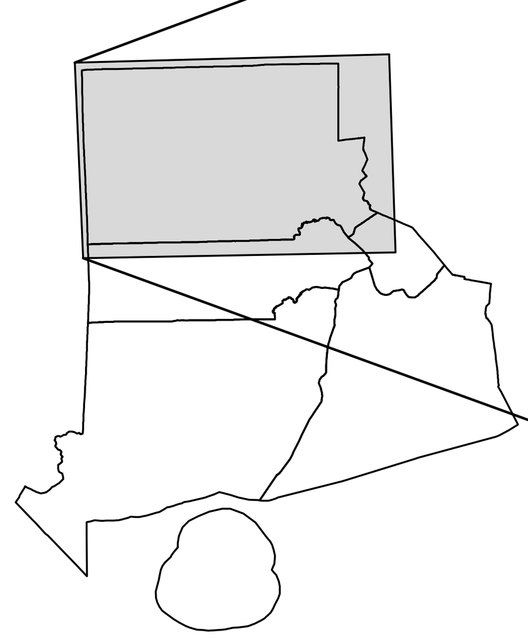
LOCUST ST., NARRAGANSETT AVE & MIDDLE ST.
EAST PROVIDENCE, RHODE ISLAND

PREPARED FOR: CITY OF EAST PROVIDENCE
145 TAUNTON AVENUE
EAST PROVIDENCE, RHODE ISLAND 02914

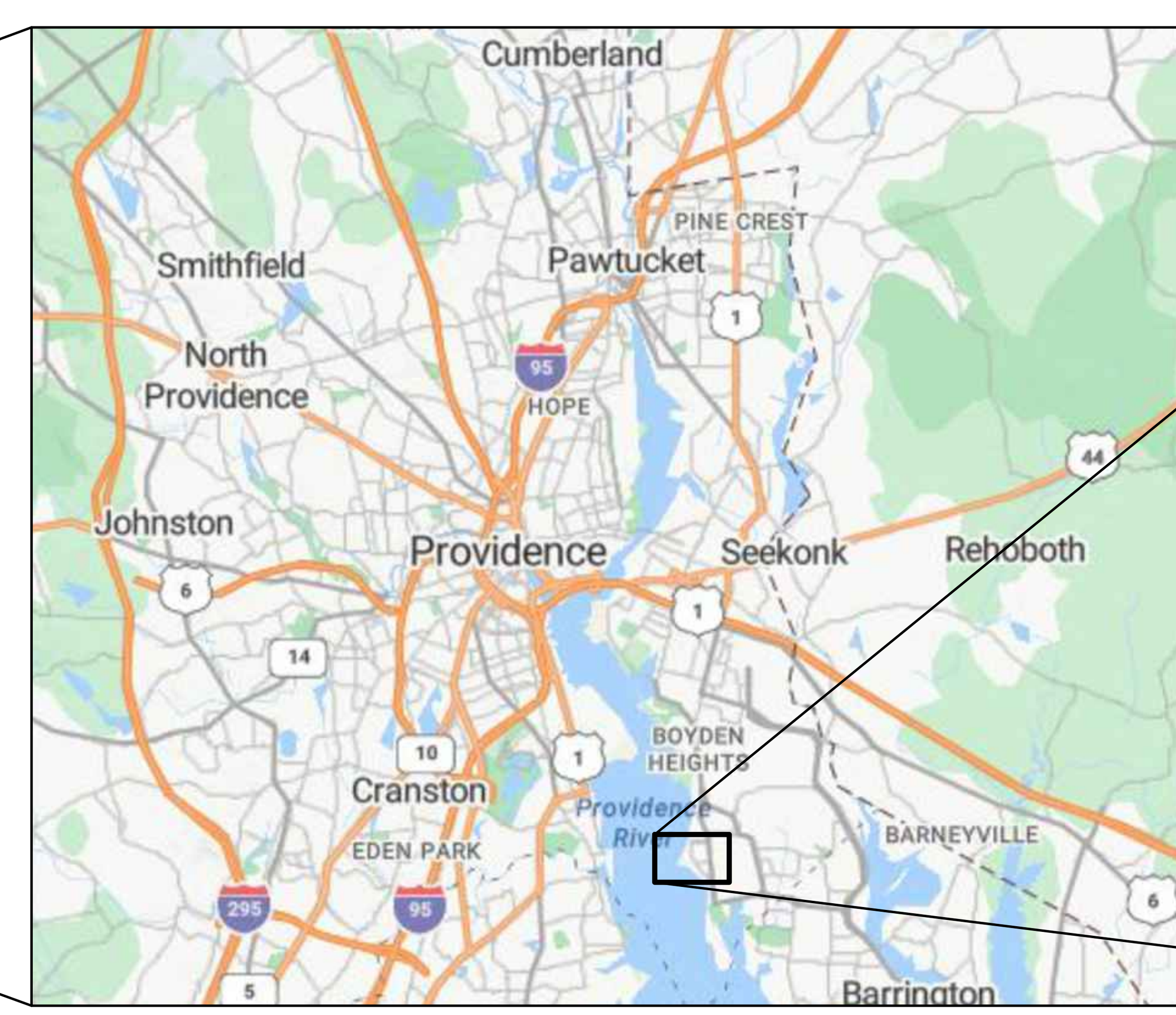
PREPARED BY: TRC ENGINEERS, INC.
401 WAMPANOAG TRAIL, 3RD FLOOR
EAST PROVIDENCE, RI 02915

DATE: SEPTEMBER 2025

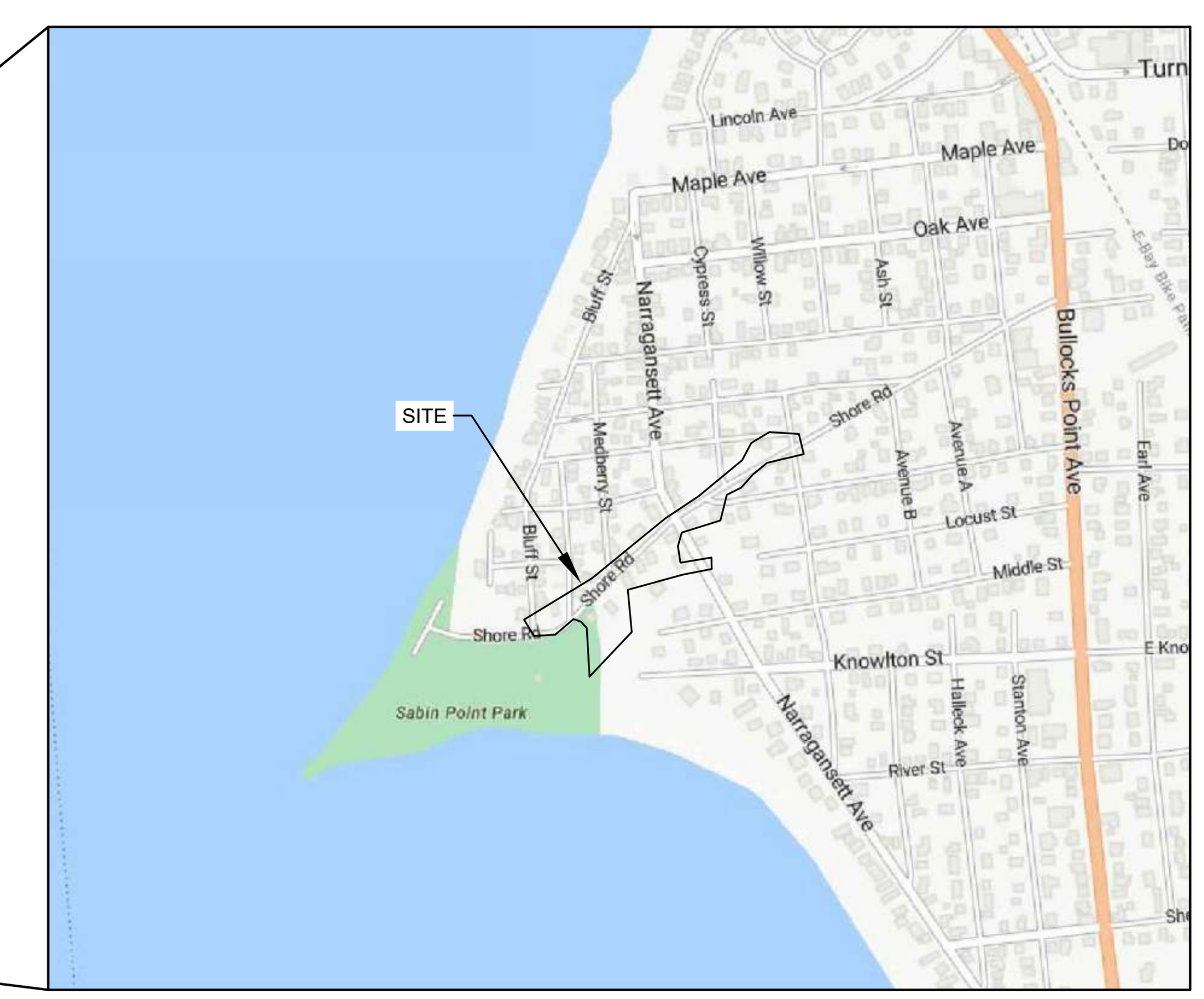
AARON CHIN-HUI TING
No. 15252
REGISTERED PROFESSIONAL ENGINEER
CIVIL
09-22-2025



RHODE ISLAND



PROVIDENCE COUNTY



SITE LOCATION

INDEX OF DRAWINGS		
SHEET NUMBER	DRAWING NUMBER	DRAWING TITLE
1	--	COVER SHEET
2	N-1	GENERAL NOTES
3	EX-1	EXISTING CONDITIONS PLAN
4	C-1	PROPOSED CONDITIONS PLAN - 1
5	C-2	PROPOSED CONDITIONS PLAN - 2
6	SP-1	STORMWATER PROFILES - 1
7	SP-2	STORMWATER PROFILES - 2
8	EC-1	SOIL EROSION & SEDIMENT CONTROL PLAN - 1
9	EC-2	SOIL EROSION & SEDIMENT CONTROL PLAN - 2
10	D-1	EROSION CONTROL DETAILS
11	D-2	CIVIL DETAILS
12	D-3	CIVIL DETAILS
13	D-4	CIVIL DETAILS
14	L-1	LANDSCAPE PLAN 1
15	L-2	LANDSCAPE PLAN 2
16	L-3	LANDSCAPE DETAILS

ISSUED FOR BID

TRC
401 Wampanoag Drive, 3nd Floor
East Providence, RI 02915
Phone:(401) 434-5560
www.trccompanies.com

GENERAL NOTES:

1. SOILS RESOURCES DATA FROM USGS NRCS WEB SOIL SURVEY.
2. LIDAR DATA FROM RHODE ISLAND GEOGRAPHIC INFORMATION SYSTEM (RIGIS).
3. BASE PLAN REFERENCES "TOPOGRAPHIC SURVEY OF A DRAINAGE AREA BETWEEN LOCUST STREET AND SABIN POINT PARK MAP 312 BLOCK 65 PARCELS 7 AND 7.1, EAST PROVIDENCE, RHODE ISLAND", SHEET 1 OF 1, DATED MARCH 29, 2016 (REVISED JANUARY 18, 2024), PREPARED BY THE CITY OF EAST PROVIDENCE DEPARTMENT OF PUBLIC WORKS – ENGINEERING DIVISION. PROPERTY LINES ARE APPROXIMATE AND TAKEN FROM THE ASSESSOR MAPS.
4. THE HORIZONTAL DATUM REFERENCES NAD83 (1986) RHODE ISLAND STATE PLANE COORDINATES. COORDINATES WERE ESTABLISHED BY MEANS OF RESECTION. THE RESECTION FIGURE IS NOT IDEAL AND RESULTS COULD NOT BE CHECKED BY OTHER MEANS. COORDINATES SHOULD NOT BE GIVEN SUBSTANTIAL WEIGHT. VERTICAL DATUM REFERENCES THE CITY OF EAST PROVIDENCE MEAN HIGH WATER VERTICAL DATUM (EPMHW). LEVELS WERE RUN ON NGVD 29 AND CONVERTED BY THE FOLLOWING RELATIONSHIP. (ELEVATION EPMHW = NGVD29–2.35').
5. A REVIEW OF FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NUMBER 44007C0338H, CITY OF EAST PROVIDENCE, COUNTY OF PROVIDENCE, STATE OF RHODE ISLAND, DATED SEPTEMBER 18, 2013, DEPICTS THE SUBJECT PARCEL(S) TO LIE WITHIN ZONES "VE (EL 15)", DESCRIBED AS "COASTAL FLOOD ZONE WITH VELOCITY HAZARD (WAVE ACTION), BASE FLOOD ELEVATIONS DETERMINED AND ZONE "X", DESCRIBED AS AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD.
6. PROVIDENCE RIVER TIDAL WATERS ADJACENT TO THE SITE ARE CRMC TYPE 2 WATERS.

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL CALL "DIG SAFE" AT 1-888-344-7233 AT LEAST 72 HOURS PRIOR TO EXCAVATION. WATER AND SEWER MAY BE NON-MEMBER UTILITIES AND THE CONTRACTOR MAY NEED TO CONTACT SEPARATELY.
2. THE CONTRACTOR SHALL NOTIFY ALL APPROPRIATE AGENCIES AND UTILITY COMPANIES, IN WRITING, A MINIMUM OF 72 HOURS PRIOR TO ANY CONSTRUCTION WITHIN 15 FEET OF A UTILITY LINE.
3. LIMITS OF DISTURBANCE (LOD) HAVE BEEN SET ON THE DRAWINGS. HOWEVER, THESE MAY BE EXTENDED OR REDUCED IN ORDER TO MEET FIELD CONDITIONS. THE ENGINEER SHALL REVIEW AND APPROVE ANY CHANGE IN THE LOD PRIOR TO ANY ALTERATION.
4. THE CONTRACTOR SHALL, AS SPECIFIED BY THE ENGINEER, ESTABLISH "CONSTRUCTION LIMITS" ON THE SITE BY ACCEPTABLE VISIBLE MARKERS. ALL WORK AND EQUIPMENT SHALL BE CONFINED TO WITHIN THESE LIMITS, UNLESS OTHERWISE SPECIFICALLY AUTHORIZED.
5. NO CHANGES ARE TO BE MADE UNLESS AUTHORIZED BY THE ENGINEERS AND/OR APPLICANT/OWNER.
6. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL SAFETY CODES, REGULATIONS, LEGAL REQUIREMENTS, PERMIT CONDITIONS, ETC.
7. THE CONTRACTOR SHALL TAKE ADEQUATE PRECAUTIONS TO PROTECT ALL WALKS, STREETS, PAVEMENTS, HIGHWAY GUARDS, CURBING, EDGING, TREES AND PLANTINGS, ETC. ON OR OFF THE PREMISES, AND SHALL REPAIR AND REPLACE OR OTHERWISE MAKE GOOD AT HIS/HER OWN EXPENSE AS REQUIRED BY THE ENGINEER ANY ITEMS DAMAGED AS A RESULT OF THE CONTRACTOR'S WORK.
8. THE CONTRACTOR SHALL DISPOSE OF ALL RUBBISH, AND DEBRIS IN ACCORDANCE WITH THE SPECIFICATIONS AND ALL APPLICABLE CODES AND REGULATIONS. THE CONTRACTOR SHALL LEAVE THE PROJECT SITE IN SAFE AND CLEAN CONDITION UPON COMPLETION OF THE SITE CLEARANCE WORK.
9. THE CONTRACTOR SHALL PROVIDE ADEQUATE BRACING AND SHORING OF EXCAVATIONS IN ACCORDANCE WITH THE REQUIREMENTS OF ALL GOVERNING CODES AND REGULATIONS.
10. CONSTRUCTION SEQUENCE SHALL BE COORDINATED TO MINIMIZE DISTURBANCE OF EXISTING CONDITIONS AND OPERATIONS.
11. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION, AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.
12. ALL EXISTING PIPING AND STRUCTURES EXPOSED DURING EXCAVATION SHALL BE ADEQUATELY SUPPORTED, BRACED, OR OTHERWISE PROTECTED DURING CONSTRUCTION ACTIVITIES.
13. ALL NECESSARY FEES AND CONSTRUCTION PERMITS SHALL BE OBTAINED AND PAID FOR BY THE CONTRACTOR.
14. WORK WITHIN PUBLIC WAYS SHALL COMPLY WITH APPLICABLE MUNICIPAL AND STATE REQUIREMENTS.
15. THE CONTRACTOR SHALL USE DESIGNATED LOCATIONS WITHIN THE ESTABLISHED LIMIT OF WORK TO ACCESS THE SITE.
16. CONTRACTOR IS RESPONSIBLE FOR REVIEWING, UNDERSTANDING, AND COMPLYING WITH ALL PERMIT CONDITIONS.

SEDIMENTATION & EROSION CONTROL NOTES:

1. EROSION CONTROL MEASURES SHALL BE INSTALLED AS SHOWN HEREIN, AS REQUIRED BY THE STATE OR LOCAL JURISDICTION OR AS DIRECTED BY THE ENGINEER.
2. PERIMETER SOIL AND EROSION CONTROLS SHALL BE PLACED PRIOR TO ANY CONSTRUCTION ACTIVITIES WITHIN THE TRIBUTARY WATERSHED. CONTRACTOR TO NOTIFY THE ENGINEER AT LEAST 48 HOURS PRIOR TO ANY CONSTRUCTION ACTIVITIES. ALL SOIL AND EROSION CONTROLS SHALL BE CHECKED AND REPAIRED AS NECESSARY.
3. EROSION CONTROL MEASURES SHALL BE INSPECTED WEEKLY AND WITHIN 24 HOURS OF EACH STORM EVENT GREATER THAN 0.25" OF RAINFALL. ALL DAMAGED SILT FENCES SHALL BE REPAIRED AND DAMAGED STRAW WATTLES REPLACED. ACCUMULATED SEDIMENT SHALL BE STOCKPILED FOR LATER REUSE.
4. THE CONTRACTOR SHALL PHASE SITE CONSTRUCTION TO MINIMIZE THE AREA OF DISTURBED EARTH OPEN TO THE ELEMENTS AT ANY GIVEN TIME. THIS SHALL BE ACHIEVED BY THE FOLLOWING METHODS OR OTHER BEST MANAGEMENT PRACTICES (BMP'S):
   - 4.A. LOAMING AND SEEDING CUT SLOPES IMMEDIATELY UPON COMPLETION OF SUBGRADE PREPARATION.
   - 4.B. PLACING AND COMPACTING PAVEMENT GRAVEL BASE AND SUBBASE IMMEDIATELY UPON COMPLETION OF SUBGRADE PREPARATION.
   - 4.C. LIMITING STRIPPING AND STOCKPILING OF LOAM TO AREAS SLATED FOR IMMEDIATE CONSTRUCTION AND STABILIZATION (I.E., PLACEMENT OF GRAVELS, LOAM AND SEED, EROSION CONTROL MATTING, ETC.).
5. FILL MATERIAL SHALL BE FREE FROM STUMPS, WOOD, ROOTS, ETC.
6. SOIL STOCKPILES SHALL BE LOCATED AND MANAGED AS SHOWN HEREIN, AS DESCRIBED IN THE PERMIT APPLICATIONS AND AS SPECIFIED BY THE ENGINEER.
7. ALL SOIL STOCKPILES SHALL BE SURROUNDED BY EROSION CONTROL BARRIERS REGARDLESS OF THEIR DURATION OF EXPOSURE. SOILS TO BE STOCKPILED FOR A PERIOD OF MORE THAN 30 DAYS SHALL BE PROTECTED WITH A TEMPORARY SEEDING MATTING OR OTHER ACCEPTABLE MEANS OF PREVENTING EROSION. TEMPORARY SEEDING OF STOCKPILES SHOULD BE COMPLETED WITHIN 15 DAYS OF THE FORMATION OF THE STOCKPILE.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING EROSION CONTROL MEASURES TO PREVENT OFF-SITE TRACKING OF EARTH, SEDIMENT AND DEBRIS.
9. CONTRACTOR TO BEGIN PERMANENT AND TEMPORARY STABILIZATION OF ALL CUT AND FILL SLOPES WITHIN 72 HOURS OF THEIR COMPLETION.
10. UPON COMPLETION AND ACCEPTANCE OF SITE PREPARATION AND INITIAL INSTALLATION OF EROSION, RUNOFF, AND SEDIMENT CONTROLS AND TEMPORARY POLLUTION PREVENTION MEASURES, THE OPERATOR SHALL INITIATE APPROPRIATE TEMPORARY OR PERMANENT STABILIZATION PRACTICES DURING ALL PHASES OF CONSTRUCTION ON ALL DISTURBED AREAS AS SOON AS POSSIBLE, BUT NOT MORE THAN FOURTEEN (14) DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT AREAS HAS TEMPORARILY OR PERMANENTLY CEASED. ANY DISTURBED AREA THAT WILL NOT HAVE ACTIVE CONSTRUCTION ACTIVITY OCCURRING WITHIN 14 DAYS MUST BE STABILIZED USING THE CONTROL MEASURES DEPICTED IN THE SESC SITE PLANS, IN ACCORDANCE WITH THE RI SESC HANDBOOK, AND PER MANUFACTURER PRODUCT SPECIFICATIONS.
11. ALL DISTURBED AREAS SHALL HAVE A MINIMUM OF FOUR INCHES OF LOAM PLACED BEFORE BEING PERMANENTLY SEEDED AND MULCHED. EXISTING LOAM TO BE REUSED, SHALL BE SCREENED TO REMOVE DEBRIS PRIOR TO REUSE. LOAM FROM AN OFF SITE BORROW SOURCE SHALL BE SAMPLED AND APPROVED FOR USE BY THE ENGINEER PRIOR TO ITS DELIVERY TO THE SITE.
12. ALL CUT SLOPES CONSTRUCTED AT A SLOPE OF 2H:1V OR STEEPER SHALL BE STABILIZED USING EROSION CONTROL BLANKETS OR TURF REINFORCEMENT MATS; NORTH AMERICAN GREEN C125BN OR APPROVED EQUALS. ALL FILL SLOPES CONSTRUCTED AT A SLOPE OF 2H:1V OR STEEPER SHALL BE STABILIZED USING NORTH AMERICAN GREEN C125BN OR APPROVED EQUAL.
13. EROSION CONTROL MEASURES SHALL BE REMOVED WHEN THE DISTURBED AREA IS STABILIZED OR AS SPECIFIED BY THE ENGINEER. DISTURBED AREA RESULTING FROM THE SILT FENCE REMOVAL OPERATION SHALL BE PERMANENTLY SEEDED. ALL ACCUMULATED SEDIMENT SHALL BE STOCKPILED FOR LATER REUSE.
14. TEMPORARY SEEDING SHALL BE USED WHERE VEGETATIVE COVER IS REQUIRED FOR SIX (6) MONTHS OR LONGER ON DISTURBED SOIL AREAS. SUCH AREAS SHALL BE SEEDED IF THE SOILS WILL BE EXPOSED FOR MORE THAN 30 DAYS. RAPIDLY GROWING ANNUAL GRASSES WILL BE UNIFORMLY APPLIED AT THE RATE ASSOCIATED WITH HYDRAULIC APPLICATION (HYDROSEEDING). A HYDRAULICALLY APPLIED MATERIAL, SUCH AS GEOPERM™, SHALL BE APPLIED TO SOME DISTURBED AREAS IN LIEU OF HYDRO-SEED. THE SITE SHALL BE CHECKED PERIODICALLY TO ASSESS THE GROWTH OF THE PLANTS. IF SEEDING FAILS TO GROW, THE AREA SHALL BE RE-ESTABLISHED TO PROVIDE ADEQUATE EROSION CONTROL. THE SEED MIXTURE TO BE USED FOR TEMPORARY STABILIZATION ARE SHOWN HEREIN.
15. PERMANENT SEEDING SHALL BE USED ON AREAS WHERE PERMANENT VEGETATIVE COVER IS NEEDED TO STABILIZE THE SOIL AND REDUCE EROSION AND SEDIMENTATION. RAPIDLY GROWING ANNUAL GRASSES SHALL BE UNIFORMLY APPLIED AT THE RATE ASSOCIATED WITH HYDRAULIC APPLICATION (HYDROSEEDING). THE SEED MIXTURE TO BE USED FOR PERMANENT STABILIZATION ARE SHOWN HEREIN.
16. SEEDING SHALL OCCUR PRIOR TO OCTOBER 15TH. AREAS THAT DO NOT HAVE ADEQUATE VEGETATIVE STABILIZATION BY NOVEMBER 15TH, MUST BE STABALIZED THROUGH THE USE OF NON- VEGETATIVE EROSION CONTROL MEASURES. AREAS SEEDED BETWEEN MAY 15TH AND AUGUST 15TH SHALL BE COVERED WITH STRAW MULCH. DURING THESE MONTHS, TEMPORARY AND PERMANENT SEEDED AREAS SHALL BE MULCHED IMMEDIATELY FOLLOWING SEEDING.

SEDIMENTATION & EROSION CONTROL NOTES (CONTINUED):

17. TREATMENT CHEMICALS SHALL NOT BE APPLIED.
18. EROSION CONTROL DEVICES SUCH AS STRAW WATTLES AND SILT FENCE SHALL BE INSTALLED AT LOCATIONS SHOWN HEREIN. STRAW WATTLES SAHLL BE STAKED AT TOP OF CUT SLOPES TO DIVERT STORMWATER RUNOFF.
19. DUST FROM THE SITE SHALL BE CONTROLLED BY USING COVERED TRUCKS. WETTING EXPOSED SOIL AREAS, SEEDING, INSTALLING WIND SCREENS AND/OR BARRIERS, APPLYING SOIL STABILIZATION AGENTS, MINIMIZING UNNECESSARY TRANSFERS AND DISTURBANCES OF EARTH MATERIALS AND ON-GOING CONSTRUCTION CLEAN-UP. SEVERAL APPLICATIONS PER DAY MAY BE NECESSARY DEPENDING UPON WEATHER CONDITIONS AND WORK ACTIVITY. CALCIUM CHLORIDE MAY ALSO BE USED TO CONTROL DUST INSTEAD OF WET SUPPRESSION WHEN FREEZING CONDITIONS EXIST.

UTILITIES NOTES:

1. EXISTING UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE. ADDITIONAL UTILITIES MAY EXIST THAT ARE NOT SHOWN. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING DRAINAGE AND UTILITIES BOTH UNDERGROUND AND OVERHEAD BEFORE EXCAVATION BEGINS. IT IS THE CONTRACTORS RESPONSIBILITY TO CONTACT DIGSAFE, NOTIFY ALL NON-MEMBER UTILITY COMPANIES AND ENSURE THAT ALL UTILITIES HAVE BEEN MARKED PRIOR TO COMMENCING WORK. ANY DAMAGE TO EXISTING UTILITIES MARKED IN THE FIELD, OR AS A RESULT OF FAILING TO CONTACT THE APPROPRIATE UTILITY COMPANY, SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE OWNER.
2. BEFORE STARTING CONSTRUCTION, THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR MAKING ALL NECESSARY ARRANGEMENTS AND FOR PERFORMING ANY NECESSARY WORK INVOLVED IN CONNECTION WITH THE DISCONTINUANCE OR JURISDICTION OF THE UTILITY COMPANIES, SUCH AS ELECTRICITY, TELEPHONE, WATER, GAS AND ANY SYSTEM OR SYSTEMS WHICH WILL BE AFFECTED BY THE WORK TO BE PERFORMED UNDER THIS CONTRACT.
3. UNLESS OTHERWISE NOTED OR APPROVED BY THE ENGINEER, THE CONTRACTOR SHALL MAINTAIN ALL EXISTING UTILITIES.
4. IF REQUIRED, OVERHEAD LINES SHALL BE RELOCATED BY THE UTILITY COMPANY AT THE CONTRACTOR'S EXPENSE.
5. THE CONTRACTOR SHALL EXERCISE EXTREME CARE WHEN EXCAVATING NEAR AND BACKFILLING IN THE VICINITY OF EXISTING UTILITIES, INCLUDING THE USE OF HAND EXCAVATION WHERE APPROPRIATE.
6. ALL EXISTING PIPING AND STRUCTURES EXPOSED DURING EXCAVATION SHALL BE ADEQUATELY SUPPORTED, BRACED, OR OTHERWISE PROTECTED DURING CONSTRUCTION ACTIVITIES.
7. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.

DOCUMENT USE:

1. THESE PLANS AND THE CORRESPONDING CAD DOCUMENTS ARE INSTRUMENTS OF PROFESSIONAL SERVICE PREPARED BY TRC ENGINEERS, INC., AND SHALL NOT BE USED, IN WHOLE OR IN PART, FOR ANY PURPOSE OTHER THAN FOR WHICH IT WAS CREATED WITHOUT THE EXPRESSED WRITTEN CONSENT OF TRC ENGINEERS, INC. ANY UNAUTHORIZED USE, REUSE, MODIFICATION, OR ALTERATION, INCLUDING AUTOMATED CONVERSION OF THIS DOCUMENT, SHALL BE AT THE USER'S SOLE RISK WITHOUT LIABILITY OR LEGAL EXPOSURE TO TRC ENGINEERS, INC.
2. CONTRACTOR SHALL NOT RELY SOLELY ON ELECTRONIC VERSIONS OF PLANS, SPECIFICATIONS, OR DATA FILES THAT ARE OBTAINED FROM THE DESIGNERS OR OWNER, BUT SHALL VERIFY LOCATIONS OF PROJECT FEATURES IN ACCORDANCE WITH THE PAPER COPIES OF THE PLANS AND SPECIFICATIONS THAT ARE SUPPLIED AS PART OF THE CONTRACT DOCUMENTS.
3. SYMBOLS AND LEGENDS OF PROJECT FEATURES ARE GRAPHIC REPRESENTATIONS, AND ARE NOT NECESSARILY SCALED TO THEIR ACTUAL DIMENSIONS OR LOCATIONS ON THE DRAWINGS. THE CONTRACTOR SHALL REFER TO THE DETAIL SHEET DIMENSIONS, MANUFACTURER'S LITERATURE, SHOP DRAWINGS, AND FIELD MEASUREMENTS OF SUPPLIED PRODUCTS FOR LAYOUT OF THE PROJECT FEATURES.

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STORMWATER QUALITY IMPROVEMENT RETROFITS
LOCUST ST., NARRAGANSETT AVE. & MIDDLE ST.
EAST PROVIDENCE, RHODE ISLAND

AARON CHIN-HUI TING
No. 15252
REGISTERED PROFESSIONAL ENGINEER
CIVIL
09-22-2025
Not Valid Without Signature

No.	REVISION	DATE	DRAWN	DESIGN	CHK
1	FOR BIDDING	10/14/2025	NJF	ACT	ACT

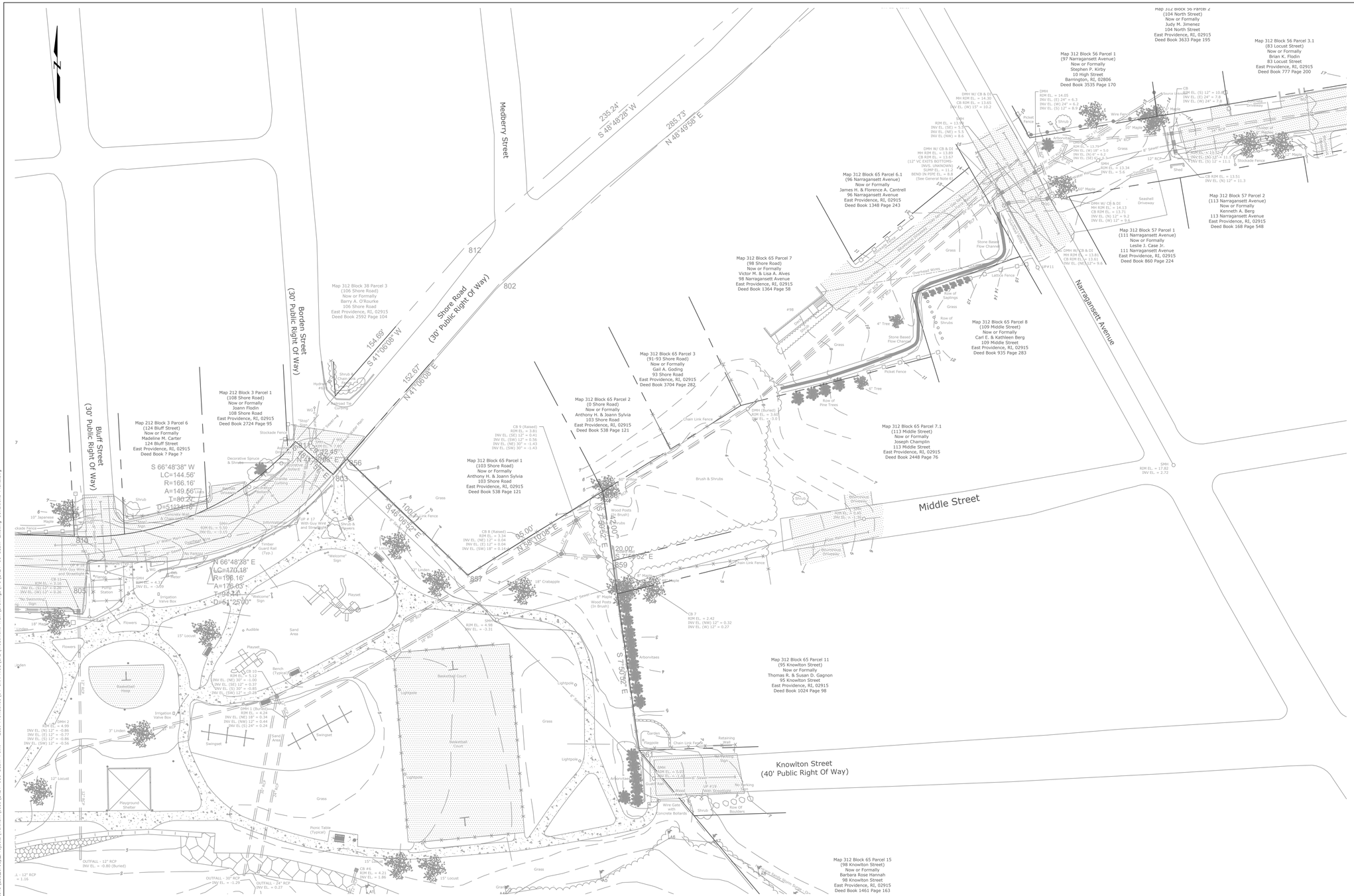
DRAWN BY: LDC | DESIGNED BY: JMG | CHECKED BY: ACT

GENERAL NOTES

ISSUED FOR BID

DRAWING NO: N-1

PROJECT NO: 016152
DATE OF ISSUE: 9/18/2025
SHEET NO: 2 OF 16



LEGEND

─ - ─ - ─	PROPERTY LINE
▨	DWELLING/BUILDING
— — 10 — —	CONTOURS
10 X 51	SPOT GRADE
──	CURBING
──	EDGE OF ASPHALT
○ SMH	SEWER MANHOLE
○ DMH	DRAINAGE MANHOLE
○ EMH	ELECTRIC MANHOLE
○ WG	WATER GATE
○ GG	GAS GATE
▦ CB	CATCH BASIN
▦ DRYWELL	DRYWELL
DI	DROP INLET
— S —	SANITARY SEWER SERVICE
— D —	STORM DRAIN LINE
— G —	GAS SERVICE
— W —	WATER SERVICE
— E —	ELECTRIC DUCT
— — —	OVERHEAD WIRE
UP	UTILITY POLE
HYD	HYDRANT
	SIGN
☐ RIHB	RI HIGHWAY BOUND
☐ SB	STONE BOUND
☐ GB	GRANITE BOUND
○ IP/IR	IRON PIPE or IRON ROD
○ NAIL	MAGNETIC NAIL
○ DH	DRILL HOLE
—×—×—×—	CHAINLINK FENCE
—☐—☐—☐—	STOCKADE/WOOD FENCE
	RETAINING WALL
⌒⌒⌒	HEDGES/EDGE OF BRUSH

WATER TABLE

Water Level	NAVD88	NGVD29	EPMHW
Zone VE BFE (In Park)	15	15.83	13.48
Zone VE BFE (At Beach)	16	16.83	14.48
MHHW	2.29	3.11	0.76
MHW	2.04	2.86	0.51
MLW	-2.29	-1.46	-3.81
MLLW	-2.46	-1.63	-3.98

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Not Valid Without Signature

0 30 60
SCALE: 1" = 30'

No.	REVISION	DATE	DRAWN	DESIGN	CHK
1	FOR BIDDING	10/14/2025	NJF	ACT	ACT

DRAWN BY: LDC | DESIGNED BY: JMG | CHECKED BY: ACT

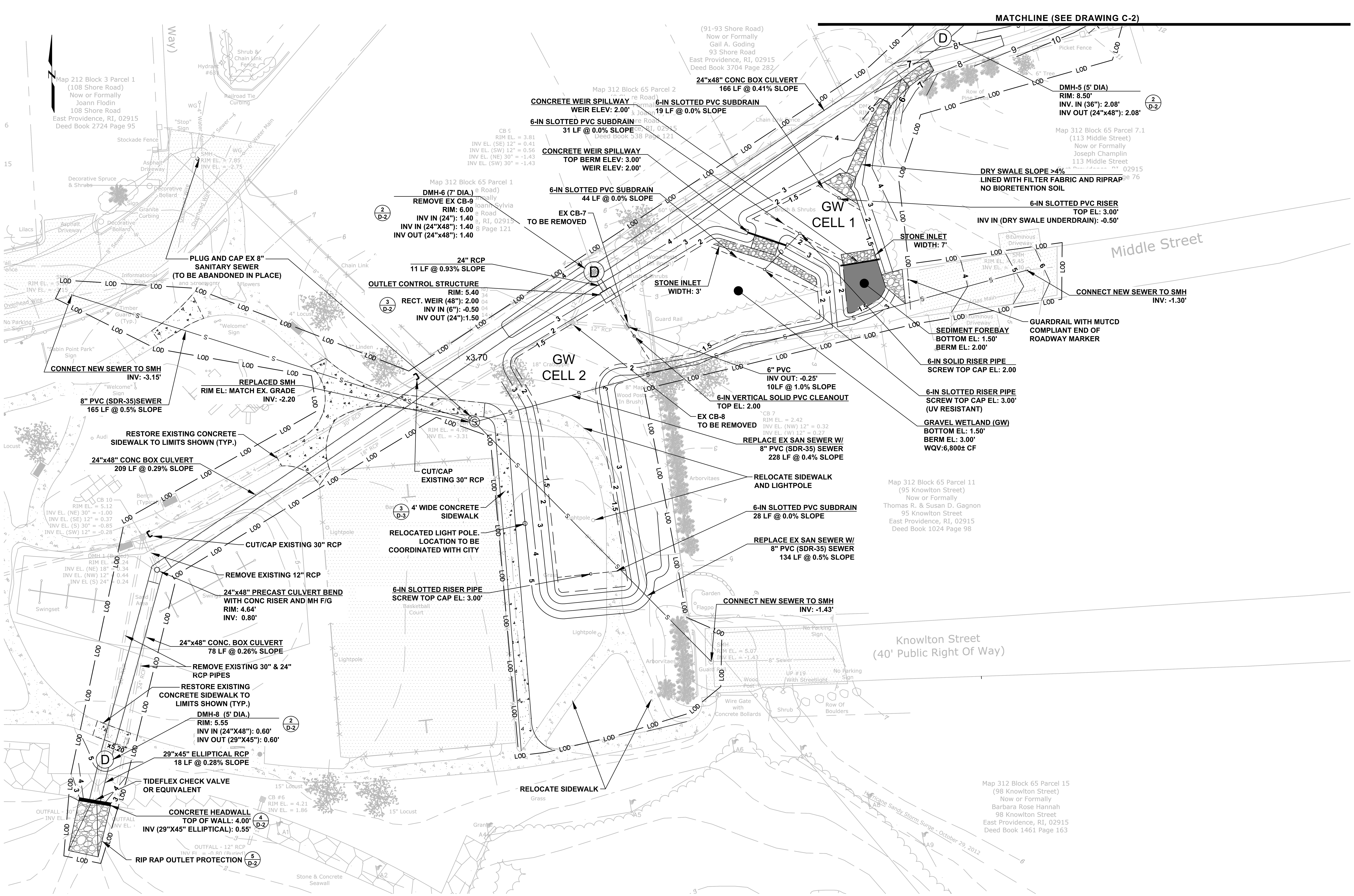
EXISTING CONDITIONS PLAN

ISSUED FOR BID

DRAWING NO:
EX-1

PROJECT NO: 016152
DATE OF ISSUE: 9/18/2025
SHEET NO: 3 OF 16

DATE: Oct 13, 2025 – 4:27PM
FILENAME: \\employees\gis\arcgispro\1-PROJECTS\ESS_Group_Projects\Waltham\Jobs\E424-000 Sabin Point – East Providence\04 GRAPHICS\CAD\Treatment Train\Drawings\IFC\E424-00 Sabin-Existing Conditions Plans.dwg



MATCHLINE (SEE DRAWING C-2)
24"x48" CONC BOX CULVERT
166 LF @ 0.41% SLOPE
CONCRETE WEIR SPILLWAY
WEIR ELEV: 2.00'
6-IN SLOTTED PVC SUBDRAIN
19 LF @ 0.0% SLOPE
6-IN SLOTTED PVC SUBDRAIN
31 LF @ 0.0% SLOPE
CONCRETE WEIR SPILLWAY
TOP BERM ELEV: 3.00'
WEIR ELEV: 2.00'
6-IN SLOTTED PVC SUBDRAIN
44 LF @ 0.0% SLOPE
DMH-6 (7' DIA.)
REMOVE EX CB-9
RIM: 6.00
INV IN (24"): 1.40
INV IN (24"X48"): 1.40
INV OUT (24"x48"): 1.40
EX CB-7
TO BE REMOVED
PLUG AND CAP EX 8"
SANITARY SEWER
(TO BE ABANDONED IN PLACE)
24" RCP
11 LF @ 0.93% SLOPE
OUTLET CONTROL STRUCTURE
RIM: 5.40
RECT. WEIR (48"): 2.00
INV IN (6"): -0.50
INV OUT (24"):1.50
STONE INLET
WIDTH: 3'
GW
CELL 1
GW
CELL 2
DMH-5 (5' DIA)
RIM: 8.50'
INV. IN (36"): 2.08'
INV OUT (24"x48"): 2.08'
DRY SWALE SLOPE >4%
LINED WITH FILTER FABRIC AND RIPRAP
NO BIORETENTION SOIL
6-IN SLOTTED PVC RISER
TOP EL: 3.00'
INV IN (DRY SWALE UNDERDRAIN): -0.50'
STONE INLET
WIDTH: 7'
Middle Street
CONNECT NEW SEWER TO SMH
INV: -1.30'
GUARDRAIL WITH MUTCD
COMPLIANT END OF
ROADWAY MARKER
SEDIMENT FOREBAY
BOTTOM EL: 1.50'
BERM EL: 2.00'
6-IN SOLID RISER PIPE
SCREW TOP CAP EL: 2.00
6-IN SLOTTED RISER PIPE
SCREW TOP CAP EL: 3.00'
(UV RESISTANT)
GRAVEL WETLAND (GW)
BOTTOM EL: 1.50'
BERM EL: 3.00'
WQV:6,800± CF
6" PVC
INV OUT: -0.25'
10LF @ 1.0% SLOPE
6-IN VERTICAL SOLID PVC CLEANOUT
TOP EL: 2.00
EX CB-8
TO BE REMOVED
REPLACE EX SAN SEWER W/
8" PVC (SDR-35) SEWER
228 LF @ 0.4% SLOPE
CONNECT NEW SEWER TO SMH
INV: -3.15'
REPLACED SMH
RIM EL: MATCH EX. GRADE
INV: -2.20
8" PVC (SDR-35)SEWER
165 LF @ 0.5% SLOPE
RESTORE EXISTING CONCRETE
SIDEWALK TO LIMITS SHOWN (TYP.)
24"x48" CONC BOX CULVERT
209 LF @ 0.29% SLOPE
CUT/CAP
EXISTING 30" RCP
4' WIDE CONCRETE
SIDEWALK
RELOCATED LIGHT POLE.
LOCATION TO BE
COORDINATED WITH CITY
RELOCATE SIDEWALK
AND LIGHTPOLE
6-IN SLOTTED PVC SUBDRAIN
28 LF @ 0.0% SLOPE
REPLACE EX SAN SEWER W/
8" PVC (SDR-35) SEWER
134 LF @ 0.5% SLOPE
CUT/CAP EXISTING 30" RCP
REMOVE EXISTING 12" RCP
24"x48" PRECAST CULVERT BEND
WITH CONC RISER AND MH F/G
RIM: 4.64'
INV: 0.80'
6-IN SLOTTED RISER PIPE
SCREW TOP CAP EL: 3.00'
CONNECT NEW SEWER TO SMH
INV: -1.43'
Knowlton Street
(40' Public Right Of Way)
24"x48" CONC. BOX CULVERT
78 LF @ 0.26% SLOPE
REMOVE EXISTING 30" & 24"
RCP PIPES
RESTORE EXISTING
CONCRETE SIDEWALK TO
LIMITS SHOWN (TYP.)
DMH-8 (5' DIA.)
RIM: 5.55
INV IN (24"X48"): 0.60'
INV OUT (29"X45"): 0.60'
29"x45" ELLIPTICAL RCP
18 LF @ 0.28% SLOPE
TIDEFLEX CHECK VALVE
OR EQUIVALENT
CONCRETE HEADWALL
TOP OF WALL: 4.00'
INV (29"X45" ELLIPTICAL): 0.55'
RIP RAP OUTLET PROTECTION
RELOCATE SIDEWALK
Map 312 Block 65 Parcel 11
(95 Knowlton Street)
Now or Formally
Thomas R. & Susan D. Gagnon
95 Knowlton Street
East Providence, RI, 02915
Deed Book 1024 Page 98
Map 312 Block 65 Parcel 15
(98 Knowlton Street)
Now or Formally
Barbara Rose Hannah
98 Knowlton Street
East Providence, RI, 02915
Deed Book 1461 Page 163
Map 212 Block 3 Parcel 1
(108 Shore Road)
Now or Formally
Joann Flodin
108 Shore Road
East Providence, RI, 02915
Deed Book 2724 Page 95
(91-93 Shore Road)
Now or Formally
Gail A. Goding
93 Shore Road
East Providence, RI, 02915
Deed Book 3704 Page 282

EXISTING LEGEND

	PROPERTY LINE
	DWELLING/BUILDING
10	CONTOURS
10 X 51	SPOT GRADE
	CURBING
	EDGE OF ASPHALT
SMH	SEWER MANHOLE
DMH	DRAINAGE MANHOLE
EMH	ELECTRIC MANHOLE
WG	WATER GATE
GG	GAS GATE
CB	CATCH BASIN
DRYWELL	DRYWELL
DI	DROP INLET
S	SANITARY SEWER SERVICE
D	STORM DRAIN LINE
G	GAS SERVICE
W	WATER SERVICE
E	ELECTRIC DUCT
	OVERHEAD WIRE
UP	UTILITY POLE
HYD	HYDRANT
	SIGN
RIHB	RI HIGHWAY BOUND
SB	STONE BOUND
GB	GRANITE BOUND
IP/IR	IRON PIPE or IRON ROD
NAIL	MAGNETIC NAIL
DH	DRILL HOLE
	CHAINLINK FENCE
	STOCKADE/WOOD FENCE
	RETAINING WALL
	HEDGES/EDGE OF BRUSH

PROPOSED LEGEND

10	1' CONTOUR
S	SEWER PIPE
	PIPE
	RIP RAP
	CONCRETE SIDEWALK
	FOREBAY
	PAVED INLET
D	STORM MH STRUCTURE
	STORM CB STRUCTURE
	GUARDRAIL

NOTES:

1. GRAVEL WETLAND VEGETATED TREATMENT SYSTEM (WVTS) WILL INVOLVE NATIVE WETLAND PLANTINGS, WETLAND SEED MIXES AND WETLAND SOIL MIXES.

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STORMWATER QUALITY IMPROVEMENT RETROFITS
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EAST PROVIDENCE, RHODE ISLAND

AARON CHIN-HUI TING
No. 15252
REGISTERED PROFESSIONAL ENGINEER CIVIL
09-22-2025
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SCALE: 1" = 20'

No.	REVISION	DATE	DRAWN	DESIGN	CHK
1	FOR BIDDING	10/14/2025	NJF	ACT	ACT

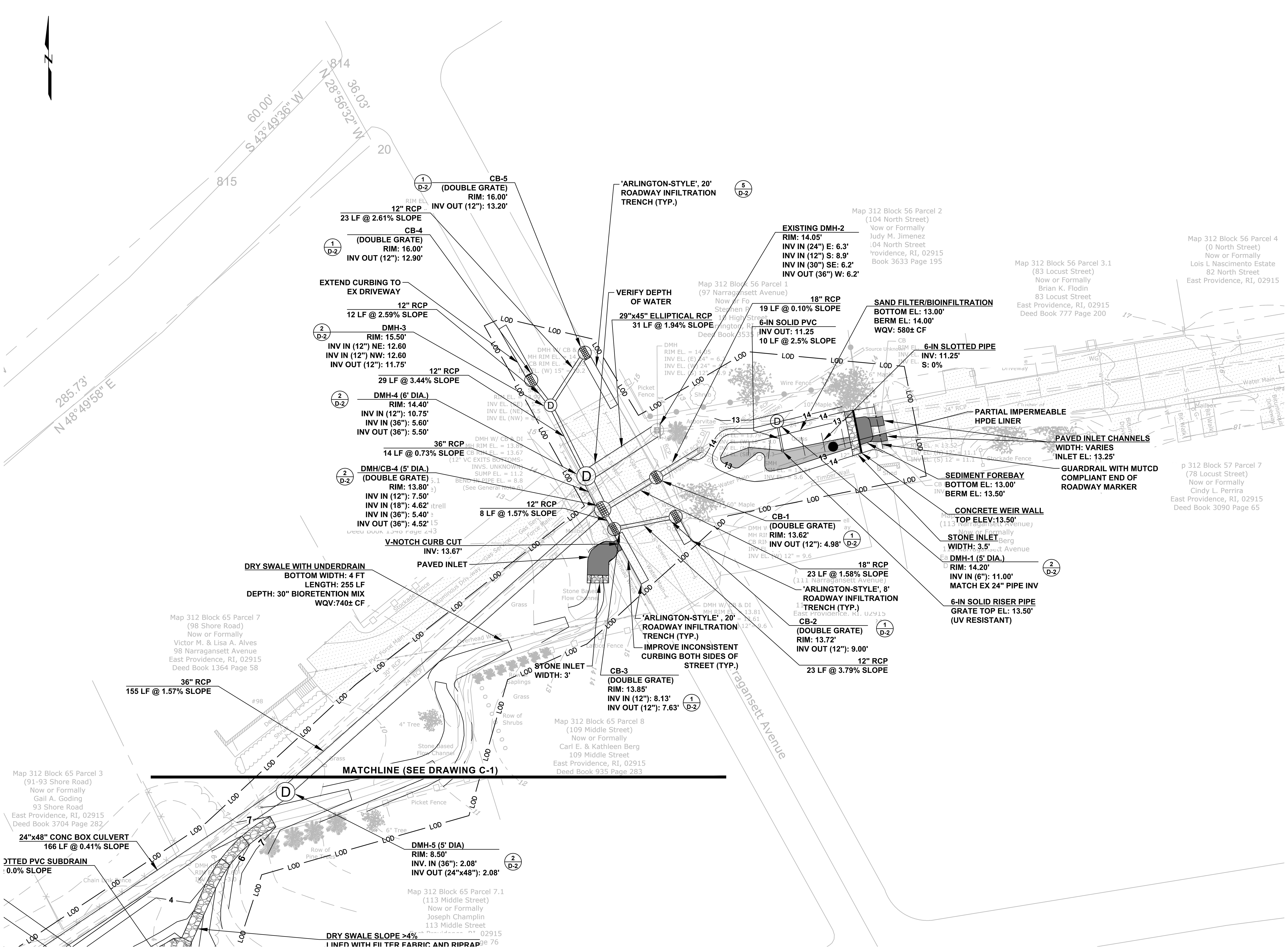
DRAWN BY: LDC | DESIGNED BY: JMG | CHECKED BY: ACT

PROPOSED CONDITIONS PLAN - 1

ISSUED FOR BID

DRAWING NO:
C-1

PROJECT NO: 016152
DATE OF ISSUE: 9/18/2025
SHEET NO: 4 OF 16



EXISTING LEGEND

- PROPERTY LINE
- DWELLING/BUILDING
- CONTOURS
- SPOT GRADE
- CURBING
- EDGE OF ASPHALT
- SEWER MANHOLE
- DRAINAGE MANHOLE
- ELECTRIC MANHOLE
- WATER GATE
- GAS GATE
- CATCH BASIN
- DRYWELL
- DROP INLET
- SANITARY SEWER SERVICE
- STORM DRAIN LINE
- GAS SERVICE
- WATER SERVICE
- ELECTRIC DUCT
- OVERHEAD WIRE
- UTILITY POLE
- HYDRANT
- SIGN
- RI HIGHWAY BOUND
- STONE BOUND
- GRANITE BOUND
- IRON PIPE or IRON ROD
- MAGNETIC NAIL
- DRILL HOLE
- CHAINLINK FENCE
- STOCKADE/WOOD FENCE
- RETAINING WALL
- HEDGES/EDGE OF BRUSH

PROPOSED LEGEND

- 1' CONTOUR
- SEWER PIPE
- PIPE
- RIP RAP
- CONCRETE SIDEWALK
- FOREBAY
- PAVED INLET
- STORM MH STRUCTURE
- STORM CB STRUCTURE
- GUARDRAIL

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0 20 40
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DRAWN BY: LDC | DESIGNED BY: JMG | CHECKED BY: ACT

PROPOSED CONDITIONS PLAN - 2

ISSUED FOR BID

DRAWING NO:
C-2

PROJECT NO: 016152
DATE OF ISSUE: 9/18/2025
SHEET NO: 5 OF 16

PROPOSED STORM DRAIN PROFILE

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'

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0 20 40
SCALE: 1" = 20'

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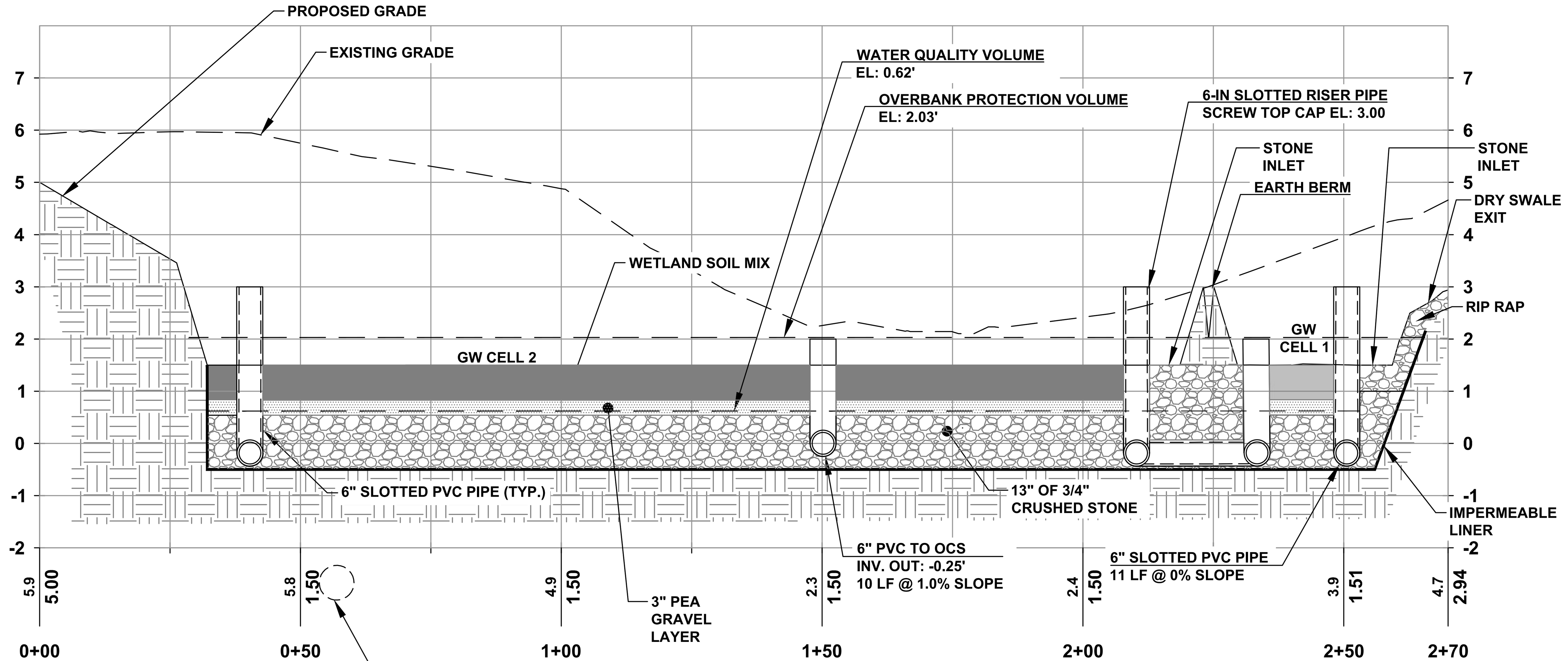
STORMWATER PROFILES - 1

ISSUED FOR BID

DRAWING NO:
SP-1

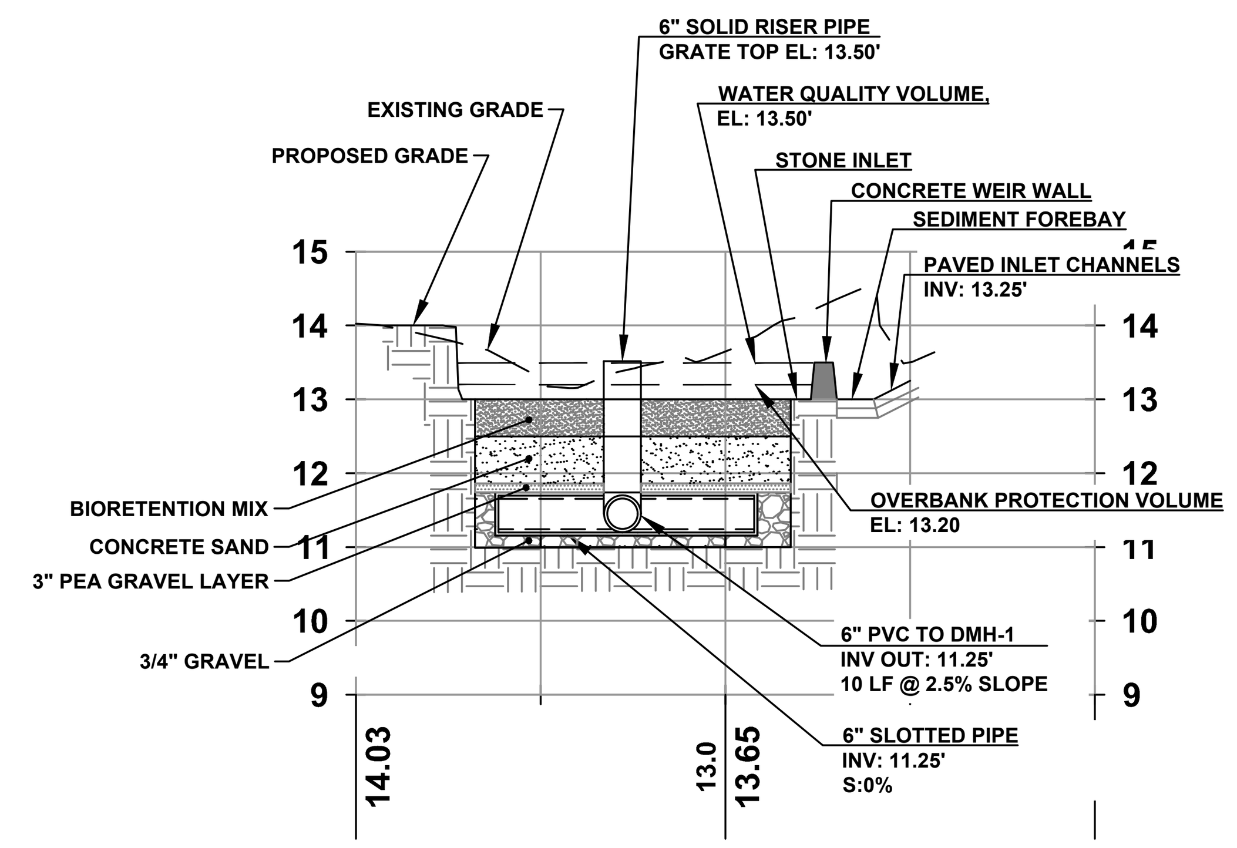
PROJECT NO: 016152
DATE OF ISSUE: 9/18/2025
SHEET NO: 6 OF 16



GW CELL PROFILE A-A

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'

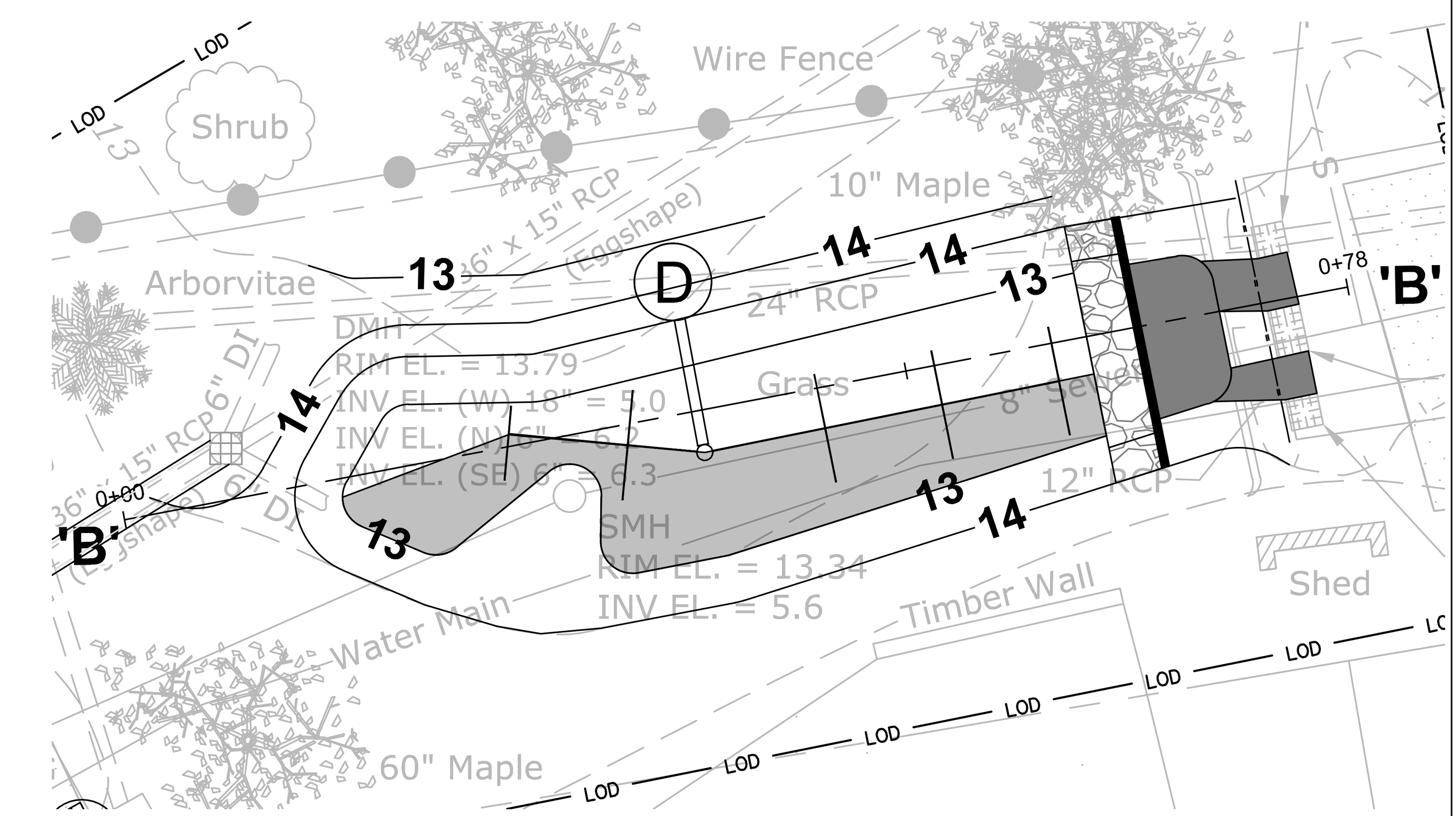
NOTES:
1. PAINT EXPOSED PVC WITH LIGHT COLORED EXTERIOR LATEX WATER-BASED PAINT.
2. ALL PVC SCHEDULE 40.
3. INSTALL 6" STAINLESS STEEL MESH ANIMAL GUARDS ON ALL PVC OUTLETS.



NOTES:
1. PAINT EXPOSED PVC WITH LIGHT COLORED EXTERIOR LATEX WATER-BASED PAINT.
2. ALL PVC SCHEDULE 40.
3. SAND FILTER PARTIALLY LINED WITH IMPERMEABLE HDPE LINER. SEE PLAN.

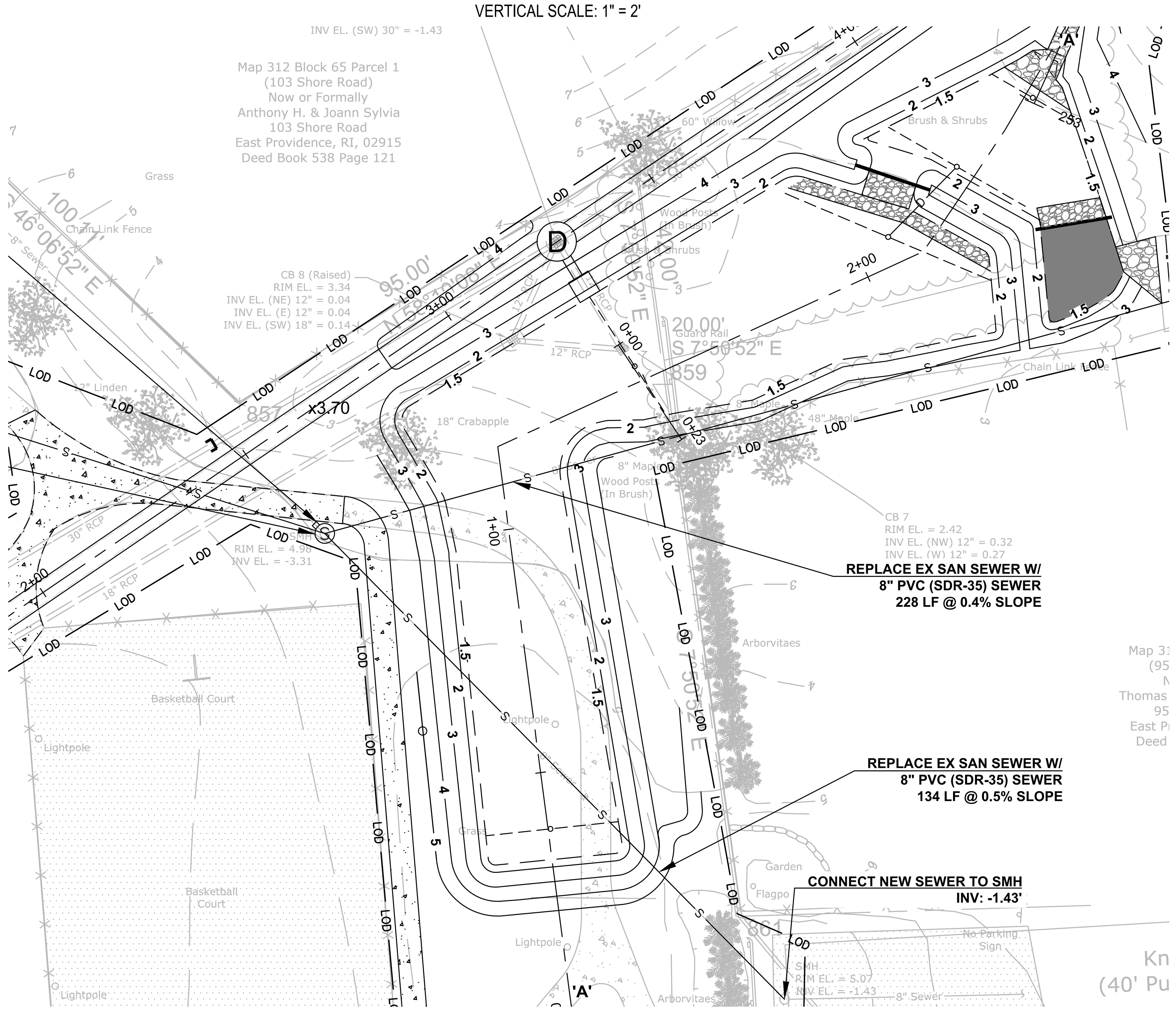
SAND FILTER / BIOINFILTRATION PROFILE B-B

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'



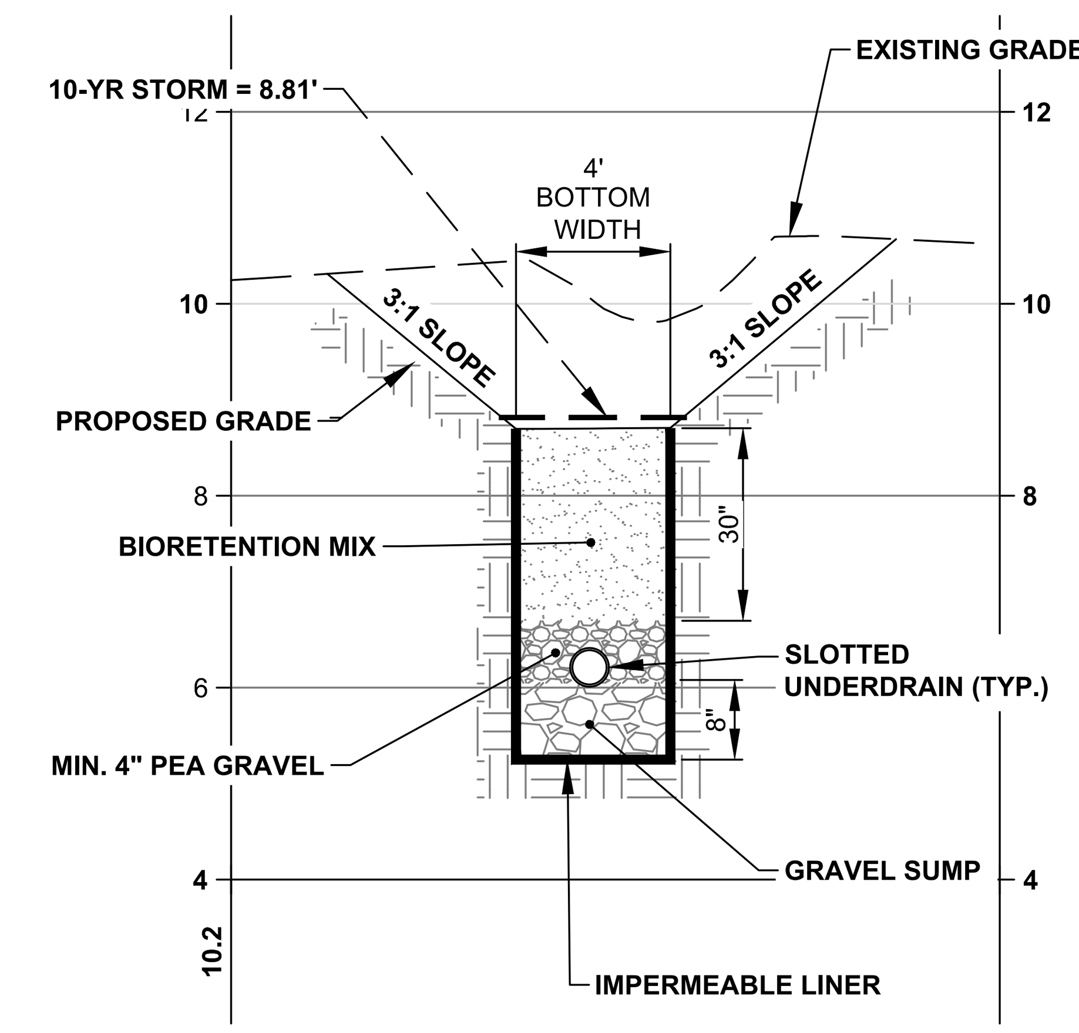
SAND FILTER / BIOINFILTRATION (ALIGNMENT B-B) PROFILE PLAN VIEW

SCALE: 1" = 10'



GW CELL (ALIGNMENT A-A) PROFILE PLAN VIEW

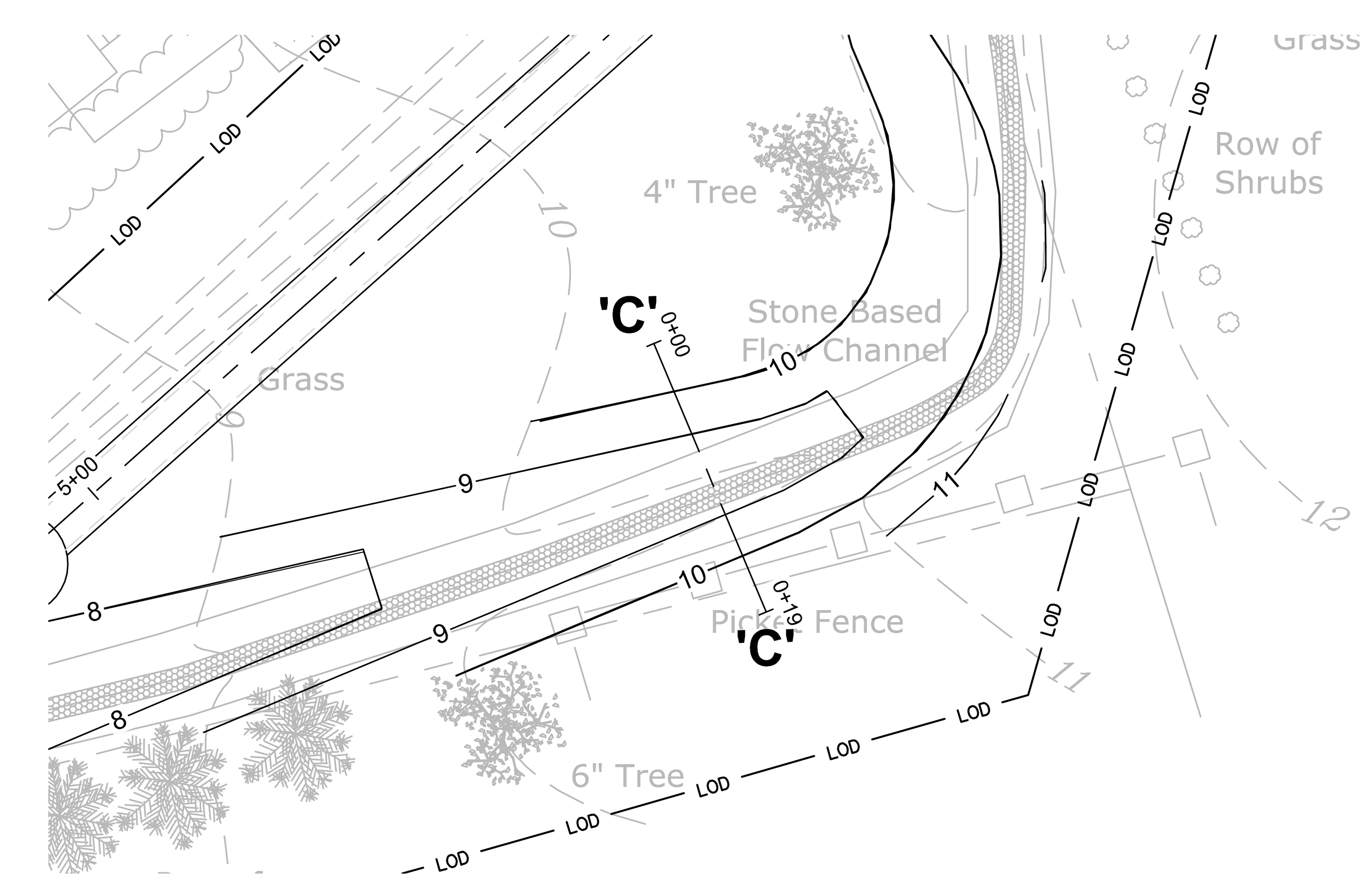
SCALE: 1" = 20'



NOTE: BIORETENTION MIX NOT PLACED BENEATH PORTION OF DRY SWALE WHERE SLOPE >4%(REFER TO PLAN SHEET C-1).

DRY SWALE CROSS SECTION C-C

HORIZONTAL SCALE: 1" = 5'
VERTICAL SCALE: 1" = 2'



DRY SWALE (ALIGNMENT C-C) CROSS SECTION PLAN VIEW

SCALE: 1" = 10'

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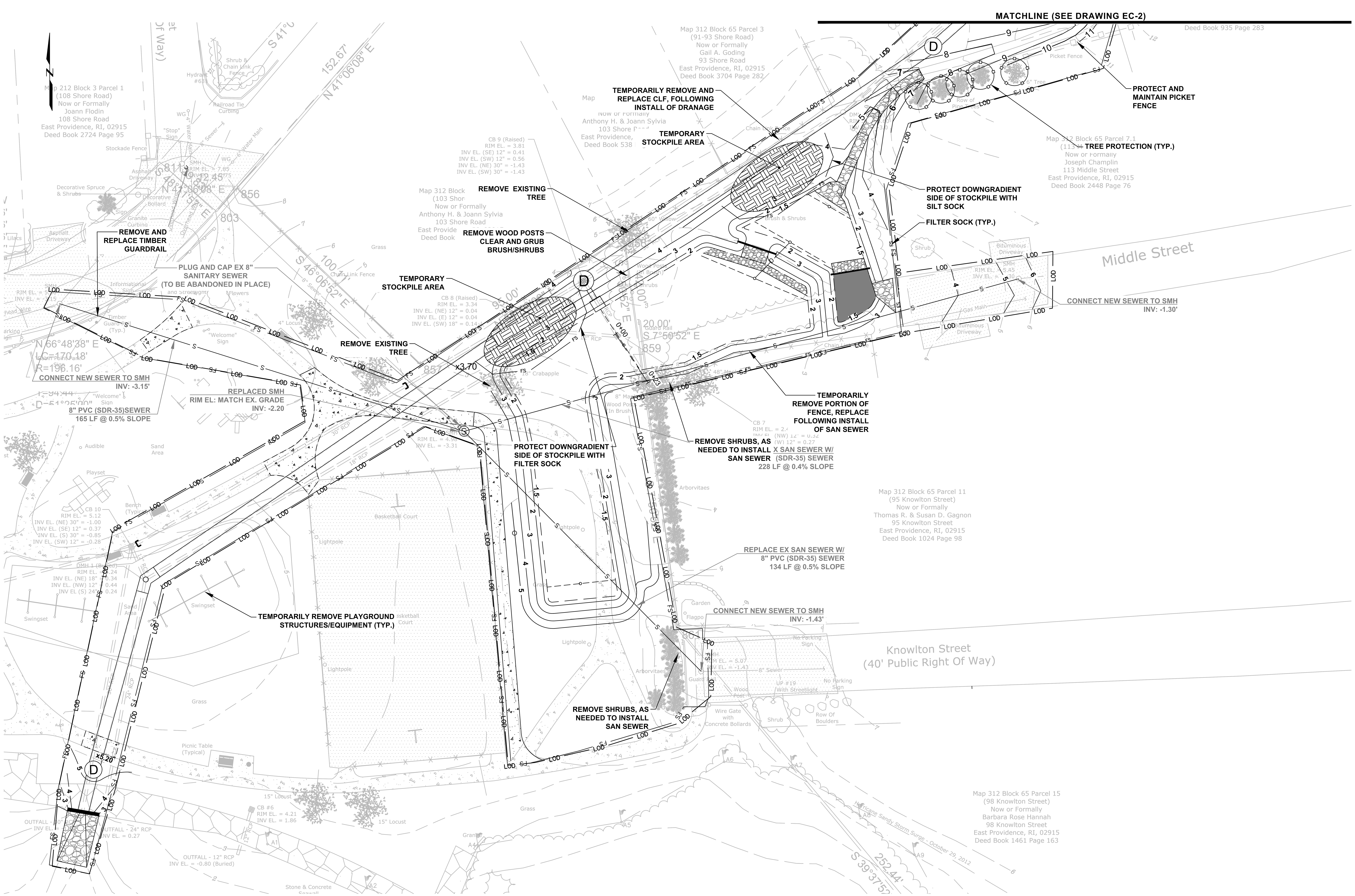
STORMWATER PROFILES - 2

ISSUED FOR BID

DRAWING NO.: SP-2

PROJECT NO: 016152
DATE OF ISSUE: 9/18/2025
SHEET NO: 7 OF 16



SOIL EROSION AND SEDIMENT CONTROL LEGEND

- PROPOSED 1' CONTOUR
- PROPOSED LIMITS OF DISTURBANCE
- PROPOSED TREE PROTECTION
- PROPOSED SILT SOCK
- PROPOSED STOCKPILE LOCATION
- PROPOSED INLET PROTECTION

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0 20 40
SCALE: 1" = 20'

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1	FOR BIDDING	10/14/2025	NJF	ACT	ACT

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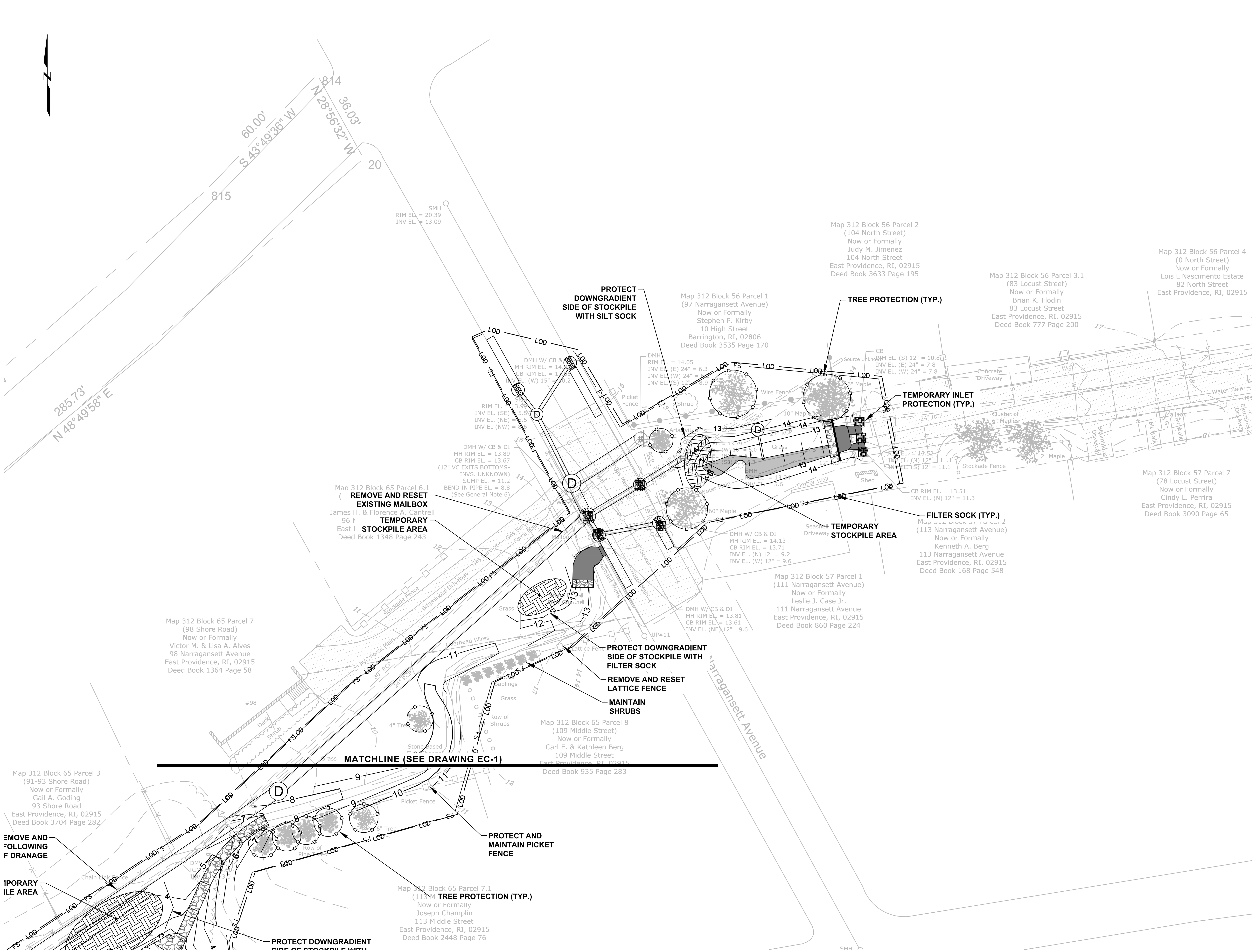
SOIL EROSION & SEDIMENT CONTROL PLAN - 1

ISSUED FOR BID

DRAWING NO:
EC-1

PROJECT NO: 016152
DATE OF ISSUE: 9/18/2025
SHEET NO: 8 OF 16



SOIL EROSION AND SEDIMENT CONTROL LEGEND

- 10 — PROPOSED 1' CONTOUR
- PROPOSED LIMITS OF DISTURBANCE
- PROPOSED TREE PROTECTION
- PROPOSED SILT SOCK
- PROPOSED STOCKPILE LOCATION
- PROPOSED INLET PROTECTION

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0 20 40
SCALE: 1" = 20'

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1	FOR BIDDING	10/14/2025	NJF	ACT	ACT

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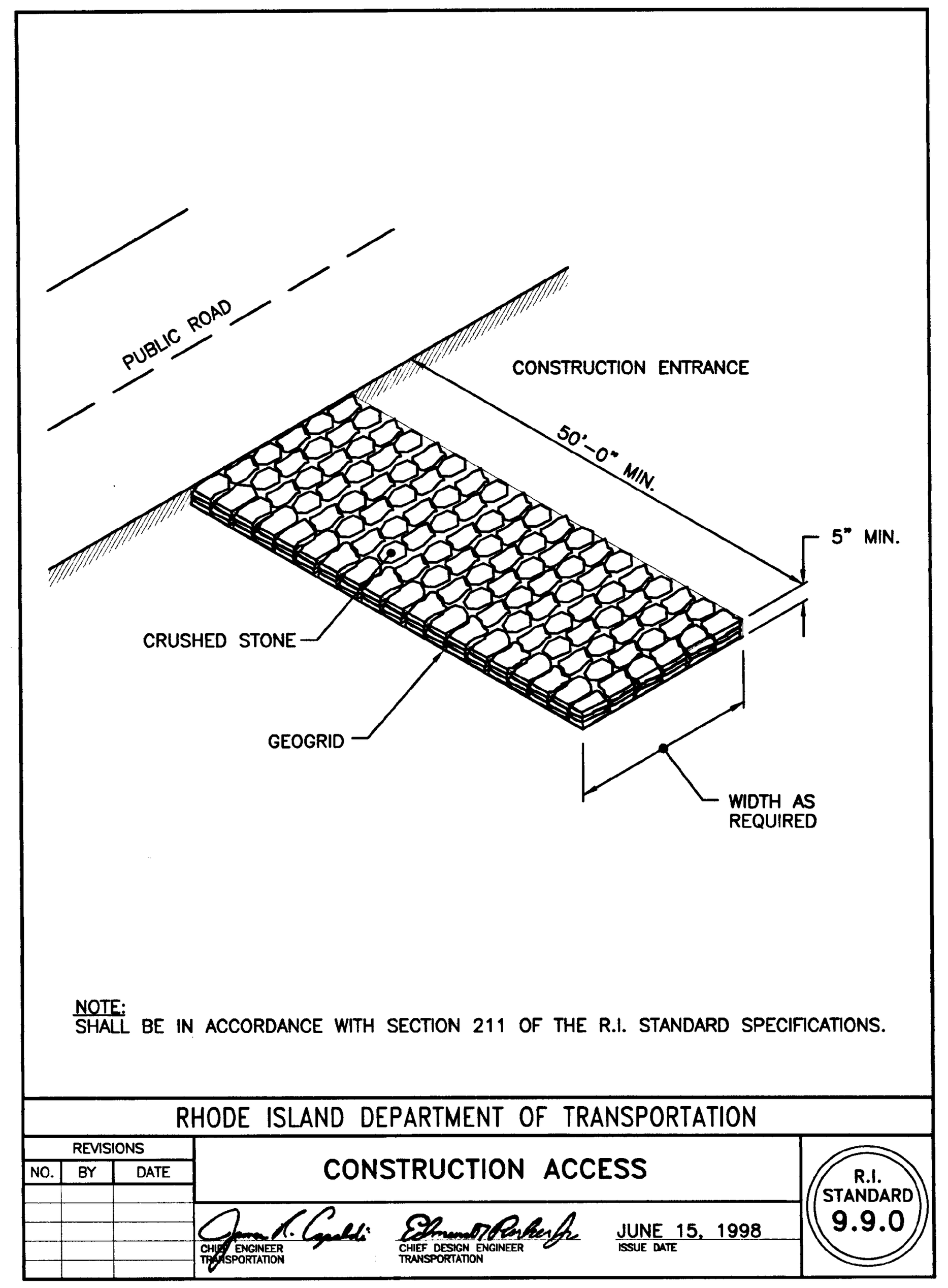
SOIL EROSION & SEDIMENT CONTROL PLAN - 2

ISSUED FOR BID

DRAWING NO:
EC-2

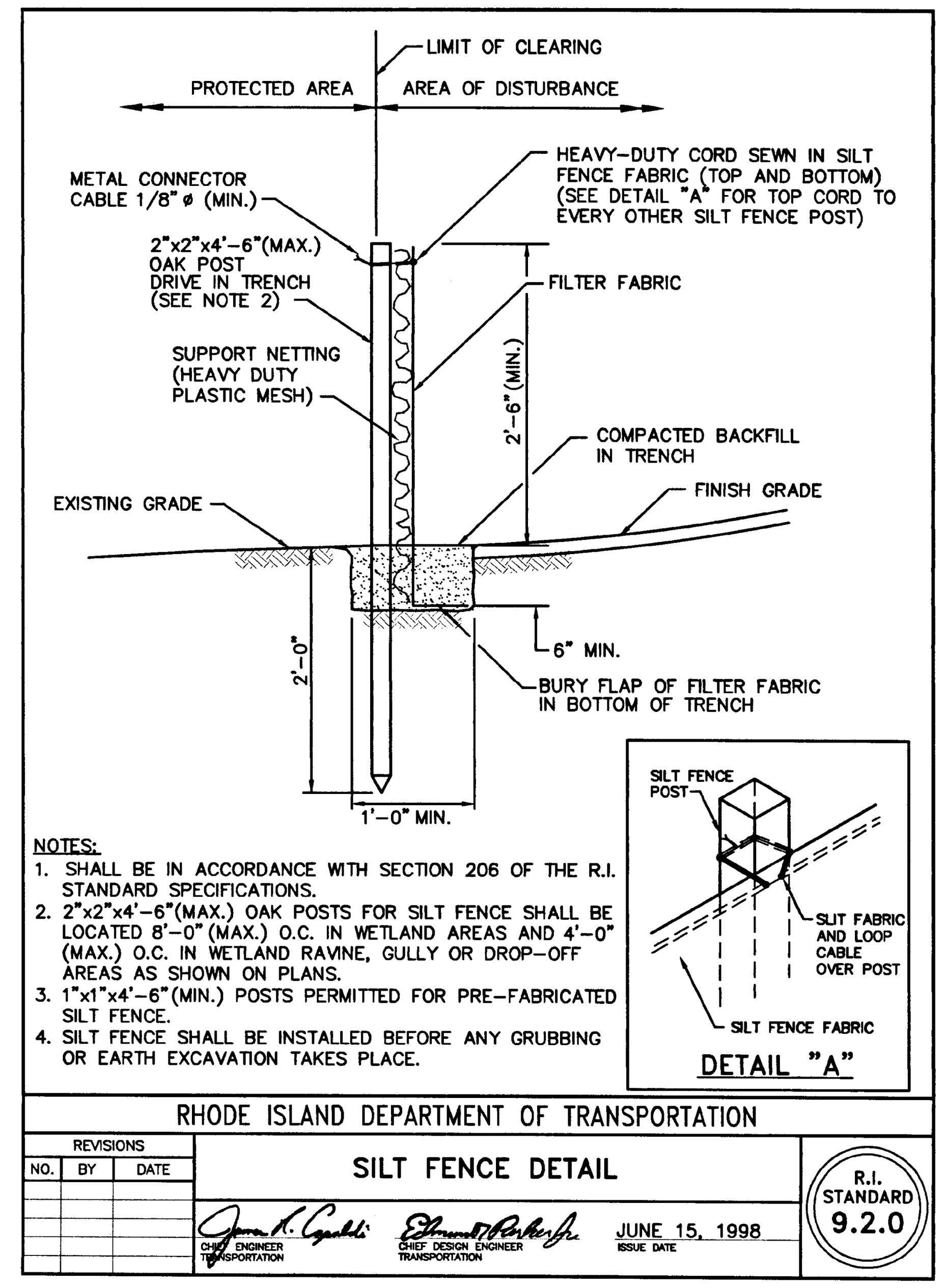
PROJECT NO: 016152
DATE OF ISSUE: 9/18/2025
SHEET NO: 9 OF 16



1 / D-1

CONSTRUCTION ACCESS DETAIL

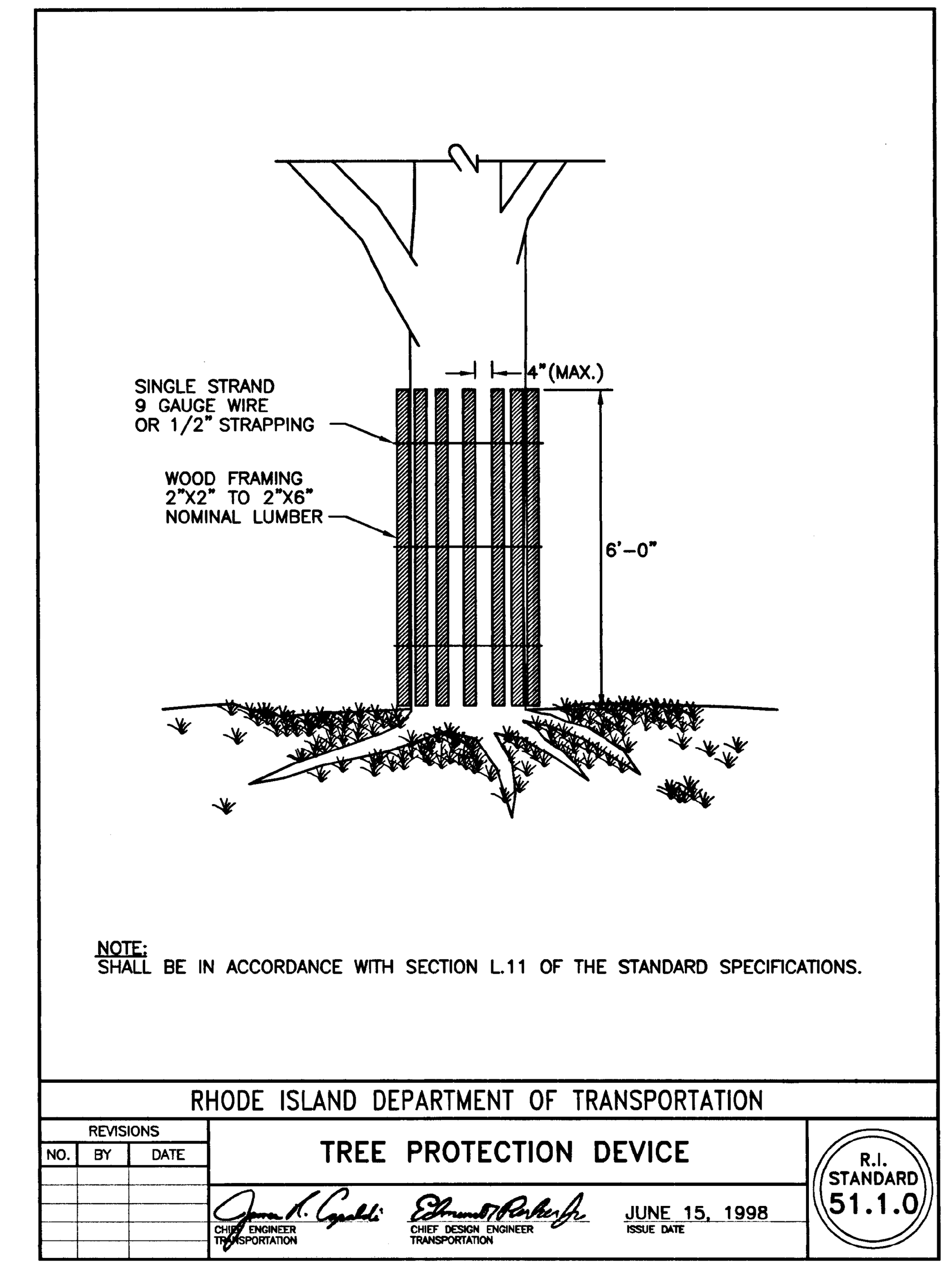
(NOT TO SCALE)



2 / D-1

SILT FENCE DETAIL

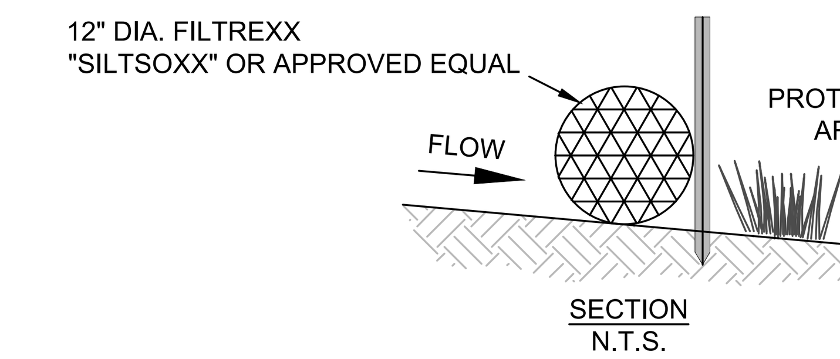
(NOT TO SCALE)



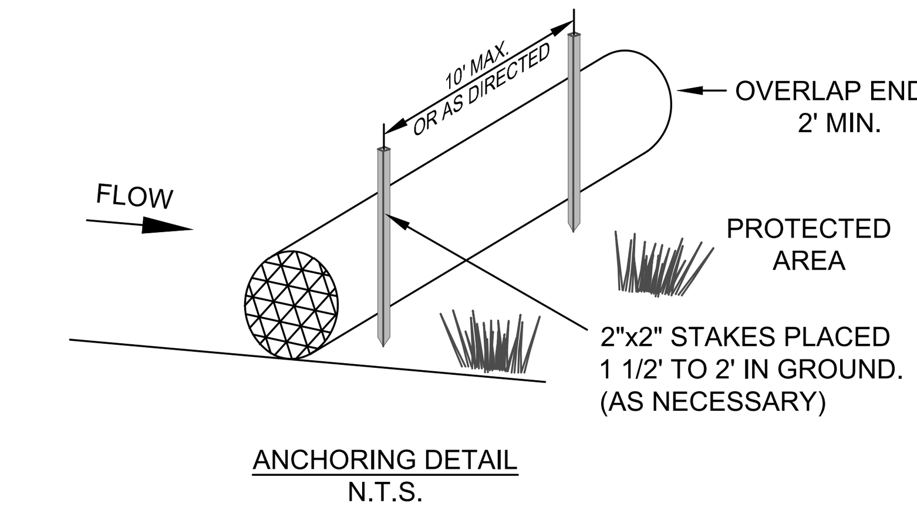
3 / D-1

TREE PROTECTION DETAIL

(NOT TO SCALE)



DRAINAGE AREA NO MORE THAN 1/4 ACRE PER 100 FEET OF EC LOG DIKE FOR SLOPES LESS THAN 25%



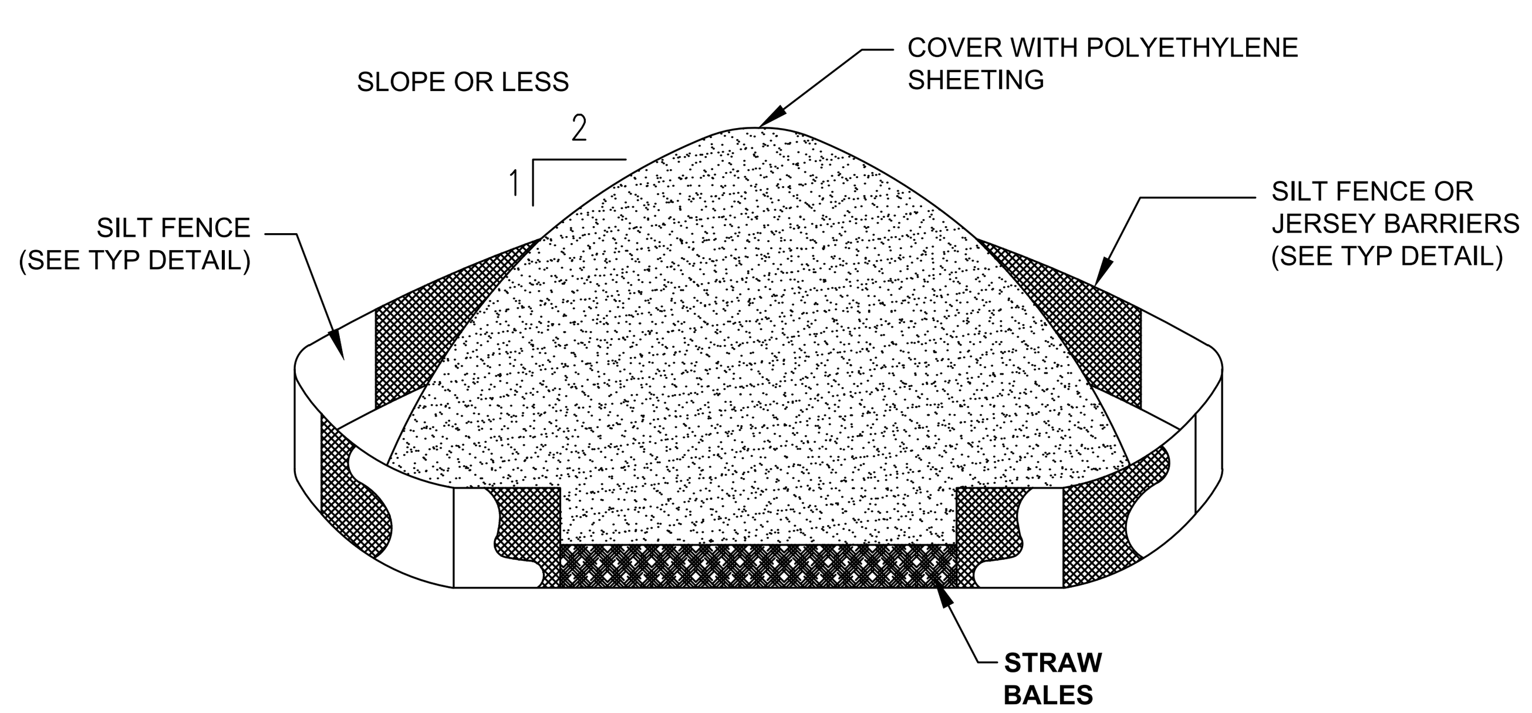
CONSTRUCTION SPECIFICATIONS

1. EC SOCKS SHALL BE PLACED IN ACCORDANCE WITH THIS PLAN SET AND IN A ROW WITH ENDS OVERLAPPING 2 FEET (MIN.).
2. EC SOCKS MAY BE SECURELY ANCHORED IN PLACE BY WOOD STAKES, 10 FEET ON CENTER (MAX), OR AS DIRECTED BY ENVIRONMENTAL MONITOR.
3. INSPECTION SHALL BE FREQUENT AND REPAIR AND/OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
4. EC SOCKS WILL BE DE-CONSTRUCTED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
5. EC SOCKS SHALL REMAIN IN PLACE AND NOT BE MOVED TO OTHER LOCATIONS IN THE PROJECT.

4 / D-1

EROSION CONTROL SOCK DETAIL

(NOT TO SCALE)



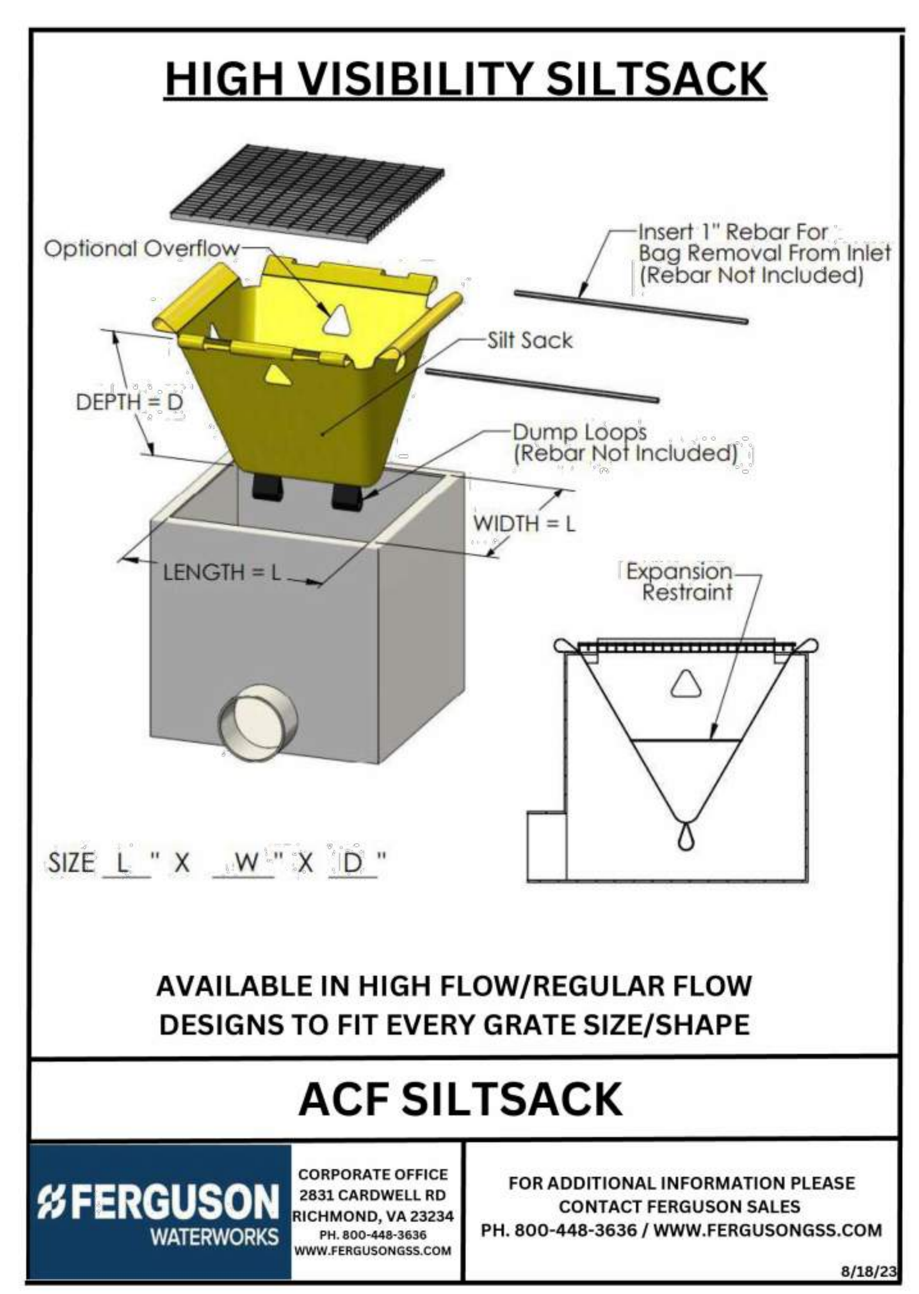
INSTALLATION NOTES:

1. AREA CHOSEN FOR STOCKPILING OPERATIONS WITHIN THE SOIL MANAGEMENT AREA SHALL BE DRY AND STABLE.
2. STOCKPILE TO BE PLACED ON IMPERVIOUS SURFACE OR ON MIN. 6 MIL THICK POLYETHYLENE SHEETING.
3. MAXIMUM SLOPE OF STOCKPILE SHALL BE 2H:1V.
4. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH EITHER SILT FENCING OR JERSEY BARRIERS, THEN COVERED WITH POLYETHYLENE SHEETING.

5 / D-1

TYPICAL SOIL STOCKPILE DETAIL

(NOT TO SCALE)



6 / D-1

SILT SACK DETAIL

(NOT TO SCALE)

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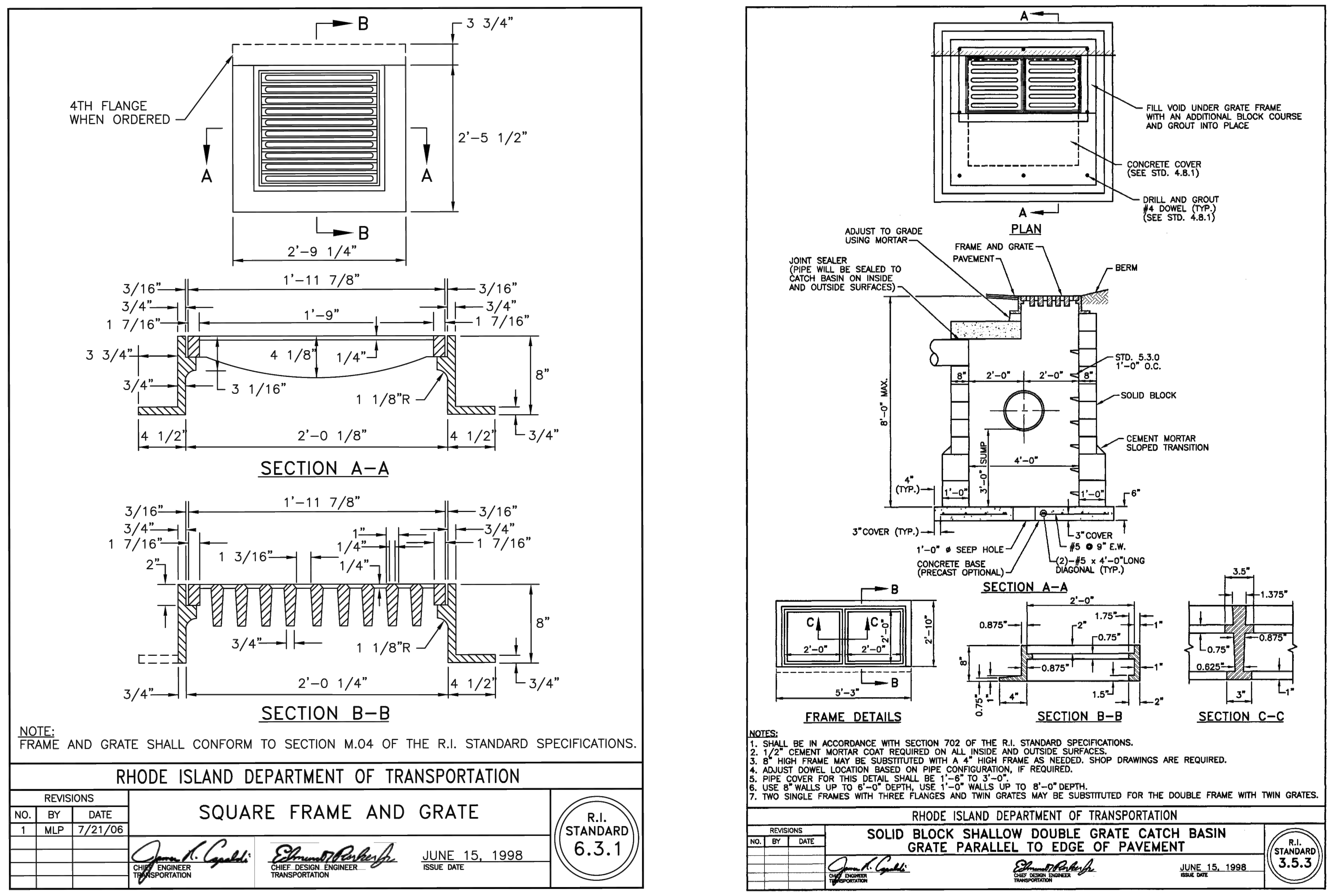
EROSION CONTROL DETAILS

ISSUED FOR BID

DRAWING NO:

D-1

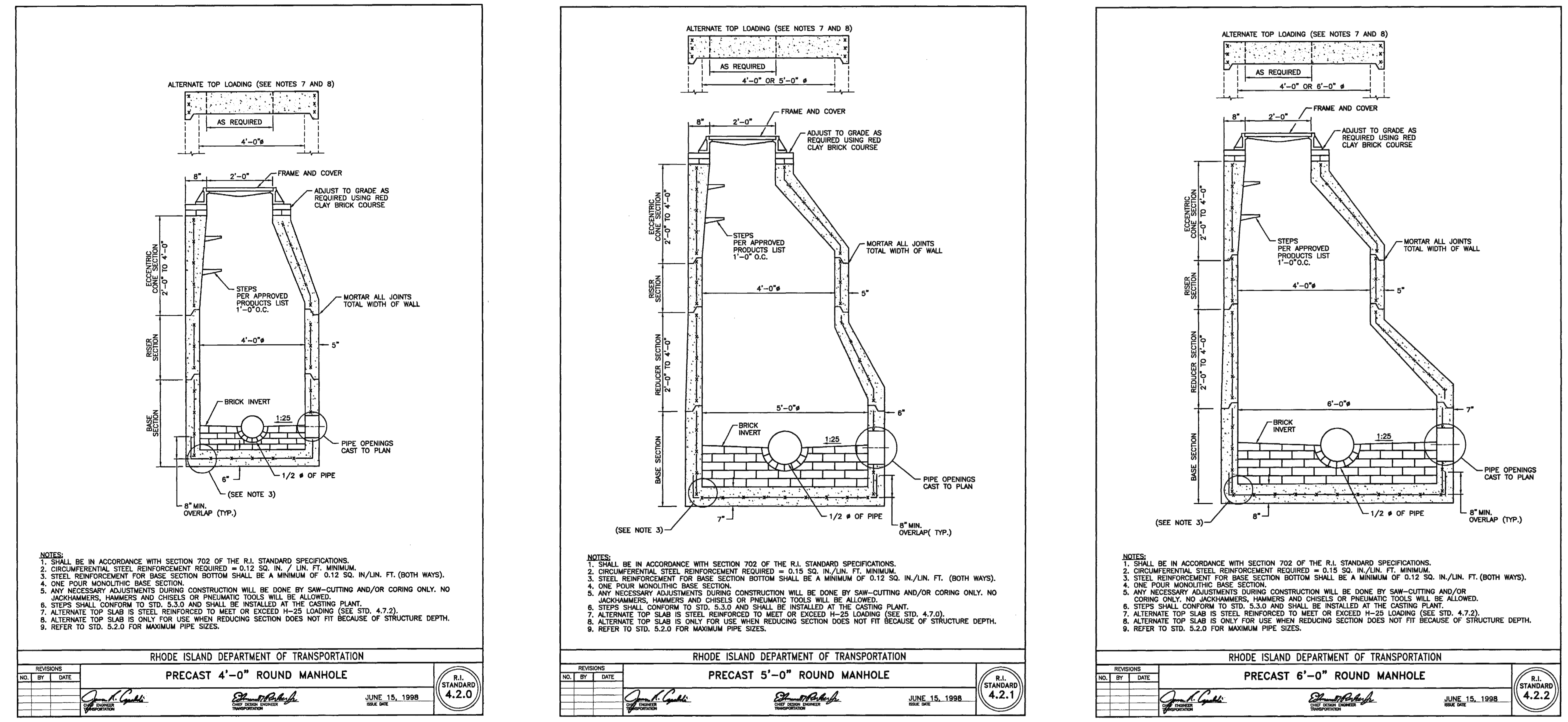
PROJECT NO: 016152
DATE OF ISSUE: 9/18/2025
SHEET NO: 10 OF 16



1
D-2

DOUBLE SQUARE FRAME AND GRATE DETAILS

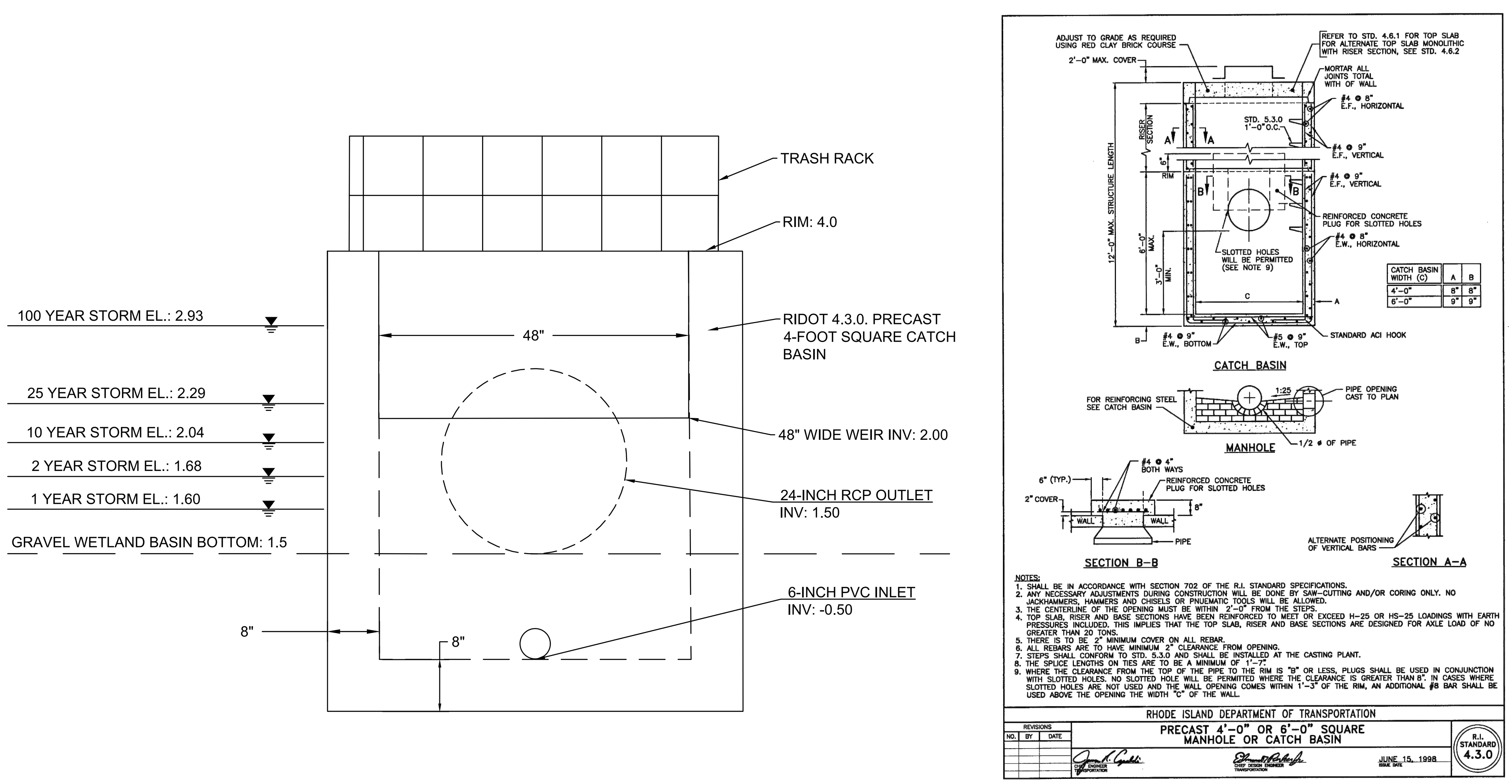
(NOT TO SCALE)



2
D-2

PRECAST MANHOLE DETAILS

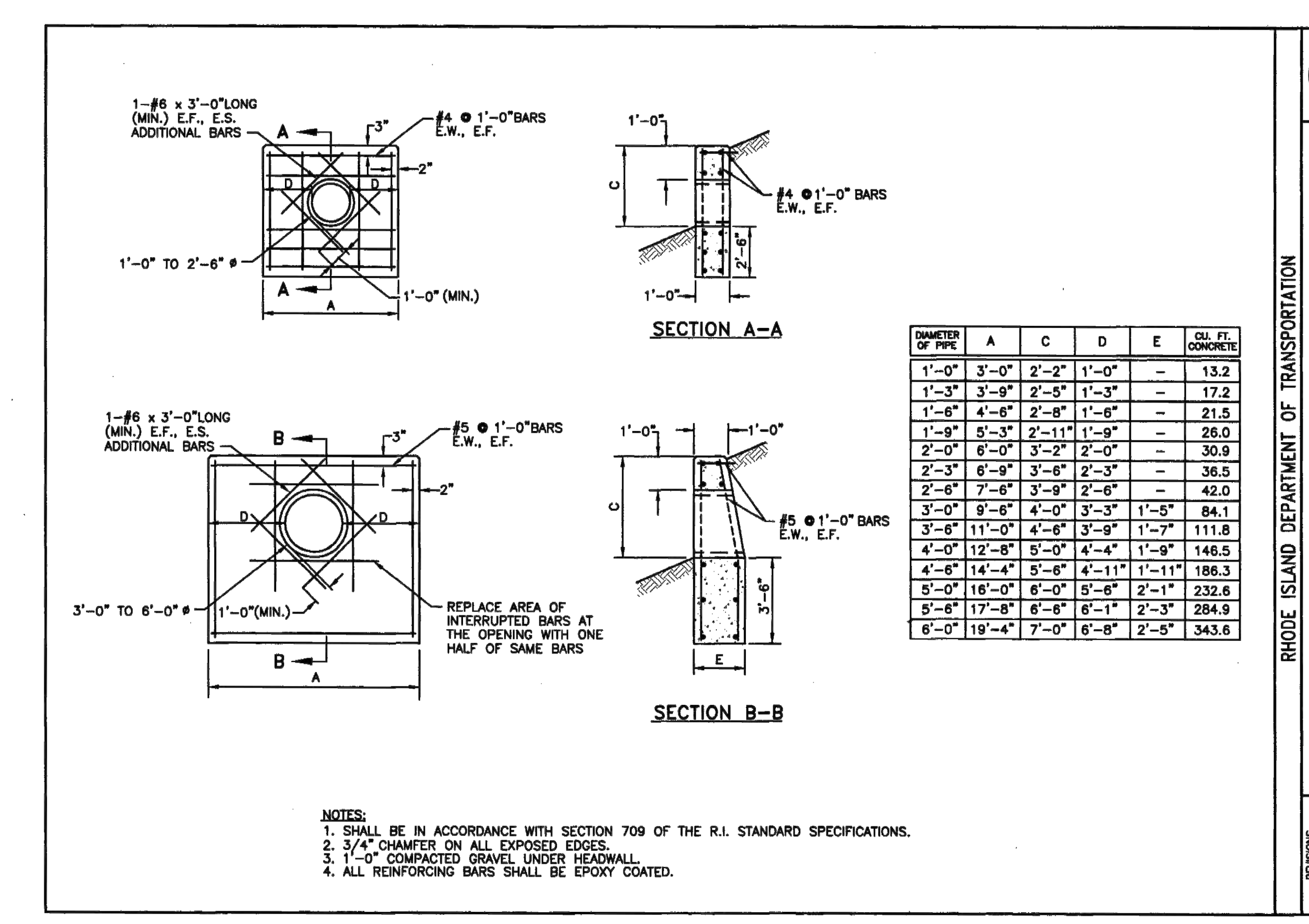
(NOT TO SCALE)



3
D-2

OUTLET CONTROL STRUCTURE DETAIL

(NOT TO SCALE)

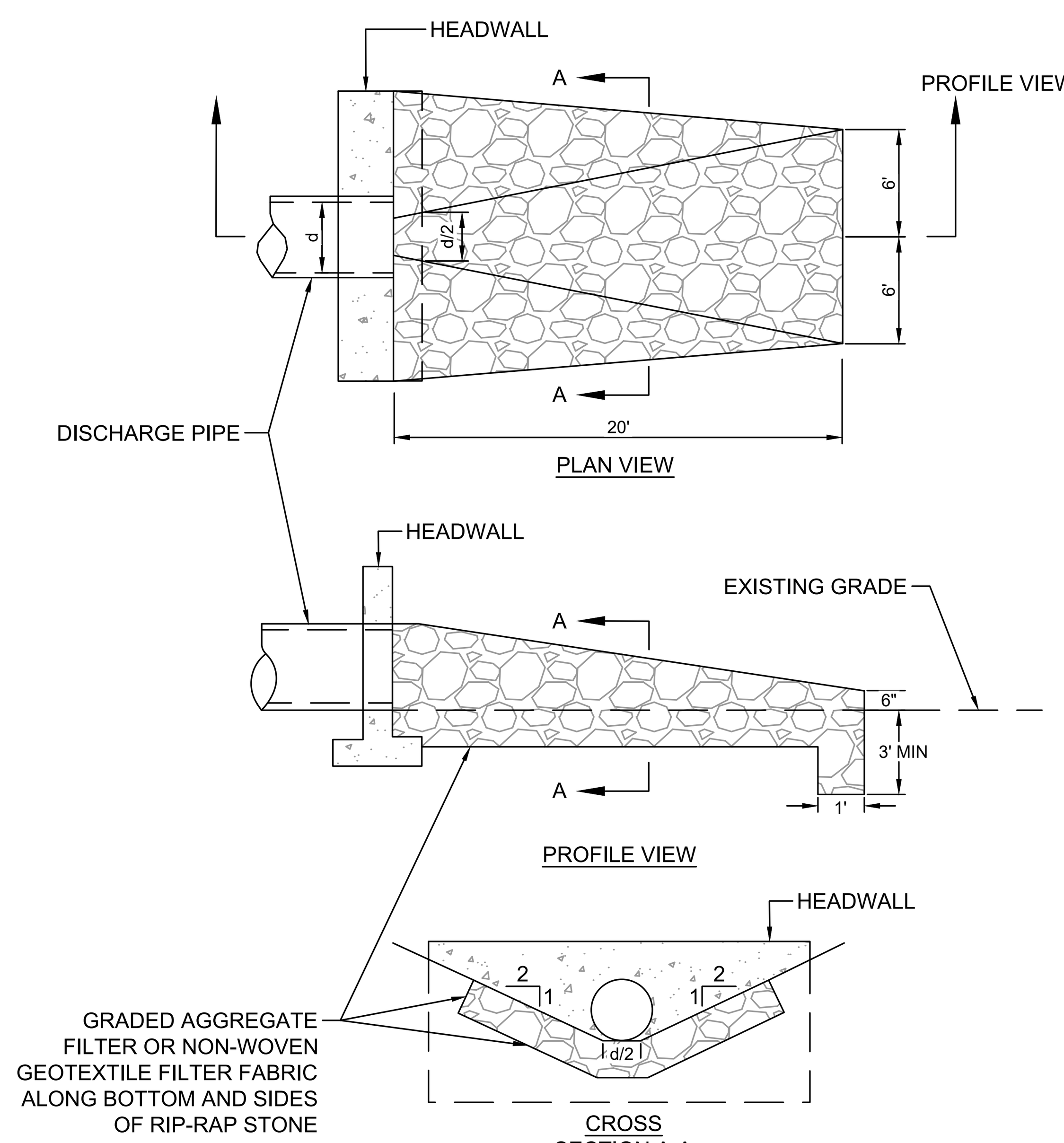


DIAMETER OF PIPE	A	C	D	E	CU. FT. CONCRETE
1'–0"	3'–0"	2'–2"	1'–0"	–	13.2
1'–3"	3'–9"	2'–5"	1'–3"	–	17.2
1'–6"	4'–6"	2'–8"	1'–6"	–	21.5
1'–9"	5'–3"	2'–11"	1'–9"	–	26.0
2'–0"	6'–0"	3'–2"	2'–0"	–	30.9
2'–3"	6'–9"	3'–6"	2'–3"	–	36.5
2'–6"	7'–6"	3'–9"	2'–6"	–	42.0
3'–0"	9'–6"	4'–0"	3'–3"	1'–5"	84.1
3'–6"	11'–0"	4'–6"	3'–9"	1'–7"	111.8
4'–0"	12'–8"	5'–0"	4'–4"	1'–9"	146.5
4'–6"	14'–4"	5'–6"	4'–11"	1'–11"	186.3
5'–0"	16'–0"	6'–0"	5'–6"	2'–1"	232.6
5'–6"	17'–8"	6'–6"	6'–1"	2'–3"	284.9
6'–0"	19'–4"	7'–0"	6'–8"	2'–5"	343.6

4
D-2

CONCRETE HEADWALL DETAIL

(NOT TO SCALE)



5
D-2

RIP RAP OUTLET PROTECTION DETAIL

(NOT TO SCALE)

TRC
401 Wampanoag Trail, 3rd Floor
East Providence, RI 02915
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145 TAUNTON AVENUE
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STORMWATER QUALITY IMPROVEMENT RETROFITS
LOCUST ST., NARRAGANSETT AVE. & MIDDLE ST.
EAST PROVIDENCE, RHODE ISLAND

AARON CHIN-HUI TING
No. 15252
REGISTERED PROFESSIONAL ENGINEER CIVIL
09-22-2025
Not Valid Without Signature

No.	REVISION	DATE	DRAWN	DESIGN	CHK
1	FOR BIDDING	10/14/2025	NJF	ACT	ACT

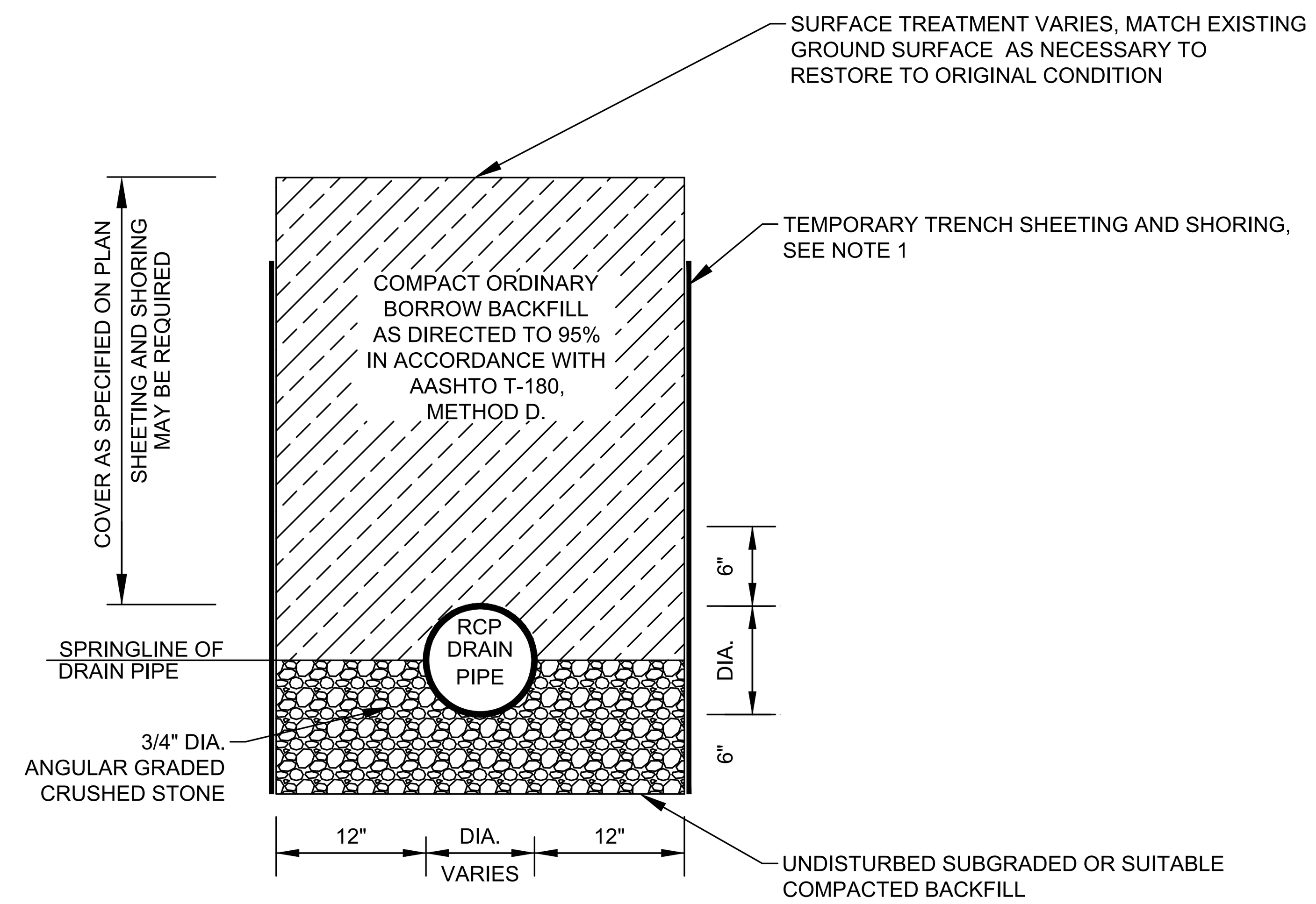
DRAWN BY: LDC | DESIGNED BY: JMG | CHECKED BY: ACT

CIVIL DETAILS

ISSUED FOR BID

DRAWING NO:
D-2

PROJECT NO: 016152
DATE OF ISSUE: 9/18/2025
SHEET NO: 11 OF 16



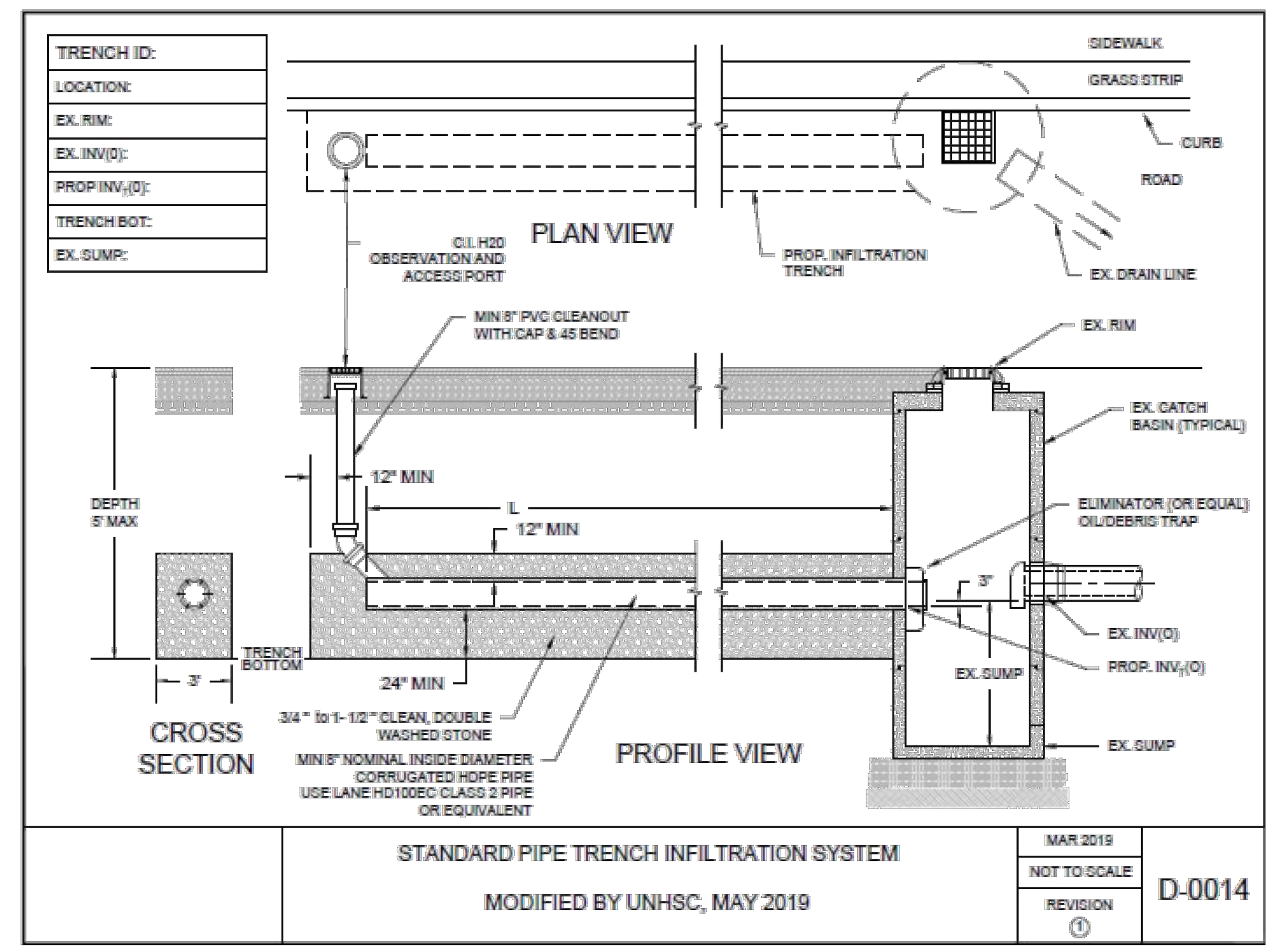
NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING SHOP DRAWINGS TO THE ENGINEER FOR TEMPORARY SHEETING AND SHORING FOR ALL UTILITY TRENCH WORK REQUIRING STABILIZATION DURING CONSTRUCTION.

1 / D-3 **RCP DRAINAGE PIPE TRENCH DETAIL**

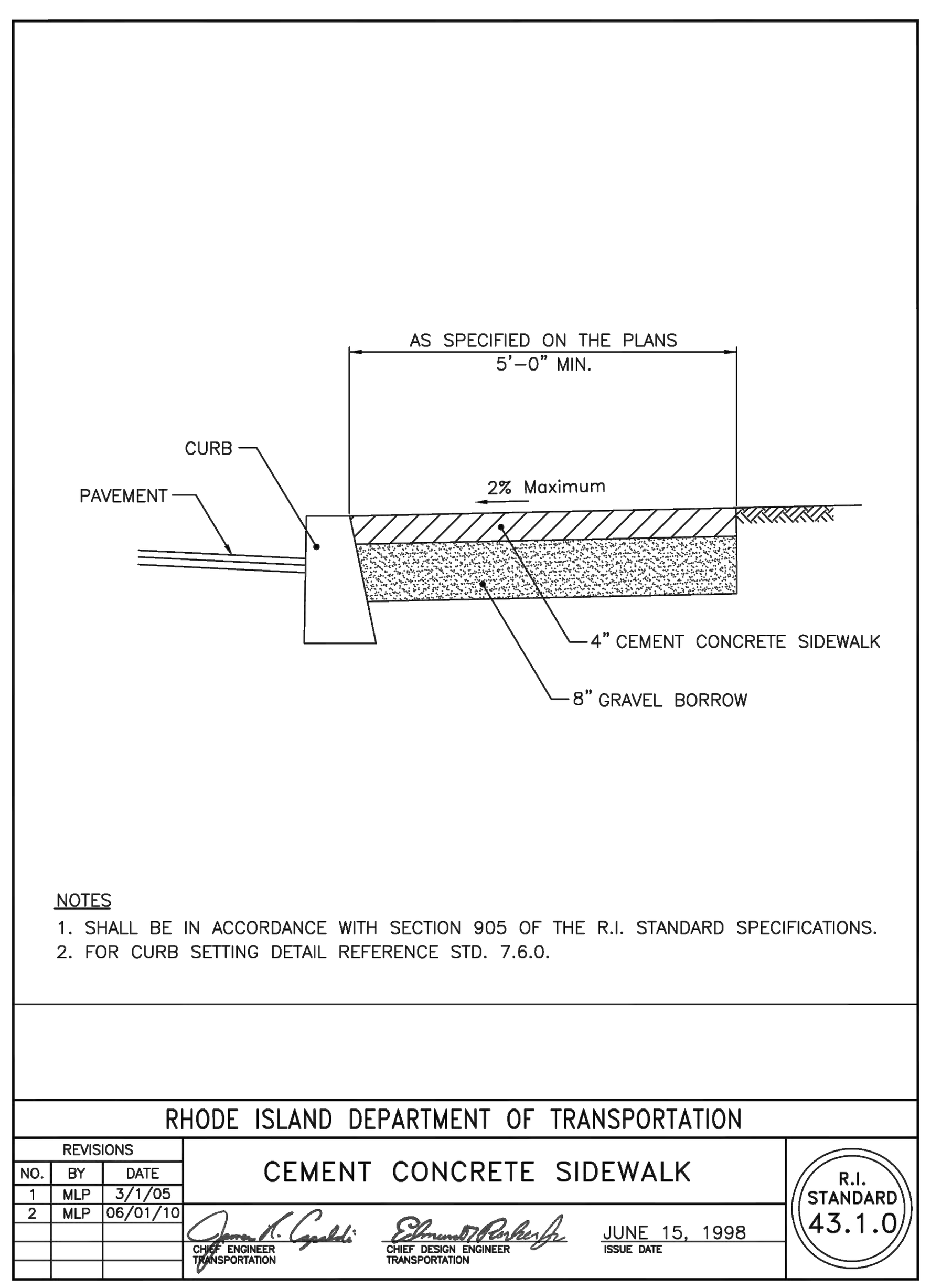
(NOT TO SCALE)

Appendix A: Arlington Infiltration Trench Concept Design



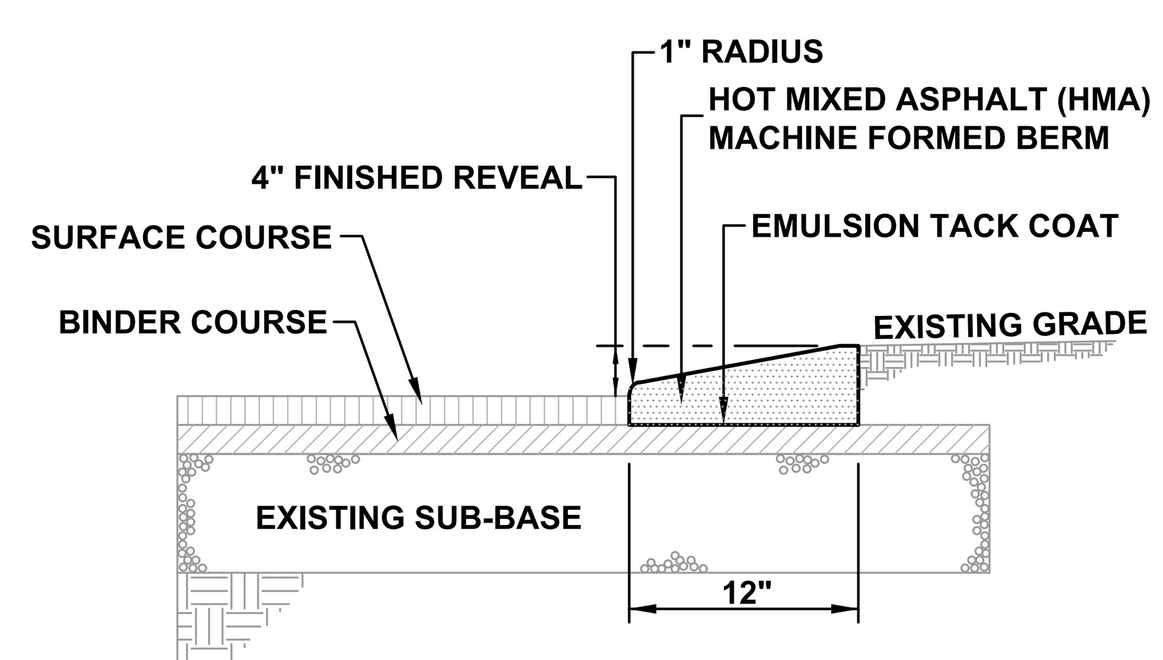
2 / D-3 **ARLINGTON INFILTRATION TRENCH DETAIL**

(NOT TO SCALE)



3 / D-3 **CONCRETE SIDEWALK DETAIL**

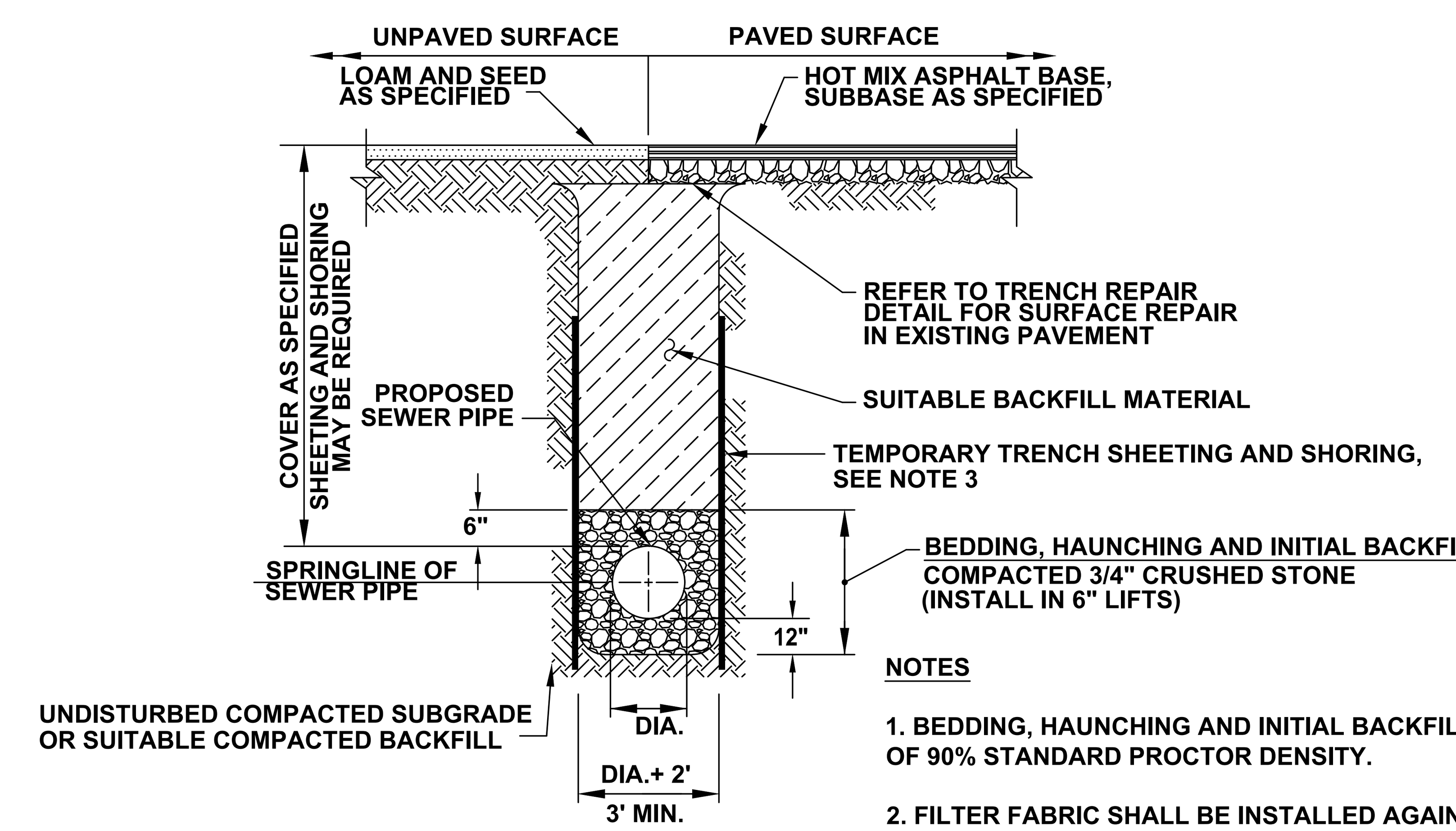
(NOT TO SCALE)



NOTE:
A JOB MIX FORMULA FOR THE HOT MIX ASPHALT THAT WILL BE USED FOR THE CAPE COD BERM SHALL BE SUBMITTED TO THE DPW ENGINEERING DEPARTMENT FOR REVIEW AND APPROVAL AT LEAST THIRTY (30) DAYS PRIOR TO START OF INSTALLATION.

4 / D-3 **CAPE COD BERM DETAIL**

(NOT TO SCALE)



NOTES

1. BEDDING, HAUNCHING AND INITIAL BACKFILL SHALL BE COMPACTED TO A MINIMUM OF 90% STANDARD PROCTOR DENSITY.

2. FILTER FABRIC SHALL BE INSTALLED AGAINST THE TRENCH WALLS IN THE BEDDING AND HAUNCHING ZONES WHEN FINE SANDS, SILT, CLAY OR ORGANIC MATERIALS ARE ENCOUNTERED AT THE TRENCH BOTTOM.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING SHOP DRAWINGS TO THE TOWN ENGINEER FOR TEMPORARY SHEETING AND SHORING FOR ALL UTILITY TRENCH WORK REQUIRING STABILIZATION DURING CONSTRUCTION.

5 / D-3 **SANITARY SEWER TRENCH DETAIL**

(NOT TO SCALE)

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EAST PROVIDENCE, RHODE ISLAND

AARON CHIN-HUI TING
No. 15252
REGISTERED PROFESSIONAL ENGINEER CIVIL
09-22-2025
Not Valid Without Signature

	DESIGN REVISION		RLG		
1	FOR BIDDING	10/14/2025	NJF	ACT	ACT
No.	REVISION	DATE	DRAWN	DESIGN	CHK

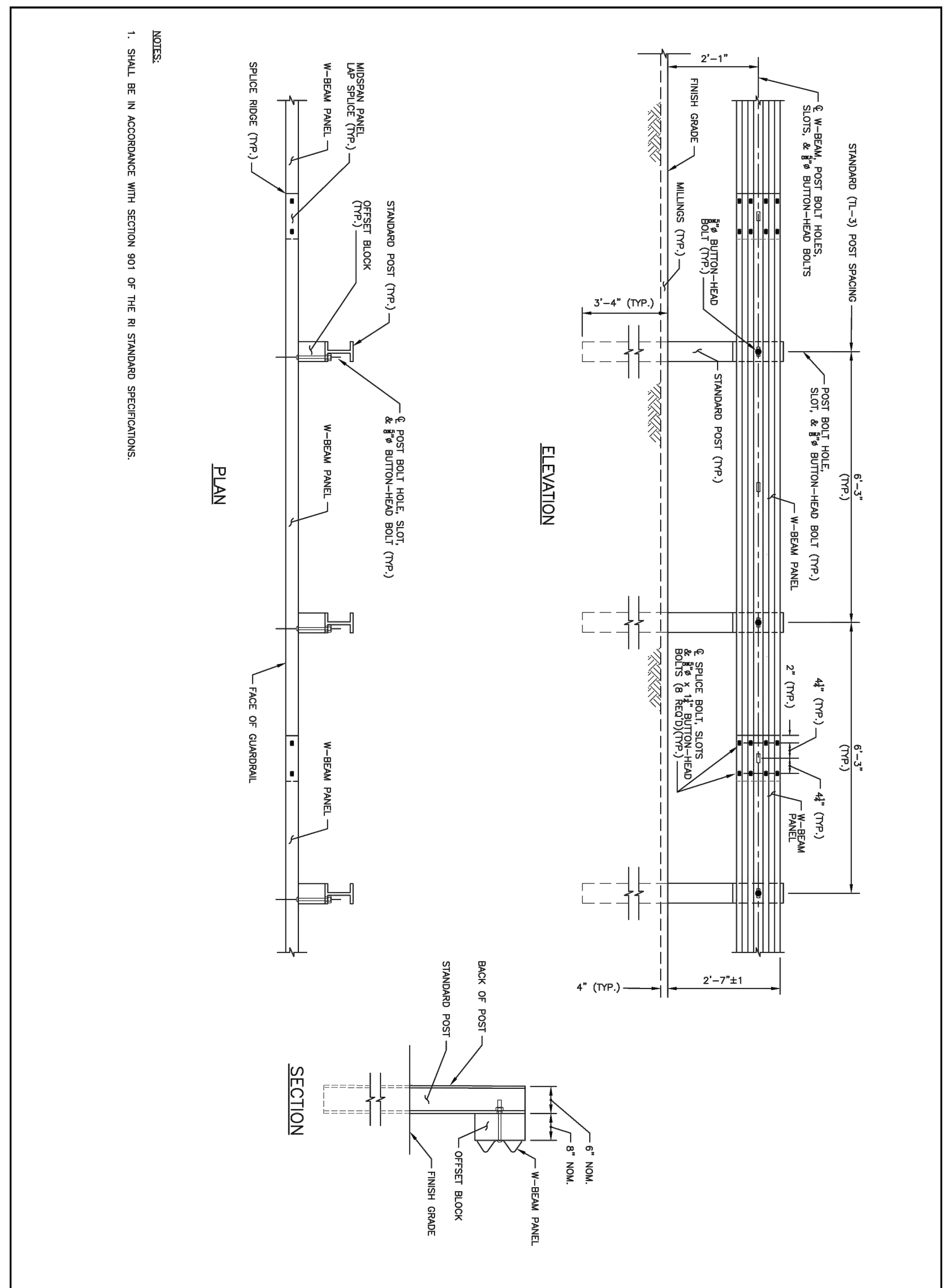
DRAWN BY: LDC | DESIGNED BY: JMG | CHECKED BY: ACT

CIVIL DETAILS

ISSUED FOR BID

DRAWING NO:
D-3

PROJECT NO: 016152
DATE OF ISSUE: 9/18/2025
SHEET NO: 12 OF 16



RHODE ISLAND DEPARTMENT OF TRANSPORTATION

REVISIONS			STEEL BEAM GUARDRAIL, TL-3	R.I. STANDARD 34.2.0
NO.	BY	DATE	Robert Rocchio, CHIEF ENGINEER TRANSPORTATION — 10/21/2022 ISSUE DATE	

1 / D-4

STEEL BEAM GUARDRAIL DETAIL

(NOT TO SCALE)

401 Wampanoag Trail, 3rd Floor
East Providence, RI 02915
Phone:(401) 434-5560
www.trccompanies.com

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145 TAUNTON AVENUE
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AARON CHIN-HUI TING
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CIVIL
09-22-2025
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No.	REVISION	DATE	DRAWN	DESIGN	CHK
	DESIGN REVISION		RLG		
1	FOR BIDDING	10/14/2025	NJF	ACT	ACT

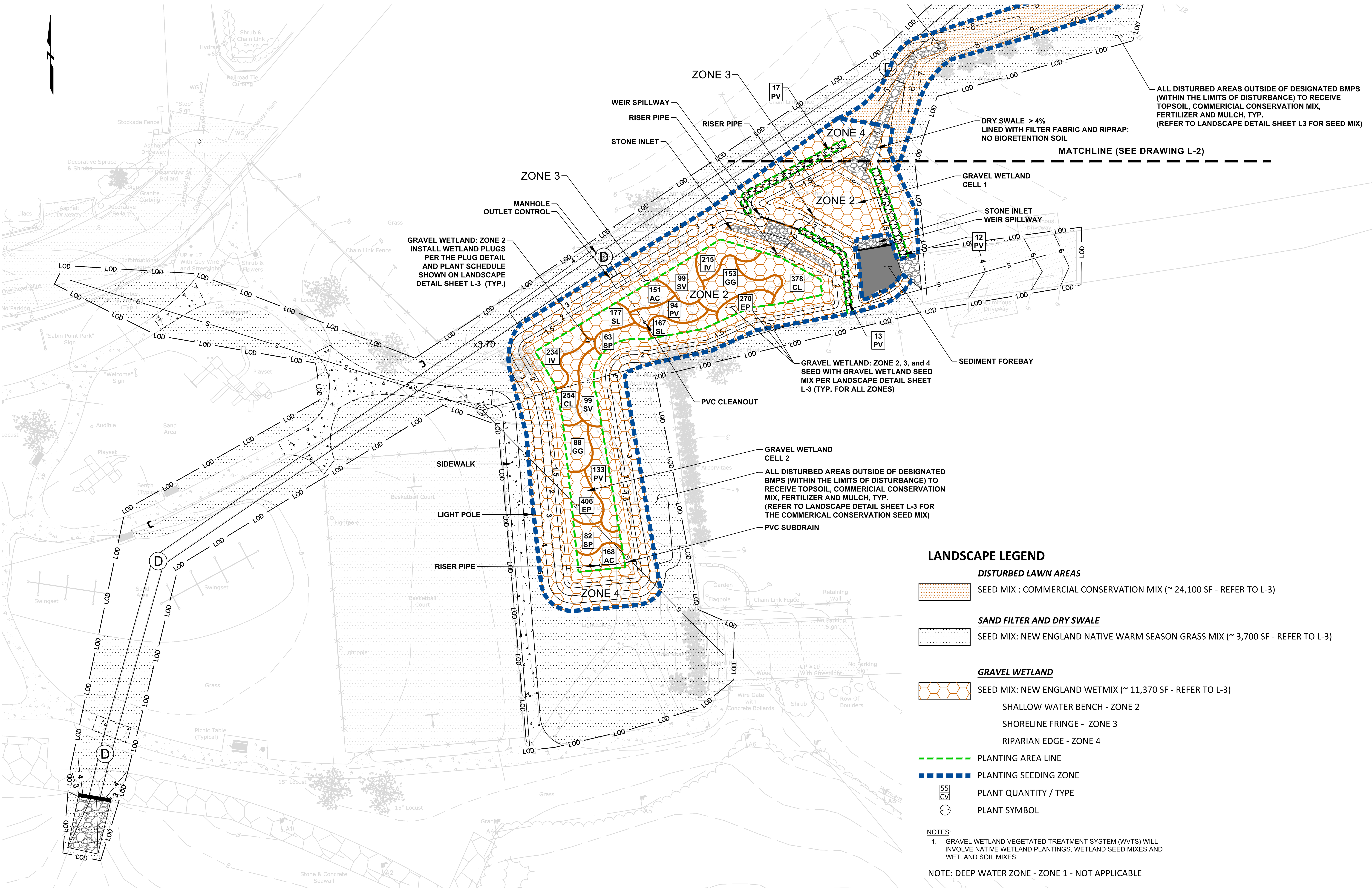
DRAWN BY: LDC | DESIGNED BY: JMG | CHECKED BY: ACT

CIVIL DETAILS

ISSUED FOR BID

DRAWING NO:
D-4

PROJECT NO: 016152
DATE OF ISSUE: 9/18/2025
SHEET NO: 13 OF 16



EXISTING LEGEND

- PROPERTY LINE
- DWELLING/BUILDING
- CONTOURS
- SPOT GRADE
- CURBING
- EDGE OF ASPHALT
- SEWER MANHOLE
- DRAINAGE MANHOLE
- ELECTRIC MANHOLE
- WATER GATE
- GAS GATE
- CATCH BASIN
- DRYWELL
- DROP INLET
- SANITARY SEWER SERVICE
- STORM DRAIN LINE
- GAS SERVICE
- WATER SERVICE
- ELECTRIC DUCT
- OVERHEAD WIRE
- UTILITY POLE
- HYDRANT
- SIGN
- RI HIGHWAY BOUND
- STONE BOUND
- GRANITE BOUND
- IRON PIPE or IRON ROD
- MAGNETIC NAIL
- DRILL HOLE
- CHAINLINK FENCE
- STOCKADE/WOOD FENCE
- RETAINING WALL
- HEDGES/EDGE OF BRUSH

PROPOSED LEGEND

- 1' CONTOUR
- SEWER PIPE
- PIPE
- RIP RAP
- CONCRETE SIDEWALK
- FOREBAY
- PAVED INLET
- STORM MH STRUCTURE
- STORM CB STRUCTURE
- GUARDRAIL

LANDSCAPE LEGEND

DISTURBED LAWN AREAS

SEED MIX : COMMERCIAL CONSERVATION MIX (~ 24,100 SF - REFER TO L-3)

SAND FILTER AND DRY SWALE

SEED MIX: NEW ENGLAND NATIVE WARM SEASON GRASS MIX (~ 3,700 SF - REFER TO L-3)

GRAVEL WETLAND

SEED MIX: NEW ENGLAND WETMIX (~ 11,370 SF - REFER TO L-3)

SHALLOW WATER BENCH - ZONE 2

SHORELINE FRINGE - ZONE 3

RIPARIAN EDGE - ZONE 4

PLANTING AREA LINE

PLANTING SEEDING ZONE

55 CV — PLANT QUANTITY / TYPE

PLANT SYMBOL

NOTES:

1. GRAVEL WETLAND VEGETATED TREATMENT SYSTEM (WVTS) WILL INVOLVE NATIVE WETLAND PLANTINGS, WETLAND SEED MIXES AND WETLAND SOIL MIXES.

NOTE: DEEP WATER ZONE - ZONE 1 - NOT APPLICABLE

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09-22-2025
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0 20 40
SCALE: 1" = 20'

No.	REVISION	DATE	DRAWN	DESIGN	CHK
1	FOR BIDDING	10/14/2025	NJF	ACT	ACT

DRAWN BY: LDC | DESIGNED BY: JMG | CHECKED BY: ACT

LANDSCAPE PLAN - 1

ISSUED FOR BID

DRAWING NO:
L-1

PROJECT NO: 016152
DATE OF ISSUE: 9/18/2025
SHEET NO: 14 OF 16

LANDSCAPE LEGEND

DISTURBED LAWN AREAS

SEED MIX : COMMERCIAL CONSERVATION MIX (~ 24,100 SF - REFER TO L-3)

SAND FILTER AND DRY SWALE

SEED MIX: NEW ENGLAND NATIVE WARM SEASON GRASS MIX (~ 3,700 SF - REFER TO L-3)

GRAVEL WETLAND

SEED MIX: NEW ENGLAND WETMIX (~ 11,370 SF - REFER TO L-3)

SHALLOW WATER BENCH - ZONE 2

SHORELINE FRINGE - ZONE 3

RIPARIAN EDGE - ZONE 4

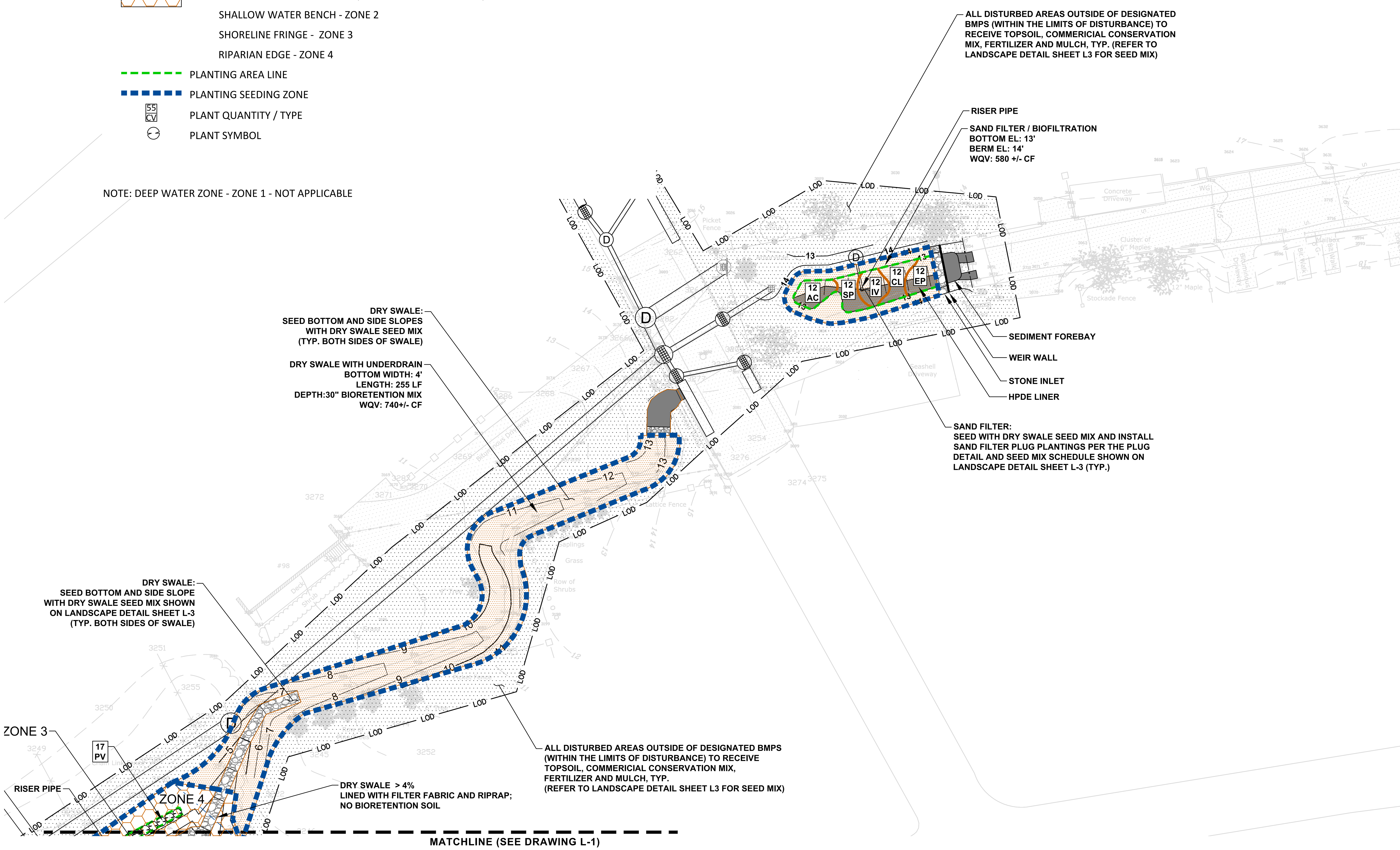
PLANTING AREA LINE

PLANTING SEEDING ZONE

55 CV PLANT QUANTITY / TYPE

PLANT SYMBOL

NOTE: DEEP WATER ZONE - ZONE 1 - NOT APPLICABLE



EXISTING LEGEND

- PROPERTY LINE
- DWELLING/BUILDING
- CONTOURS
- SPOT GRADE
- CURBING
- EDGE OF ASPHALT
- SEWER MANHOLE
- DRAINAGE MANHOLE
- ELECTRIC MANHOLE
- WATER GATE
- GAS GATE
- CATCH BASIN
- DRYWELL
- DROP INLET
- SANITARY SEWER SERVICE
- STORM DRAIN LINE
- GAS SERVICE
- WATER SERVICE
- ELECTRIC DUCT
- OVERHEAD WIRE
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- DRILL HOLE
- CHAINLINK FENCE
- STOCKADE/WOOD FENCE
- RETAINING WALL
- HEDGES/EDGE OF BRUSH

PROPOSED LEGEND

- 1' CONTOUR
- SEWER PIPE
- PIPE
- RIP RAP
- CONCRETE SIDEWALK
- FOREBAY
- PAVED INLET
- STORM MH STRUCTURE
- STORM CB STRUCTURE
- GUARDRAIL

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09-22-2025
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SCALE: 1" = 20' (0, 20, 40)

No.	REVISION	DATE	DRAWN	DESIGN	CHK
1	FOR BIDDING	10/14/2025	NJF	ACT	ACT

DRAWN BY: LDC | DESIGNED BY: JMG | CHECKED BY: ACT

LANDSCAPE PLAN -2

ISSUED FOR BID

DRAWING NO: **L-2**

PROJECT NO: 016152
DATE OF ISSUE: 9/18/2025
SHEET NO: 15 OF 16

GRAVEL WETLAND PLUG PLANTING
PLUGS AT BASE OF GRAVEL WETLAND IN CELL 2 AND ZONE 2 (~ 3,460 SF)

SHALLOW WATER BENCH
TOP OF GRAVEL BED - EMERGENT ZONE PLANTINGS

SYM	BOTANICAL NAME / COMMON PLANT NAME		SPACING	TOTAL PLUGS
AC	ACORUS CALAMOUS	SWEET FLAG	12"	319
CL	CAREX LACUSTRISE	LAKE SEDGE	12"	632
EP	ELOCHARIS PALUSTRIS	COMMON SPIKERUSH	9"	676
GG	GLYCERIA GRANDIS	AMERICAN MANNA GRASS	18"	241
IV	IRIS VERSICOLOR	BLUE FLAG IRIS	12"	449
PV	PANICUM VIRGINIANA	SWITCHGRASS	18"	227
SL	SAGGITARA LATIFOLIA	BROADLEAF ARROWHEAD	12"	344
SP	SPARTINA PECTINATA	PRAIRIE CORDGRASS	18"	145
SV	SCIRPUS VALIDUS	SOFT STEMMED BULRUSH	18"	198

NOTE: ALL PLUGS TO BE 2" PLUGS.

PV - PANICUM VIRGATUM / SWITHGRASS - 42 TOTAL, 2 GAL. CONT. (ORNAMENTAL GRASS)

GENERAL LANDSCAPE AND SEEDING NOTES

1. THE LANDSCAPE PLAN AND DETAILS ARE FOR LANDSCAPING INFORMATION ONLY. PLEASE REFER TO THE SITE LAYOUT PLAN, GRADING PLAN AND/OR UTILITIES PLAN FOR ALL OTHER INFORMATION.
2. THE CONTRACTOR SHALL MONITOR AND GUARANTEE THAT ALL PLANTS SHALL BE HEALTHY AND FREE OF DISEASE FOR A PERIOD OF (1) ONE YEAR AFTER SUBSTANTIAL COMPLETION AND ACCEPTANCE BY THE OWNER. CONTRACTOR SHALL REPLACE ANY DEAD OR UNHEALTHY PLANTS AT CONTRACTOR'S EXPENSE. FINAL ACCEPTANCE SHALL BE MADE IF ALL PLANTS MEET THE GUARANTEE REQUIREMENTS INCLUDING MAINTENANCE. MAINTENANCE RESPONSIBILITIES INCLUDE INVASIVE SPECIES MONITORING, REMOVAL, AND SUPPLEMENTATION. MONITORING OF THE PROJECT SITE SHALL OCCUR IN THE SPRING AND THE FALL TO DETERMINE THE PRESENCE OF INVASIVE SPECIES. SHOULD ANY INVASIVE SPECIES BE IDENTIFIED WITHIN THE PROJECT SITE, THE INVASIVE SPECIES SHALL BE REMOVED ACCORDING TO METHODS MOST LIKELY TO BE EFFECTIVE IN CONTROLLING THAT SPECIES AND SUPPLEMENTING ITS REPLACEMENT WITH APPROPRIATE VEGETATION AND SEED MIX IDENTIFIED (AND APPROVED) ON THIS PLAN AND/OR AN APPROVED EQUAL. ADDITIONAL MAINTENANCE RESPONSIBILITIES INCLUDE: APPROVED CULTIVATING, SPRAYING, WEEDING, WATERING, PRUNING, FERTILIZING, MULCHING, AND ANY OTHER OPERATIONS NECESSARY TO MAINTAIN PLANT VIABILITY. MAINTENANCE SHALL BEGIN IMMEDIATELY AFTER PLANTING AND CONTINUE UNTIL 90 DAYS AFTER FINAL ACCEPTANCE.
3. THE CONTRACTOR SHALL SUPPLY ALL LABOR, PLANTS, APPROVED SEEDING MIX, AND MATERIALS IN QUANTITIES SUFFICIENT TO COMPLETE THE WORK SHOWN ON THE DRAWING(S) AND LISTED IN THE PLANT SCHEDULE(S) AND/OR SEEDING TABLE(S). IN THE EVENT OF A DISCREPANCY BETWEEN QUANTITIES SHOWN IN THE PLANT SCHEDULE AND/OR SEEDING TABLE AND THOSE REQUIRED BY THE DRAWINGS, THE LARGER SHALL APPLY. ALL PLANTS SHALL BE ACCLIMATED BY THE SUPPLY NURSERY TO THE LOCAL HARDINESS ZONE AND BE CERTIFIED THAT THE PLANTING MATERIAL HAS BEEN GROWN FOR A MINIMUM OF ONE (1) TO (2) TWO YEARS AT THE SOURCE AND OBTAINED WITHIN 200 MILES OF PROJECT SITE UNLESS OTHERWISE APPROVED BY OWNER, CERTIFIED LANDSCAPE INSPECTOR, OR LANDSCAPE ARCHITECT.
4. THE LOCATIONS FOR PLANT MATERIAL ARE APPROXIMATE AND ARE SUBJECT TO FIELD ADJUSTMENT DUE TO SLOPE, VEGETATION, AND SITE FACTORS SUCH AS THE LOCATION OF ROCK OUTCROPS. PRIOR TO PLANTING THE CONTRACTOR SHALL ACCURATELY STAKE OUT THE LOCATIONS FOR ALL PLANTS. THE OWNER, CERTIFIED LANDSCAPE INSPECTOR, OR LANDSCAPE ARCHITECT SHALL APPROVE THE FIELD LOCATIONS OR ADJUSTMENTS OF THE PLANT MATERIAL.
5. NO PLANT SHALL BE PLACED IN THE GROUND BEFORE ROUGH GRADING HAS BEEN COMPLETED AND APPROVED BY THE OWNER, CERTIFIED LANDSCAPE INSPECTOR, OR LANDSCAPE CONTRACTOR. STAKING THE LOCATION OF ALL PLANT MATERIAL SHALL BE COMPLETED PRIOR TO PLANTING FOR APPROVAL BY THE OWNER, CERTIFIED LANDSCAPE INSPECTOR, OR LANDSCAPE ARCHITECT. SEE LANDSCAPING DETAILS FOR PLANTING.
6. COORDINATE PLANT MATERIAL LOCATIONS WITH SITE UTILITIES. SEE SITE LAYOUT, GRADING AND/OR UTILITY PLANS FOR STORM, SANITARY, GAS, ELECTRIC, TELEPHONE AND WATER LINES. UTILITY LOCATIONS ARE APPROXIMATE. EXERCISE CARE WHEN DIGGING IN AREAS OF POTENTIAL CONFLICT WITH UNDERGROUND OR OVERHEAD UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE DUE TO CONTRACTOR'S NEGLIGENCE AND SHALL REPLACE OR REPAIR ANY DAMAGE AT CONTRACTOR'S EXPENSE.
   - TOPSOIL SHALL BE INSTALLED AT A MINIMUM DEPTH OF 4 INCHES. CONTRACTOR SHALL SUBMIT TOPSOIL TO A CERTIFIED TESTING LABORATORY TO DETERMINE PH, FERTILITY, ORGANIC CONTENT AND MECHANICAL COMPOSITION. THE CONTRACTOR SHALL SUBMIT THE TEST RESULTS FROM REGIONAL EXTENSION OFFICE OF USDA TO THE OWNER, CERTIFIED LANDSCAPE INSPECTOR, OR LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL. CONTRACTOR SHALL INCORPORATE AMENDMENTS FOR GOOD PLANT GROWTH AND PROPER SOIL ACIDITY RECOMMENDED FROM THE TOPSOIL TEST.
   - BIORETENTION SOIL SHOULD BE TESTED FOR PH, PHOSPHOROUS, AND POTASSIUM, AS WELL AS ORGANIC MATTER AND SOLUBLE SALTS. THE RIDEM STORMWATER DESIGN AND INSTALLATION STANDARDS MANUAL RECOMMENDS THAT PHOSPHOROUS (P_2O) LEVELS BE LIMITED TO 69 PPM OR LESS TO PROMOTE EFFECTIVE STORMWATER TREATMENT AND REDUCE NUTRIENT LOADING IN SENSITIVE COASTAL AREAS.
   - ALL SLOPES GREATER THAN 3:1 RECEIVING A WILDFLOWER, WETLAND, AND/OR GRASS SEEDING MIXTURE SHALL BE COVERED WITH AN EROSION CONTROL BLANKET.
   - ALL WILDFLOWERS AND GRASSES SOWED SHALL BE ALLOWED TO GROW TO THEIR NATURALLY OCCURRING HEIGHTS WHENEVER POSSIBLE. NATIVE WILDFLOWERS AND/OR GRASSES CAN BE MOWED/MAINTAINED (WITHIN ACCEPTABLE AREAS IDENTIFIED AND/OR APPROVED BY APPROPRIATE REGULATORY AGENCIES) AS OFTEN AS NEEDED TO KEEP THE VEGETATION AT A DESIRED AND/OR MANAGEABLE/MANICURED HEIGHT.

SEED MIX for GRAVEL WETLAND ZONES 2, 3 AND 4 (~11,370 SF)

NEW ENGLAND WETLAND PLANTS, INC
14 Pearl Lane South Hadley, MA 01075
PHONE: 413-548-8000 FAX 413-549-4000
EMAIL: INFO@NEWP.COM WEB ADDRESS: WWW.NEWP.COM

New England Wetmix (Wetland Seed Mix)

Botanical Name	Common Name	Indicator
Carex vulpinoidea	Fox Sedge	OBL
Carex scoparia	Blunt Broom Sedge	FACW
Carex lurida	Lurid Sedge	OBL
Carex lupulina	Hop Sedge	OBL
Poa palustris	Fowl Bluegrass	FACW
Bidens frondosa	Beggar Ticks	FACW
Scirpus atrovirens	Green Bulrush	OBL
Asclepias incarnata	Swamp Milkweed	OBL
Carex crinita	Fringed Sedge	OBL
Vernonia noveboracensis	New York Ironweed	FACW+
Juncus effusus	Soft Rush	FACW+
Aster lateriflorus (Symphyotrichum lateriflorum)	Starved/Calico Aster	FACW
Iris versicolor	Blue Flag	OBL
Glyceria grandis	American Mannagrass	OBL
Mimulus ringens	Square Stemmed Monkey Flower	OBL
Eupatorium maculatum (Eutrochium maculatum)	Spotted Joe Pye Weed	OBL

APPLY: 18 LBS/ACRE :2500 sq ft/lb

The New England Wetmix (Wetland Seed Mix) contains a wide variety of native seeds that are suitable for most wetland restoration sites that are not permanently flooded. All species are best suited to moist ground as found in most wet meadows, scrub shrub, or forested wetland restoration areas. The mix is well suited for detention basin borders and the bottom of detention basins not generally under standing water. The seeds will not germinate under inundated conditions. If planted during the fall months the seed mix will germinate the following spring. During the first season of growth several species will produce seeds while other species will produce seeds after the second growing season. Not all species will grow in all wetland situations. This mix is comprised of the wetland species most likely to grow in created/restored wetlands and should produce more than 75% ground cover in two full growing seasons.

The wetland seeds in this mix can be sown by hand, with a hand-held spreader, or hydro-seeded on large or hard to reach sites. Lightly rake to insure good seed-to-soil contact. Seeding can take place on frozen soil, as the freezing and thawing weather of late fall and late winter will work the seed into the soil. If spring conditions are drier than usual watering may be required. If sowing during the summer months supplemental watering will likely be required until germination. A light mulch of clean, weed free straw is recommended.

New England Wetland Plants, Inc. may modify seed mixes at any time depending upon seed availability. The design criteria and ecological function of the mix will remain unchanged. Price is $/bulk pound, FOB warehouse, Plus SH and applicable taxes.

SEED MIX for ALL DISTURBED AREAS COMMERCIAL CONSERVATION MIX (~24,100 SF)

25.0% FESTUCA RUBRA (CREEPING RED FESCUE)

25.0% LOLIUM MULTIFLORUM (ANNUAL RYEGRASS)

25.0% LOLIUM PERENNE, 'BLACKSTONE' (PERENNIAL RYEGRASS, 'BLACKSTONE')

25.0% LOLIUM PERENNE, 'CONFETTI III' (PERENNIAL RYEGRASS, 'CONFETTI III') (TURF TYPE))
A. SEED RATE AT 100 LBS. PER ACRE
B. RESTRICT THIS SEED MIXTURE TO FLAT AREAS WITHIN AND SURROUNDING THE STAGING AREAS

SEED MIX for DRY SWALE AND SAND FILTER (~3,700 SF)

NEW ENGLAND WETLAND PLANTS, INC
14 Pearl Lane South Hadley, MA 01075
PHONE: 413-548-8000 FAX 413-549-4000
EMAIL: INFO@NEWP.COM WEB ADDRESS: WWW.NEWP.COM

New England Native Warm Season Grass Mix

Botanical Name	Common Name	Indicator
Schizachyrium scoparium	Little Bluestem	FACU
Andropogon gerardii	Big Bluestem	FAC
Elymus virginicus	Virginia Wild Rye	FACW-
Sorghastrum nutans	Indian Grass	UPL
Festuca rubra	Red Fescue	FACU
Panicum virgatum	Switch Grass	FAC

APPLY: 23 LBS/ACRE :1900 sq ft/lb

The New England Native Warm Season Grass Mix contains a broad spectrum of native warm season grasses to insure that a variety of the species will survive in the sandy, droughty conditions typically found along roadsides, gravel mine reclamation areas, and other low-fertility well drained soil conditions. This mix is somewhat slow to germinate and establish during the first year of planting, but it will produce good cover by the end of the second growing season to produce long-living native stands. The cool season grasses have been added as a "starter" seed for erosion control. This mix has excellent heat and drought tolerance, and grows best in well drained soils. Warm season grasses provide excellent year round cover and food for wildlife, particulary as winter cover for small animals. This mix can be applied by hydroseeding, by mechanical spreader or by hand. Best results are obtained with a mid-late Spring seeding.

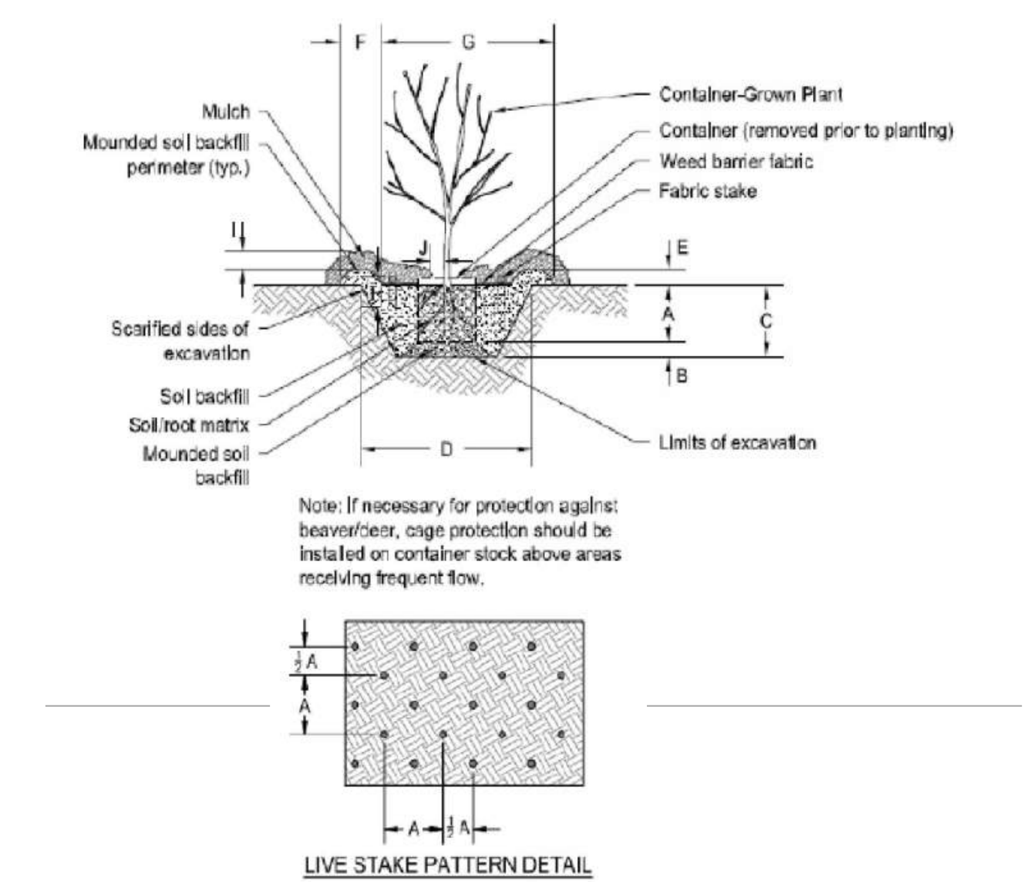
New England Wetland Plants, Inc. may modify seed mixes at any time depending upon seed availability. The design criteria and ecological function of the mix will remain unchanged. Price is $/bulk pound, FOB warehouse, Plus SH and applicable taxes.

SAND FILTER PLUG PLANTING
PLUGS AT BASE OF SAND FILTER (470 SF)

SAND FILTER 3:1 SLOPE WITH LINER

SYM	BOTANICAL NAME /	COMMON PLANT NAME	SPACING (FT)		TOTAL PLUGS (ROUNDED)
AC	ACORUS CALAMUS	SWEET FLAG	3.0		12
CL	CAREX LACUSTRIS	LAKE SEDGE	3.0		12
EP	ELEOCHARIS PALUSTRIS	COMMON SPIKERUSH	3.0		12
IV	IRIS VERSICOLOR	BLUE FLAG IRIS	3.0		12
SP	SPARTINA PECTINATA	PRAIRIE CORDGRASS	3.0		12
LM	LOLIUM MULTIFLORUM	ANNUAL RYEGRASS*	BROADCAST	@ 1 LBS / 1,000 SF	TEMPORARY COVER

NOTE: PLUGS SHALL BE PLANTED IN GROUPS OF NO FEWER THAN 3 AND NO MORE THAN 12 SIMILAR SPECIES IN A GROUP.



BARE ROOT & PLUG PATTERN DETAIL
(TYPICAL SPACING PER PLAN, NOTES, AND SCHEDULE)

STORMWATER MANAGEMENT GRAVEL WETALND -SEED MIXTURE & PLANTING INSTRUCTIONS:

* SPECIAL NOTE: SHALLOW WATER BENCH VEGETATION MUST BE ESTABLISHED IN ZONE 2 BEFORE THE POND IS RENDERED IN-SERVICE.

A. SEE DETAIL NOTES 2, 5 AND 6 FOR PLANTING DURATION AND CONSTRUCTION LIMITATIONS.
1. SEED WET MIX IN ZONE 2. SUPPLEMENT WITH ZONE 2 ZONE PLUGS.
2. SEED WET MIX IN ZONES 3.
3. SEED ZONE 4 NEXT.
4. HAND BROADCAST ALL ZONES.
5. BRING SEED IN CONTACT WITH SOIL BY RAKING.

STORMWATER MANAGEMENT (SWM) GRAVEL WETLAND: PLANTING DURATION AND CONSTRUCTION LIMITATIONS:

STRONGLY RECOMMEND SCHEDULING SITE PREPARATION AND EARTHWORK OPERATIONS FOR THE GRAVEL WETLAND WELL IN ADVANCE OF PLANTING NATIVE VEGETATION/SEED MIXTURES. SUCCESSFUL PLANTING SHALL HAVE AT LEAST 1 FULL GROWING SEASON TO BE ESTABLISHED, AND THIS WORK WILL BE PHASED OVER THE COURSE OF 2 CALENDAR YEARS. (TIMING - APRIL 1 AND JUNE 30, AND SEPTEMBER 1 THROUGH SEPTEMBER 30)

- SITE PREP, EARTHWORK, AND SEEDING : TOPSOIL STRIPPING, ROUGH GRADING, PLACEMENT OF 4" TOPSOIL, ANNUAL RYEGRASS (40LBS/ACRE) AND PERMANENT SEEDING MIXTURES (SEE RATES FOR EACH MIX) , AND EROSION CONTROL MEASURES. USE OF A BONDED FIBER MULCH THROUGHOUT THE ENTIRE BASIN IS PREFERED. ALL MAINTENANCE REPAIRS FOR THIS FACILITY AND PLANTINGS SHALL BE CONDUCTED BY THE CONTRACTOR PER THE APPROVED SWPPP AND IT'S RECOMMENDATIONS, AND INSPECTED REGULARLY UNTIL VEGETATION IS ESTABLISHED.
- ADDITIONAL OVERSEEDING FOR PERMANENT SEED MIXTURES AND REMAINING PLANTINGS : REPAIR ANY SOIL EROSION PROBLEMS, OVERSEED BASIN AREAS USING DRILL SEED METHOD(S), PLANT BARE ROOT AND PLUG MATERIAL PER PLANTING SCHEDULES, AND PROVIDE NATURAL ROLLED EROSION CONTROL BLANKET - 2 YEAR MINIMUM.

TRC
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Phone:(401) 434-5560
www.trccompanies.com

CITY OF EAST PROVIDENCE
145 TAUNTON AVENUE
EAST PROVIDENCE, RHODE ISLAND 02914

STORMWATER QUALITY IMPROVEMENT RETROFITS
LOCUST ST., NARRAGANSETT AVE. & MIDDLE ST.
EAST PROVIDENCE, RHODE ISLAND

AARON CHIN-HUI TING
No. 15252
REGISTERED PROFESSIONAL ENGINEER CIVIL
09-22-2025
Not Valid Without Signature

0 20 40
SCALE: 1" = 20'

No.	REVISION	DATE	DRAWN	DESIGN	CHK
1	FOR BIDDING	10/14/2025	NJF	ACT	ACT

DRAWN BY: LDC | DESIGNED BY: JMG | CHECKED BY: ACT

LANDSCAPE DETAILS

ISSUED FOR BID

DRAWING NO:
L-3

PROJECT NO: 016152
DATE OF ISSUE: 9/18/2025
SHEET NO: 16 OF 16

DATE: Oct 13, 2025 – 4:53PM
FILENAME: \\employees\gis\arcgispro\1-PROJECTS\ESS_Group_Projects\Waltham\Jobs\E424-000 Sabin Point – East Providence\04 GRAPHICS\CAD\Treatment Train\Drawings\IFC\E424-00 Sabin-Landscape Plan.dwg

October 14, 2025

CITY OF EAST PROVIDENCE
DEPARTMENT OF PUBLIC WORKS - ENGINEERING DIVISION
REQUEST FOR PROPOSALS
EP24/25-026
STORMWATER QUALITY IMPROVEMENT RETROFITS

Addendum #3 - Questions and Responses

The following is a list of questions posed by Bidders during the Question and Answer period. In the event of discrepancy between the Contract Documents and the contents of this Addendum, contents of this Addendum will prevail.

1. What pay item is "GUARDRAIL WITH MUTCD COMPLIANT END OF ROADWAY MARKER" covered under referenced on drawings C-1 and C-2

   The guardrails and roadway markers associated with both the sand filter and the gravel wetland are now included under Item Nos.4 and 6, respectively.

2. What pay item is "REMOVE AND REPLACE TIMBER GUARDRAIL" covered under referenced on drawing EC-1 also is there a detail for this?

   The removal of the timber guardrail is covered under Item No. 2. It will not be replaced. The installation of new guardrails for both the sand filter (at the end of Locust Street) and the gravel wetland (at the end of Middle Street) is included under Item Nos. 4 and 6, respectively. Rhode Island Standard Detail No. 34.2.0 "Steel Beam Guardrail TL-3" is included on Drawing No. D-4. The guardrail should be installed in accordance with Section 901 of the Rhode Island Standard Specifications.

3. Plan page C-1 calls for a "TIDEFLEX GATE VALVE" on the end of a 29" x 45" elliptical pipe and references detail 6 on drawing D-2. Drawing D-2 had no reference to this. Drawing D-3 detail 3 references a "TIDELFEX SERIES TF-1 CHECK VALVE DETAIL" but shows a 30" RCP OD. Please advise

   The detail has been deleted. The Tideflex gate valve as specified in the Bid documents is to be a TF-1 duck bill style gate valve or equivalent to be installed on the 29" x 45" elliptical reinforced concrete pipe.

4. Plan page C-1 calls out "CONCRETE HEADWALL" with detail 5 on drawing D-2 and "RIP RAP OUTLET PROTECTION" with detail 4 on D-2. It looks like the detail references on D-2 were inadvertently switched.

The detail references on Drawing No. C-1 were adjusted to match Drawing No. D-2.

5. Can you please confirm the match lines are in the correct locations for C-1/C-2 and EC-1 and EC-2?

   The match lines on Drawing Nos. C-1/C-2 and Drawing Nos. EC-1/EC-2 have been adjusted to the correct locations.

6. Please better define the limits and intent of the Dry Swale. The hatching shown leaving GW Cell 1 called out as "DRY SWALE SLOPE >4%" does not seem to match details on SP-2 titled "DRY SWALE (ALIGNMENT C-C) CROSS SECTION PLAN VIEW" and "DRY SWALE CROSS SECTION C-C". Looking at the details on SP-2 it looks like there is a section of Dry Swale without Rip Rap that continues from C-1 onto C-2 that is shown unhatched? Is there a detail for the section called out as "DRY SWALE SLOPE >4%"??

   The dry swale will be topped with bioretention mix and seed, except for the approximately 63 LF portion (hatched) approaching GW Cell 1. This 63 LF portion will be topped with permeable geotextile filter fabric and 6" rip rap.

7. Should H-20 loading be assumed for culverts?

   Yes, concrete culverts should be rated for H-20 loading.

8. Please provide additional design information for the beach headwall (length, width, height, reinforcing re bar). Specifically, the pipe opening size. The earth retaining side of the headwall has a 29"x45" elliptical RCP drain incoming. RIDOT Headwall Detail D2-4 is for round pipe rather than elliptical. The water side of the headwall has a 30" TideFlex TF-1 Check Valve outfall. How is the transition between the different sizes to be constructed?

   The concrete headwall will have an elliptical opening to fit the 29" x 45" inner diameter elliptical reinforced concrete pipe. The headwall will be designed in accordance with Rhode Island Standard Detail 2.1.0 to receive an elliptical style reinforced concrete pipe.

   The reference to the 30" TF-1 Tideflex check valve detail has been removed. The gate valve will be a TF-1 duck bill style gate valve or equivalent to be installed on the 29" x 45" elliptical pipe.

9. The beach headwall is shown without a footing in Detail D2-4, but with a footing in Detail D2-5. Please clarify.

   The contractor is to reference detail D2-4 for headwall construction, including footing.

10. How is the 30" TideFlex TF-1 Check Valve to be mounted? As a flanged TF-1 mounted to the headwall? Or mounted to a headwall thimble? Or mounted to headwall wall pipe? The cost difference between the mounting options can be significant.

    The duck bill gate valve will be be mounted on the 29" x 45" inner diameter elliptical reinforced concrete pipe.

11. Item 1 Mobilization/ Demobilization requires the general contractor provide police detail as needed for the safe ingress and egress for trucks and other construction vehicles during the entire contract. Police details are typically paid for under an allowance line item since it cannot be quantified at bid time. We recommend an allowance line item for police details be added. Or if preferred the police be paid directly by the City, with the general contractor only responsible for coordination of details.

    An allowance item 30 was added to the bid form for Traffic Control via Uniformed Officers. Police Detail was removed from Item 1.

12. Item 2 Site Preparation requires furnishing and installing a temporary chain link fence around the limits of disturbance (LOD shown on plans). This would be a substantial amount of temporary fence. Please confirm, or clarify where required.

    The Contractor is responsible for site control and will need to provide temporary fencing or other form of temporary barrier around work areas to prevent pedestrian access from the public park and/or the nearby residential areas.

13. Item 7 Storm Sewer Improvements include trenching and excavation to install storm piping and structures. Under Items 16 through Item 26 includes furnishing and installing the storm piping and structures. There appears to be overlap. Please clarify Item 7 relative to Items 16 through 26.

    Item 7 does not include furnishing and installing structures and reinforced concrete pipe and/or plastic pipe for storm sewer systems, except for the Arlington-Style trenches (3), check valve, headwall and level spreader at the beach. Item 7 is for excavation, backfill, SOE, clean out, inspection, testing, maintenance and as-built for the new storm sewer system. The furnishing and installation of the storm sewer piping and structures are included in Items 16 through 26.

14. Item 8 Sanitary Sewer Improvements include trenching and excavation to install sanitary piping and structures. Under Items 27 and Item 28 include furnishing and installing the storm piping and structures. There appears to be overlap. Please clarify Item 8 relative to Items 27 through 28.

    Item 8 does not include furnishing and installing structures and plastic pipe for sanitary sewer system. Item 8 is for the excavation, backfilling, SOE, inspection, maintenance, testing and as-built of the new sanitary sewer system. The furnishing and installation of the sanitary sewer piping and structures are included in Items 27 through 28.

15. The Bid Form has columns for "Bid Price in Figures" and "Bid Price in Words", but it doesn't have a column for "Unit Rate". What is the reimbursement method for bid items that potentially have variable quantities?

    A "Bid Unit Price" column was added to the Bid Form.

16. Please confirm <u>removal</u> of the Willow Tree at approximately 3+25 is part of the scope of work.

Confirmed. Bidders to include under Item 2 as part of clearing and grubbing.

17. Please be aware the Linden tree at approximately 2+75 may be harmed with the construction of the sewer relocation.

    Acknowledged.

18. Please be aware the Maple tree at approximately 6+50 may be harmed with the construction of the storm sewer improvements on Narragansett Avenue.

    Acknowledged.

End of Addendum #3 Q&A