



CITY OF PROVIDENCE, RHODE ISLAND

Department: Providence Water

RFP Title: Trinity Square Area Water Main Rehabilitation

Opening Date: 08/28/2023

Addendum #: 5

Issue Date: 08/23/2023

The purpose of this addendum is:

Contract documents have been modified, amended and supplemented.



ADDENDUM NO. 5

TO: ALL CONTRACT DOCUMENT HOLDERS OF RECORD
ALL PROSPECTIVE BIDDERS

FROM: PROVIDENCE WATER
125 DUPONT DRIVE
PROVIDENCE, RHODE ISLAND 02907
PHONE: (401) 521-6300

DATE ISSUED: WEDNESDAY, AUGUST 23, 2023

RE: TRINITY SQUARE AREA WATER MAIN REHABILITATION
CONTRACT NO. 8-23

**BID OPENING
DATE:** MONDAY, AUGUST 28, 2023 AT 2:15 PM

**BID OPENING
LOCATION:** BOARD OF CONTRACT AND SUPPLY MEETING
CITY COUNCIL CHAMBERS
PROVIDENCE CITY HALL
25 DORRANCE STREET
PROVIDENCE, RHODE ISLAND 02903

**LAST WRITTEN
QUESTIONS DUE:** FRIDAY, AUGUST 18, 2023

This Addendum No. 5, including all referenced attachments, modifies, amends, and supplements designated parts of the Contract Documents to the above-referenced project and shall be part of the Contract Documents as provided in the "Instructions to Bidders" for the above-referenced project.

Acknowledge receipt of this Addendum by inserting its number and date on page 00 41 00 – 1 of the Bid Form. Failure to do so may subject the Bidder to disqualification.

The Contract Documents are hereby modified, amended, and supplemented as follows:

ATTACHMENTS

The following attachments are included with this Addendum:

1. Section 02576 Pavement Repair and Resurfacing (Revised Addendum No. 5)

SPECIFICATIONS

- 1. SPECIFICATION 01025 – MEASUREMENT AND PAYMENT:** Page 01025-9, **ADD** the following two paragraphs, Paragraph 1.14.B.2 and 1.14.B.3, immediately after Section 01025 Paragraph 1.14.B.1:
 - “2. If the thickness of pavement ordered placed by the Owner or Owner’s Designee is greater than 4”, payment will be prorated on the basis of the thickness of material actually ordered placed. No payment will be made for any additional pavement or sub-base not specifically ordered in writing by the Owner or Owner’s Designee.
 3. Payment Item 14B shall be used for placement of bituminous concrete pavement over concrete subbase installed to replace existing concrete subbase.”
- 2. SPECIFICATION 01025 – MEASUREMENT AND PAYMENT:** Page 01025-10, **ADD** the following Paragraph 1.15.B.2 immediately after Section 01025 Paragraph 1.15.B.1:
 - “2. If the thickness of concrete sub-base ordered placed by the Owner or Owner’s Designee is greater than that specified, payment will be prorated on the basis of the thickness of material actually ordered placed. No payment will be made for any additional pavement or sub-base not specifically ordered in writing by the Owner or Owner’s Designee.”
- 3. SPECIFICATION 01025 – MEASUREMENT AND PAYMENT:** Page 01025-10, Paragraph 1.16.A.1, first line, after the words “curb-to-curb”, **INSERT** the words “ or patch areas, as approved by the Owner”.
- 4. SPECIFICATION 01025 – MEASUREMENT AND PAYMENT:** Page 01025-10, Paragraph 1.16.B.1, first and second line, **REMOVE** the words “for curb-to-curb milling and pavement shall include one 1-inch thick bituminous base course and 1-inch thick bituminous surface course” and **REPLACE** with “for curb-to-curb milling and pavement (or discrete street patching as approved by the Owner) shall include a 2-inch thick bituminous surface/top course”.

5. **SPECIFICATION 01025 – MEASUREMENT AND PAYMENT:** Page 01025-10, Paragraph 1.16.A.1, first line, after the words “curb-to-curb”, **INSERT** the words “ or patch areas, as approved by the Owner”.
6. **SPECIFICATION 01025 – MEASUREMENT AND PAYMENT:** Page 01025-12, Paragraph 1.18.B.2, **INSERT** the following new Paragraph 1.18.B.3:

“3. Payment for curbing replacement under this item is for areas outside of the limits of disturbance, as selected and approved by the Owner. All other curbing replacement disturbed by the Contractor shall be restored at no additional cost to the Owner. “
7. **SECTION 02576 – PAVEMENT REPAIR AND RESURFACING:** **REPLACE** Section 02576 Pavement Repair and Resurfacing in its entirety with the attached revised Section 02576 – Pavement Repair and Resurfacing (Revised Addendum No. 5).
8. **SECTION 02616 – DUCTILE IRON PIPE AND FITTINGS:** Page 02616-3 Paragraph 2.02.B Line 3, **DELETE** “low carbon steel conforming to ASTM A307, Grade B” and **REPLACE** with “Type 304 stainless steel”.
9. **SECTION 02616 – DUCTILE IRON PIPE AND FITTINGS:** Page 02616-3 Paragraph 2.02.C Line 5, **DELETE** “low carbon steel conforming to ASTM A307, Grade B” and **REPLACE** with “Type 304 stainless steel”.

WRITTEN QUESTIONS AND COMMENTS SUBMITTED

All questions asked during the pre-bid conference meeting are documented with responses provided in the Pre-bid conference meeting report that is included with Addenda No. 2, No. 3, and No. 4. The follow additional questions were also received.

1. **QUESTION:** The Mill and overlay item (item 16); payment specifies installation of 1 inch binder and 1 inch wearing course. This is different from all previous bids, where the entire 2 inch thickness was Wearing course. Please confirm the intent for installation of 2 separate materials, in two separate passes.
RESPONSE: Measurement and Payment was revised in Addendum No. 5 to address this question.

- 2. QUESTION:** The Measurement and Payment Section provided in Addendum 1 required that the overlay be installed in “one 1.0-in thick bituminous base course and one 1-inch thick bituminous surface course”. Paving subcontractors Quoting this project have told us that the RIDOT standard referenced in the overlay portion of the specification requires a minimum thickness of 2” for Class 12.5 and 1.5” for Class 9.5. The one inch thickness limit is a constructability issue, and requires a clear resolution.
RESPONSE: See Response to Question 1 above.
- 3. QUESTION:** Good Afternoon, your spec states to mill and overlay in two 1" lifts. RIDOT spec is mill and overlay and replace with one 2" lift. We don't want any issues with RIDOT. What would you like us to do.
RESPONSE: See Response to Question 1 above. Section 02576 Pavement Repair and Resurfacing was revised in Addendum No. 5.
- 4. QUESTION:** Regarding the Mill & Overlay (Bid Item No. 16). It states on page 36 of addendum 1 that we need to mill 2” and install 1” of base and 1” of surface course. Our mill and overlay subcontractor stated that the state will not accept 1” and 1” installation and It needs to be 2” of surface course. Please advise.
RESPONSE: See Response to Question 1 above.
- 5. QUESTION:** On sheet C-9 @ the high school on Broad Street there is an 8” fire service. Do we need 8” bypass piping or will 6” be sufficient?
RESPONSE: 8” bypass piping will be required for any 8” fire service. Bypass sizes are required to be equal to the service size.
- 6. QUESTION:** Referring to the change to Spec Section 02616 – Ductile Iron Pipe And Fittings: Page 02616-1, ADD the following Para. 1.01E after 1.01.D: ““E: Stainless steel bolts and nuts to be used on all (emphasis added) Buried Items.” The Change is further made to page 02616-5, Para.2.06.D line 4, Delete “black steel” and Replace with “stainless steel”. This second change is consistent with prior PWSB specifications, as it addresses the Bolts used in Flexible couplings needed to join Ductile to Cast Iron of different diameters. My concern, and request for clarification, is with the first change, to 02616-1 para 1.01E. Does “All buried Items” Refer only to the Couplings as referenced and detailed in the second change on page 02616-5? There is no specific change made to the section on mechanical joints Section page 02616-3 para 2.02.B and 2.02.C. Does the addition of 1.01.E require the contractor to Purchase Stainless steel Bolts for the Mechanical Joint Restraint glands? This would be a significant deviation from Typical PWSB specifications. Based on the Quantity of Mechanical joints estimated in this project, changing the low carbon bolts to stainless steel

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mechanical joint bolts would add approximately \$400,000 to the costs for the MJ fittings and restraints. Please clarify.

RESPONSE: PWSB has adopted a standard for this project that uses stainless steel nuts and bolts on all buried couplings and fittings.

-END OF ADDENDUM NO. 5-

ATTACHMENT No. 1

SECTION 02576
PAVEMENT REPAIR AND RESURFACING

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. Furnish all labor, material, equipment, and incidentals required and replace all pavement removed over trenches or excavations or otherwise disturbed by the Contractor's operations.
- B. Paving and resurfacing refers to all temporary and permanent placements of bituminous concrete, Portland Cement concrete, stone, and/or brick material, on streets, roads, highways, private rights of way, curbs, driveways, and sidewalks, associated with removal and/or installation of water mains, access pits for water main cleaning and lining, and/or installation of appurtenances or for work performed in this contract.
- C. Temporary 2-inch thick bituminous concrete pavement shall be placed over all trenches or patches for sidewalks and driveways at the end of each day. Temporary pavement shall also be placed on pipe trenches or patches on select streets at the end of each day with approval of the Owner. The Contractor shall maintain the temporary pavement for not less than 60 days from the date of placement before final pavement is placed (unless approved by the OWNER).
- D. Full-depth permanent bituminous concrete pavement shall be placed over all street trenches and excavations after each day and the trenches shall be maintain by the Contractor for a period of not less than 60 days after the trench pavement is placed before final pavement as follows:
 - 1. Final pavement on streets to be paved by the local city/town (as shown in Appendix E) shall be left with permanent pavement over the excavation. The depth of permanent pavement shall match existing.
 - 2. Final pavement on all other city streets, including city streets or state roads under moratorium (as shown in Appendix E), shall meet the paving requirements of the corresponding the local City/Town or RIDOT permit issued, and shall be micro-milled with a 2-inch curb-to-curb bituminous pavement Top/Wearing Course mix overlay using Class 9.5 hot-mix.
 - 3. For some select streets, with approval of the Owner, infra-red paving and/or patch milling and 2" overlay may be performed on streets with a limited number of excavations. Infrared patch paving shall be performed as described in Section 02577.
- E. Streets, driveways, parking areas or sidewalk pavements damaged or disturbed by the Contractor's operations shall be repaired, replaced, or restored in accordance with the requirements specified herein (Appendix F, City of Providence standards, or RIDOT standards on state roads) and as directed for the respective type of pavement replacement and in a manner satisfactory to the Owner, and City.
- F. Obtain all necessary City and State permits for road opening and comply with all rules and regulations governing road opening permits.

- G. Damage to the pavement outside of the limits of work which, in the opinion of the Owner or Owner's Designee, is not necessary to complete the Work and is a result of activities by the Contractor, his laborers, agents or subcontractors shall be repaired in a manner satisfactory to the Owner or Owner's Designee, Owner, City and State at the expense of the Contractor.
- H. Limits of pavement and pavement details for the Owner and the City of Providence are shown on the details in Appendix F.

1.02 RELATED WORK

- A. Trenching, Backfilling, and Compaction are included in Section 02221.
- B. Granular Fill Materials are included in Section 02230.
- C. Infra-red Pavement Repair and Patching are included in Section 02577.

1.03 REFERENCE STANDARDS

- A. Except as otherwise specified herein, the current Standard Specifications for Road and Bridge Construction, including all addenda, issued by the State of Rhode Island Department of Transportation (RIDOT), shall apply to materials and workmanship required for the work of this Section.
- B. Bituminous material shall conform to the requirements of AASHTO M20.
- C. Aggregates shall conform to AASHTO M6 for fine aggregates and AASHTO M80 for coarse aggregate.
- D. Micro-milling shall be performed in accordance with Section 935 of the RIDOT Standard Specifications.
- E. American Association of State Highways and Transportation Officials (AASHTO)
 - 1. AASHTO M144 - Standard Specification for Calcium Chloride.
- F. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.
- G. All materials shall be subject to the OWNER'S approval.

1.04 MAINTENANCE

- A. The CONTRACTOR will be held responsible for any pavement failures due to settlement or failures associated with his excavations, for a period of five (5) years from the date of the pavement's installation and acceptance.
- B. If, at any time during the five (5) year period following final acceptance of paving work under this contract, any part of the paving or surfacing work which, in the opinion of the OWNER, requires replacement, repair, or remedial action to damaged private or public property (caused by any defect in the paving work), the OWNER will require the CONTRACTOR to make the necessary repairs or replacement to the OWNER's satisfaction within ten (10) days of notification.

- C. At the OWNER's discretion, the OWNER may employ other persons to make such repairs and replacement. The CONTRACTOR agrees, upon demand, to reimburse the City all amounts expended for such repairs or replacements.
- D. All material and labor required for such maintenance shall be supplied by the Contractor, and the work shall be done in a manner satisfactory to the Owner at no additional cost to the Owner.
- E. Failure to meet the warranty requirements constitutes a breach of contract.

1.05 SUBMITTALS

- A. Submit to the Owner and Owner's Designee, in accordance with Section 01300, design mix for each bituminous material and a list of equipment to be used in temporary and permanent paving and surfacing.
- B. Samples: Provide samples of materials for laboratory testing and job mix design.
- C. The following submittals must be furnished for the work of this Section:
 - 1. Certified Mix Designs
 - 2. Certified Test results for gravel gradation.
- D. Product Data: Submit data on material and equipment to be used in concrete pavement including:
 - 1. Sources of aggregate, manufacturer data sheets for cement and concrete admixtures used in the concrete mix design.
 - 2. Dowels and dowel bar assemblies.
 - 3. Reinforcement or welded wire mesh.
 - 4. Proposed Techniques: submit proposed techniques for placement, consolidation, finishing texturing and curing of concrete.
 - 5. Concrete Mix Design Data:
 - a. Submit concrete mix design for each concrete strength.
 - b. Identify mix ingredients and proportions, including admixtures.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Asphalt Paving
 - 1. Bituminous concrete pavement and bituminous materials shall conform to Section M.03 of the Rhode Island Department of Transportation Standard Specifications for Road and Bridge Construction.
 - 2. Temporary hot mix asphalt shall be defined as hot mix asphalt placed to maintain the pavement until permanent patches are placed. All excavations within sidewalks, private and commercial driveways, and at select street locations as directed by the OWNER, will not be permanently restored with full depth hot mix asphalt within the same working day. Also, the contractor shall place a minimum two (2) inch temporary hot mix asphalt

pavement patch each day after completion of work in a roadway segment. The two (2) inch temporary hot mix asphalt pavement shall be removed after a 60-day settlement period and permanent asphalt shall be placed to match the existing pavement structure in kind (no less than 4" for non-state roads and 6" for state roads). Temporary pavement shall be the same plant asphalt mix as specified for the permanent surface course of this section of the Contract Specifications.

3. Full depth hot mix asphalt shall be defined as hot mix asphalt placed immediately following trench compaction to maintain the pavement until either a 2" micro-mill and overlay or infrared pavement restoration can be accomplished. All paved areas disturbed in these contracts shall be permanently restored with full depth hot mix asphalt within the same working day. Full depth hot mix asphalt patches shall match the existing pavement thickness in kind (no less than 4" for non-state roads and 6" for state roads). Full depth hot mix asphalt shall be the same plant asphalt mix as specified for the permanent surface course of this section of the Contract Specifications.
4. Asphalt-Tack coat type, grade, and application methods shall conform to both Section M.03; Materials and Section 403; Asphalt Emulsion Tack Coat of the Rhode Island Department of Transportation Standard Specifications for Road and Bridge Construction.
5. Backfill shall be in accordance with RIDOT Minimum Standards for State and Municipal Road Repair for Utility Work.
6. Initial pavement shall be in accordance with the Rhode Island Department of Transportation Standard Specifications for Road and Bridge Construction and RIDOT Minimum Standards for State and Municipal Road Repair for Utility Work.
7. Temporary pavement marking paint shall be epoxy and thermoplastic markings. Paint shall be white or yellow to match existing conditions or as directed by the Owner and Owner's Designee.

B. Concrete Paving

1. Concrete pavement shall be as specified in Section 03301 and conforming to AASHTO M85 and in accordance with RIDOT Standard Specifications for Road and Bridge Construction, Section 601, Table 1.
2. Concrete pavement shall be Class XX for road subbases and driveways, and Class A for sidewalks.
3. Fine aggregates shall conform to AASHTO M6 and course aggregates shall conform to AASHTO M80.
4. Permanent pavement marking paint shall be epoxy resin reflectorized traffic paint. Paint shall be white or yellow to match existing conditions or as directed by the Owner and Owner's Designee.

C. Concrete sidewalks shall conform to Rhode Island Department of Transportation Standard Specifications for Road and Bridge Construction, Section 905.

- D. Concrete curbs shall conform to Rhode Island Department of Transportation Standard Specifications for Road and Bridge Construction, Section 906.

PART 3 EXECUTION

3.01 GENERAL

A. Openings

1. It shall be unlawful for any person or persons, firm, corporation, or municipality to make any excavation in or to open or damage the surface of any road or street under the jurisdiction of the RIDOT or the local City/Town without written approval from the authority having jurisdiction.
2. No Providence Department of Public Works controlled roads can be open after November 15th or before April 15th. Road plates may not be left in place after November 15th. The only exceptions shall be for emergencies declared by the City Department of Public Works.
3. The Contractor shall abide by the hours of construction specified in Section 01014.
4. Notify residents and business 72-hours prior to beginning roadwork.
5. Steel plates are to be used over excavations to permit full traffic flow during non-working hours. No barricades, equipment, materials, or other obstructions to traffic shall be left in the roadway when work is not actually in progress.
6. Provisions shall be made to protect all existing underground utilities during construction. Work shall be conducted to eliminate interference with subsurface utilities and their appurtenances unless permission for interference has been obtained from the proper authorities.
7. All roadways shall be cleanly saw cut with an abrasion wheel power saw, before an excavation, is made in straight parallel lines and rectangular in shape.
8. After an opening is made, the work shall be continuous, and restoration of disturbed surfaces shall be completed as soon as conditions permit.
9. Backfill the excavated area and complete temporary pavement the same day trench is made. Open trenches shall not be permitted overnight.
10. All excavations shall be completely backfilled. Trenches may not be flushed or puddled except by specific permission of the City.
11. All backfill of trench work or excavated areas within City Road Right of Way shall be done in the presence of the assigned Inspector. If inspector is not present and the excavated area has been backfilled, re-excavate the opening and backfill with the inspector present at Contractor's sole expense.
12. All openings shall be properly guarded, day and night, with approved signs, barricades, lights, etc. Flagmen shall be provided in the amount as directed by the local Police

Department. If necessary, a uniformed police officer for traffic control will be determined by the local Police Department. Transverse openings shall be restricted so that not more than one half of a traveled way will be obstructed at any time, one line in each direction must be maintained at all times. Recessed and pinned steel plates are to be used as protection on openings maintained overnight in the traveled ways.

B. Pavement and Resurfacing

1. Prior to placement of asphalt, all excavations (not included within the scope of mill and overlay) shall be re-sawcut, full depth through the pavement, at minimum six (6) inches from all vertical edges of the initial utility work trench(es) to expose a fresh, full thickness, vertical face prior to installing permanent pavement. An asphalt emulsion tack coat shall be brush-painted or pressure sprayed on all pavement edges, prior to placing the new bituminous mixture, to ensure proper bonding of new and old pavements.
2. If the edge of any excavation ends with two (2) feet or less to the curb or edge of the pavement, remove and replace all pavement between the edge of the trench and curb or edge of pavement at no additional cost other than at the unit price bid for pavement replacement.
3. Hose clean all road surfaces adjacent to the trench area to be paved. No paving is to be placed until subsurface is dry.
4. Initial pavement shall be maintained in a condition suitable for traffic until replaced or overlaid by top mix. Defects shall be repaired within 3 days of notification of such defects.
5. If the Contractor fails to maintain the trench and pavements in a safe and satisfactory condition and fails to remedy these conditions, the Owner may repair these areas at his own expenses with the cost of such repairs being deducted from payments due to the Contractor.
6. The work area shall be cleaned with a sweeper with a water attachment for dust control immediately after each excavation is backfilled and temporarily paved. A mechanical sweeper is required to be available on-site and used at all times while construction is taking place.
7. All pavement replacement, curbing, and sidewalk replacement shall be performed in strict accordance with the requirements of the local City/Town.
8. Materials for pavement shall be mixed, delivered, placed, and compacted in accordance with the RIDOT standards and as specified herein.
9. When the air temperature falls below 50 degrees F, extra precautions shall be taken in drying the aggregates, controlling the temperatures of the materials, and placing and compacting the mixtures.
10. No mixtures shall be placed when the air temperature is below 40 degrees F, nor when the material on which the mixtures are to be placed contains frost or has a surface temperature not suitable to the Owner and Owner's Designee. Before the Contractor leaves each site, all areas shall be restored to original conditions. If the existing traffic lines are removed or damaged during the day's construction, the Contractor is to restripe these lines as

necessary and return them to their original condition. Following final completion, restore all traffic lines with long life epoxy resin.

11. On sections of roadway where full depth hotmix asphalt restoration is required, the Contractor at his discretion (and at no additional expense to the OWNER) may install a two (2") inch temporary hotmix pavement to account for settlement, and then remove it to apply full depth pavement after a settlement period.
12. Contractor shall maintain all 2" temporary hotmix and "full depth asphalt" patches in accordance with these specifications. The Contractor shall promptly repair trench failures upon notification by the OWNER. Failure to comply may result in permit revocation by the permitting DPW.
13. The Contractor shall provide all labor, material, equipment and excavation required to install permanent pavement as specified in this section of the Contract Specifications, or as directed by the OWNER. To match existing pavement thickness, all asphalt pavement shall be placed and compacted (at minimum) in two separate equal layers (lifts).
14. Unless otherwise directed, the Contractor shall perform typical permanent pavement restoration in sidewalks, private and commercial driveways, and at select street locations (directed by the OWNER), or as specified herein, for such restorations that will require the removal of the conventional 2-inch temporary pavement.
15. For asphalt street restoration, or as directed by the OWNER, the Contractor shall install sufficient pavement to match the existing pavement thickness. The conventional saw cutting of existing pavement edges along trenches will not be required at locations where the Contractor is placing "full depth asphalt" pavement to be followed by mill and overlay or infrared restoration.
16. In sidewalks, private and commercial driveways, and at select street locations (directed by the OWNER), upon removal of the temporary pavement, the existing pavement shall be re-sawcut to straight lines beyond any damaged pavement on both sides of the trench to a distance 6 inches beyond the existing edge of the damaged area, or as directed in the field by OWNER.
17. Prior to winter shutdown, all sawcuts that have not been excavated or patched shall be crack sealed.

C. Permits

1. The Contractor shall solely be responsible for obtaining and maintaining road opening and street closure permits with the City as needed. Notify police jurisdiction of work.
2. Apply for a road opening permit with local City/Town Department of Public Works Engineering Division and receive approval from the Department of Public Works a minimum of 2-weeks prior to the start of work.
3. Road opening permits are valid for 30-days from the date of issuance.

4. Contractor shall be responsible for taking out and maintaining the minimum required Insurances, Bonds, statements, and providing any and all information requested by the City Department of Public Works to obtain permits.
5. Schedule all inspections 72-hours prior to the commencement of work. If the anticipated date and duration of work change, notify the local City/Town Department of Public Works Traffic Engineering Division the prior business day. Failure to notify the Department of Public Works may result in the nullification of the permit. Contractor shall be responsible for providing any and all information requested by the City Department of Public Works.

D. Protection of Traffic

1. Employ Police Officers as required by the local City/Town Traffic Engineering Division Permit to maintain and control the flow of traffic and for the protection of motorists and pedestrians. Place and maintain such barricades, detour signs, flashing lights, etc. as are deemed necessary by the by the involved jurisdiction's Police Department. Traffic control shall be coordinated with Police and City.
2. Special attention shall be given for the protection of pedestrians, school children, and motorists.
3. Ingress and egress shall be maintained to the abutting properties at all times.
4. Daily notification of the area of operations shall be made to the Owner and Owner's Designee, Police, Fire Department, City Engineer, Department of Public Works, or City Road Supervisor.
5. No vehicular traffic or loads shall be permitted on the newly completed pavement until adequate stability has been attained and the material has cooled sufficiently to prevent distortion or loss of fines. If the climatic or other conditions warrant it, the period of time before opening to traffic may be extended at the discretion of the Owner and Owner's Designee.
6. All agencies must be notified in the event of a detour or road closure, these include but are not limited to Police, Fire, and other emergency departments.

E. Protection and Replacement of Existing Features

In areas where existing sidewalks and driveways are to be removed and/or new sidewalks construction is required, the Contractor's attention is directed to the fact that miscellaneous items such as parking meter and/or bases, traffic control signs, light poles and bases, mail boxes, etc. are not specified in the contract. However, all items shall be protected from damage and shall remain in place unless removed by others. All curb stop (valve) boxes, gate boxes, frame and covers, etc., shall be reset to finish flush with the new sidewalk pavement.

3.02 ROLLING AND COMPACTION

- A. Compaction shall be started immediately after spreading. Rollers shall be types approved by the Owner and Owner's Designee. Rolling shall be a continuous process, and all parts of the pavement shall receive uniform compaction.

- B. All pavement thicknesses referred to herein are compacted thicknesses. The Contractor shall place sufficient mix to ensure that the specified thickness of pavement occurs wherever called for.
- C. After the paving mixture has been properly spread, initial compaction shall be obtained by the use of power rollers weighing not less than 240 pounds per inch width of tread.
- D. Final compaction of the surface shall be accomplished by rollers weighing not less than 285 pounds per inch width of tread. Along curbs, structures and all places not accessible with a roller, the mixture shall be thoroughly compacted with tampers. Such tampers shall not weigh less than 25 pounds and shall have a tamping face of not more than 50 square inches. The surface of the mixture after compaction shall be smooth and true to the established line and grade.
- E. The base pavement shall be placed and compacted by a roller to thoroughly compact the bituminous concrete without damaging the existing pavement. The width of the roller must be less than the width of the trench. The new pavement shall be rolled smooth and flush with the existing pavement.
- F. Begin compaction as soon as placed hot-mix paving will bear roller weight without excessive displacement. Compact hot-mix paving with hot, hand tampers or with vibratory-plate compactors in areas inaccessible to rollers.
- G. Complete compaction before mix temperature cools to 175 degrees F.
- H. Breakdown Rolling: Complete breakdown or initial rolling immediately after rolling joints and outside edge. Examine surface immediately after breakdown rolling for indicated crown, grade, and smoothness. Correct laydown and rolling operations to comply with requirements.
- I. Intermediate Rolling: Begin intermediate rolling immediately after breakdown rolling while hot-mix asphalt is still hot enough to achieve specified density. Continue rolling until hot-mix asphalt course has been uniformly compacted to the following density:
- J. Average Density: 96 percent of Marshall density as determined at the plant, according to RIDOT Specifications. Density shall be attained before the temperature of the surface falls below 175 degrees F.
- K. Finish Rolling: Finish roll paved surfaces to remove roller marks while hot-mix asphalt is still warm.
- L. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while asphalt is still hot; compact thoroughly.
- M. Repairs: Remove paved areas that are defective or contaminated with foreign materials and replace with fresh, hot-mix asphalt. Compact by rolling to specified density and surface smoothness.
- N. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.

- O. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

3.03 MICRO-MILLING AND RESURFACING

- A. The Contractor shall make every effort to prevent debris from falling into catch basins or any utility structure. The Contractor is required, at no additional cost, to employ storm drain inlet protection measures (ie. hay bales or filter socks). Should any debris fall inside a structure, it shall be removed immediately by the Contractor.
- B. No portions of the shoulders or sidewalks are to be used for storage for construction equipment and/or material.
- C. The Contractor shall take adequate precautions to avoid unnecessary damage to pavements, utilities, or private properties. The Contractor shall promptly repair (in kind), at his own expense, any damage attributed to his work to such pavements, utilities, or private property to the satisfaction of the OWNER.
- D. The Contractor shall provide for adequate protection of exposed utility structures to prevent vehicle damage or claims after completion of the micro milling work and maintain such protection in place until the final pavement work has been completed.
- E. The Contractor shall provide adequate signage on exposed roadways and shall paint the exposed edges of structures with a highly visible fluorescent color.
- F. The Contractor shall be responsible for all claims and/or damages resulting from exposed utility structures.
- G. Ensure that the micro-milling operation produces a uniform pavement texture that is true to line, grade, and cross section.
- H. Micro-milled pavement surfaces are subject to visual and straightedge inspections. Keep a 12 ft. straightedge near the micro-milling operation to measure surface irregularities of the milled pavement surface.
- I. Micro-milling shall result in a grid-patterned textured pavement surface with longitudinal ridges approximately the same distance apart as the cutting teeth. The ridges shall be consistent in depth, width, and profile. The distance between the top of each ridge and the adjacent valleys shall not exceed 1/8 inch.
- J. If any areas exceed 1/8 inch between the ridge and valley of the mat surface, the Contractor shall remove the underlying layer and replace it with material as directed by the OWNER at no additional cost.
- K. During milling operations, the cutter teeth shall be regularly checked and replaced as necessary.
- L. The resulting profile and cross slope of the milled pavement surface shall be such that a 12 ft. long straightedge laid perpendicular or parallel to the centerline will not allow a shim with a width of 1 inch and a thickness of 3/16 inch to pass under the straightedge at any point except at breaks in profile grade or cross slope.

- M. Milled pavement surfaces which do not conform to the requirements above shall be corrected by the Contractor at no additional cost. Prior to initiating corrective action, the Contractor shall prepare and submit a correction plan to the OWNER for approval.
- N. A self-loading motorized street sweeper equipped with both brooms and a vacuum system, and a functional water spray system shall immediately follow the milling machine. Millings, excess pavement waste, etc. and shall not be allowed to flow across the pavement nor be left on the surface of the pavement.
- O. All removed material, i.e. millings, excess pavement waste, etc., shall be considered the property of the Contractor and shall be disposed of by the Contractor. The Contractor shall notify the OWNER prior to the start of milling operations of the disposal location.
- P. Tack Coat/Sealant shall be emulsified asphalt with the same asphaltic cement as the HMA pavement mix placed, SSI or equal. In accordance with requirements of AASHTO M140/M208 and Section 403 of RIDOT Standard Specification.
- Q. From pick up through placement the Contractor shall conduct and record periodic temperature checks of the Virgin HMA in its hotbox to ensure the temperature does not fall below 250°F or exceed 300°F. This documentation shall be provided to the OWNER upon request.
- R. Use power-driven, self-propelled micro-milling equipment that is the size and shape that allows traffic to pass safely through areas adjacent to the work.
 - 1. Equipped with a cutting mandrel with carbide tipped cutting teeth designed for micro-milling bituminous pavement to close tolerances
 - 2. Equipped with grade and slope controls operating from a stringline or ski and based on mechanical or sonic operation
 - 3. Capable of removing pavement to an accuracy of 1/16 inch
 - 4. Furnished with a lighting system for night work, as necessary
 - 5. Provided with conveyors capable of side, rear, or front loading to transfer the milled material from the roadway to a truck
 - 6. Rollers shall be steel wheel rollers weighing between 126 and 172 pounds per linear inch of drum width equipped with an operating water spray and scraper system.
 - 7. The spreading and finishing machine shall be equipped with a fully automatic screed control system which shall be in operation at all times during placement of the surface course. The system shall be either a contact (skid) or non-contact (sonic averaging) system. The skid shall be mounted on the side of the spreading and finishing machine which will receive the next mat of material, placed in contact with the pavement surface. The sonic averaging system shall have a ski, mounted on the side of the spreading and finishing machine which will receive the next mat of material. A joint maker placed on the side of the spreading and finishing machine to ride on the existing or previously constructed surface or mat of material may be required as directed by the Engineer.

S. Milling Operation

1. Clean existing pavement surface of loose and deleterious material immediately before cold milling.
2. Milling operations shall progress from the low side of each roadway barrel or lane and progress towards the high side. Each successive pass of the milling machine shall meet the line and grade of the previous pass. The speed of the milling machine shall be maintained at a rate which results in a uniform pavement texture.
3. Mill to a depth of 2 inches to a uniform finished surface free of excessive gouges, grooves, and ridges.
4. Control rate of milling to prevent tearing of existing asphalt course.
5. Repair or replace curbs, manholes, and other construction damaged during cold milling, at no additional expense.
6. Excavate and trim unbound-aggregate base course, if encountered, and keep material separate from milled hot-mix asphalt.
7. Patch surface depressions deeper than 1 inch after milling, before wearing course is laid.
8. Traffic must be maintained on the milled surface prior to the placement of the new asphalt concrete, provide suitable transitions between areas of varying thickness to create a smooth longitudinal riding surface. Produce a pattern of striations that will provide an acceptable riding surface.
9. Prior to opening an area which has been milled to traffic, sweep the pavement with self-loading motorized street sweeper to remove, to the greatest extent practicable, fine material which will create dust under traffic. Sweep in a manner that will minimize the potential for creation of a traffic hazard and to minimize air pollution.
10. Asphalt shall be placed within five (5) business days, or as otherwise directed by OWNER, following milling operations.

T. Placing Hot Asphalt Mix Top/Wearing Course

1. Asphalt Emulsion Tack Coat shall be applied on the micro milled surface, between asphalt layers and on exposed cross-sections of adjacent roadways.
2. Machine place hot-mix asphalt on prepared surface, spread uniformly, and strike off. Place asphalt mix by hand in areas inaccessible to equipment in a manner that prevents segregation of mix. Place each course to required grade, cross section, and thickness when compacted.
3. Spread mix at a minimum temperature of 250 degrees F.
4. Begin applying mix along centerline of crown for crowned sections and on high side of one-way slopes unless otherwise indicated.

5. Regulate paver machine speed to obtain smooth, continuous surface free of pulls and tears in asphalt-paving mat.
6. Place paving in consecutive strips not less than 10 feet wide unless infill edge strips of a lesser width are required.
7. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips. Overlap mix placement about 1 to 1-1/2 inches from strip to strip to ensure proper compaction of mix along longitudinal joints.
8. Complete a section of asphalt base course before placing asphalt surface course.
9. Promptly correct surface irregularities in paving course behind paver. Use suitable hand tools to remove excess material forming high spots. Fill depressions with hot-mix asphalt to prevent segregation of mix; use suitable hand tools to smooth surface.

U. Joints

1. Construct joints to ensure a continuous bond between adjoining paving sections. Construct joints free of depressions, with same texture and smoothness as other sections of hot-mix asphalt course.
2. Clean contact surfaces and apply tack coat to joints.
3. Offset longitudinal joints, in successive courses, a minimum of 6 inches.
4. Offset transverse joints, in successive courses, a minimum of 24 inches.
5. Construct transverse joints at each point where paver ends a day's work and resumes work at a subsequent time. Joints between old and new pavements, or between successive days' work, shall be carefully made in such a manner as to insure a thorough and continuous bond between the old and new surfaces.
6. The edge of the old pavement, or previously placed new pavement, shall be cut back a sufficient distance to expose a fresh, full thickness, vertical face. To obtain a well bonded joint, this face shall be brush-painted or pressure sprayed with a bituminous tack coat, after which the hot bituminous mixture shall be placed in contact with it.
7. Compact joints as soon as hot-mix asphalt will bear roller weight without excessive displacement.
8. Compact asphalt at joints to a density within 2 percent of specified course density.

3.04 CONCRETE ROADS OR SUBBASES

- A. Where concrete road repair is required, concrete shall be placed to match existing concrete thickness. Steel plates shall be used to protect the concrete during curing time.
- B. Prior to placing concrete, the Contractor shall cut back the existing concrete for a minimum of twelve inches beyond the limits of the pipe trench. Existing concrete shall be of suitable quality to abut repair.

- C. Drill holes into the face of the existing concrete pavement for connection of the steel shall be in accordance with the local City/Town or RIDOT standards. Maintain vertical and horizontal alignment during drilling and do not damage existing concrete surrounding the hole. Before installing dowels and joint ties, clean the holes of cement dust, standing water, and materials that interfere with the proper bonding of the epoxy grout.
- D. Place concrete in 2 layers with the first layer placed to such a depth that the surface of the layer is at the proper elevation to receive the reinforcement steel. Place the reinforcement steel followed by the next layer of concrete. Remove and replace the lower layer concrete if it has developed initial set or has been in place more than 30 minutes before being covered with the next layer. Texture the surface using a stiff broom.
- E. Steel plates shall be set flush with surrounding pavement and pinned with a minimum of one spike at each corner of the individual steel plate.
- F. All manhole/catch basin covers, grates, valve covers, and other items at the roadway surfaces shall be appropriately raised or lowered to bring them flush with the new pavement.
- G. In accordance with the RIDOT Standard Specifications for concrete base streets, Portland Cement concrete shall be used as a replacement and placed to the exact depth as found or six (6) inches (whichever is larger). The Concrete shall set for a 72 hour period. During this time a construction steel plate shall be placed over the construction area. Drilling and doweling shall be required.
- H. A hotmix bituminous concrete binder course matching the existing pavement thickness shall be placed in multiple lifts, if necessary to match existing surface,
- I. Repair any defects in curbing caused by the Contractor's operations.

3.03 STAMPED ASPHALT

- A. Repair stamped asphalt to match the pattern, color and texture of the surrounding stamped asphalt during the placement of the final surface course.

3.04 BITUMINOUS SIDEWALKS AND DRIVEWAYS

- A. In areas where existing sidewalks are to be removed and/or new sidewalks construction is required, the Contractor's attention is directed to the fact that miscellaneous items such as parking meter and/or bases, traffic control signs, light poles and bases, mail boxes, etc. are not specified in the contract. However, all items shall be protected from damage and shall remain in place unless removed by others. All curb stop (valve) boxes, gate boxes, frame and covers, etc. shall be reset to finish flush with the new sidewalk pavement.
- B. Impacted asphalt sidewalks and driveways full width shall be restored in accordance with RI Standard 43.2.0. Asphalt sidewalks and driveways shall be paved with a full depth of three (3) inches (2 lifts of 1 ½ inches each or as approved by the Owner) of the same material used for bituminous concrete street surface course. The Contractor shall remove 2 inches of temporary pavement and an additional one inch of the pavement material to provide space for the 3 inches of permanent pavement. The paving mixture shall be compacted by means of a power roller of sufficient size, or as directed by Owner or Owner's Designee, to give proper compaction. In

areas inaccessible to the roller, compaction must be accompanied by means of a mechanical compactor.

- C. Compaction of the subgrade material must be accompanied by means of a mechanical compactor.
- D. The elevation of the new sidewalk surface shall match the original surface elevation prior to disturbance.

3.05 CONCRETE SIDEWALKS AND DRIVEWAYS

- A. Contractor shall restore full panels of impacted concrete sidewalk in accordance with RI Standard 43.1.0; and full panels of impacted concrete driveways in accordance with RI Standard 43.5.0.
- B. The subgrade shall be constructed to the required elevation to match the existing. All soft and unsuitable materials shall be removed and replaced with approved materials. The subgrade shall be compacted until a smooth, hard and dense surface is obtained. The subgrade shall be moistened prior to the placing of concrete.
- C. Forms shall be of wood or metal and shall be of the full depth of the concrete.
- D. Concrete shall be placed in the forms by methods which will prevent segregation, spread to the full depth and brought to grade by screening and straight edging and shall be floated with a wooden float to produce a surface free from irregularities.
- E. Joints shall be constructed in intervals of 12 ft, except for closures, but a slab shall not be less than 6 ft in length. Slabs shall be separated by transverse premolded expansion joint filler for the full width of the slab, extending from the bottom of the slab to within 1/4-in of its top surface. The slab between expansion joints shall be divided into blocks approximately 5 ft in length by scoring transversely. Transverse scoring shall extend to at least 1/3 of the depth of the concrete slab.
- F. Concrete sidewalk panels disturbed by construction activities shall be replaced in their entirety to the nearest joint. New slabs shall be separated from existing adjacent slabs by a transverse premolded expansion joint filler for the full width of the slab, extending from the bottom of the slab to within 1/4-in of its top surface.
- G. Where sidewalks are constructed adjacent to permanent structures or other rigid construction on one side and curb on the other, an expansion joint of premolded material extending along both structure and the curb shall be placed for the full depth of the slab. A premolded expansion joint shall be placed between the sidewalk and adjacent curb at all crosswalks. All joint filler shall be fastened to prevent displacement. The walk shall be sloped so that water will drain away from the structure.
- H. The entire surface of the pavement shall be sprayed uniformly with white pigmented curing compound immediately after the finishing of the surface on and before the set of the concrete has taken place. The curing compound shall be of such character that the film will harden within 30 minutes after application. Should the film become damaged from any cause within the required curing period, the damaged portions shall be repaired immediately with additional compound. The curing compound shall not be applied during rainfall. Curing compound shall

be applied under pressure at the rate of one gallon to not more than 150 square feet by mechanical sprayers. The spraying equipment shall be of the fully atomizing type equipped with a tank agitator.

- I. At the time of use, the compound shall be in a thoroughly mixed condition with the pigment uniformly dispersed throughout the vehicle. During application the compound shall be stirred continuously by effective mechanical means. Hand spraying of odd widths or shapes shall not be permitted nor shall concrete compound be applied to the inside faces of joints to be sealed.
- J. During curing, the concrete work shall be protected from pedestrian, animal, and vehicular traffic. The entire surface of the concrete shall set for a period of 72 hours, during which time all pedestrian and vehicular traffic shall be excluded. It is the Contractor's responsibility to protect concrete from all and any damage or displacement, including vandalism and weather.

3.06 CURBS

- A. Concrete curbs shall be constructed of the same dimensions as the existing curbs. Curbs shall be poured in forms and finished with a steel trowel, float or broom so as to duplicate the finish of the existing curb of local municipal DPW or RIDOT.
- B. Concrete curbs shall be constructed in accordance with the standard details provided in Appendix E.
- C. All existing concrete, granite, or bituminous curbing, which is disturbed or removed as a result of the Contractor's operations, shall be reinstalled, reset, or installed in kind and reset to original grade or in the case of bituminous curbing by the Contractor in a manner satisfactory to the Owner and the proper municipal and state officials, as applicable, having jurisdiction of the work area. This restoration work, which may require the cutting, trimming and fitting of the curbing, to satisfactorily reset the concrete or granite curbing or to install bituminous curbing, shall be performed at no additional expense to the Owner. The Contractor shall perform the utility work so as to minimize the impact and disturbance, if any, of the existing street curbing, and/or allow for the restoration of the disturbed curbing by resetting the existing concrete or granite curbing, or installing bituminous curbing, at the service replacement location. All curbing damaged or removed as a result of the Contractor's operations shall be repaired, reinstalled, replaced or restored by the Contractor in a manner satisfactory to the Owner and to the satisfaction of the proper state and municipal officials having jurisdiction of the in question, at no additional expense to the Owner.
- D. Whereupon it is determined in the field that the existing concrete or granite curbing cannot be satisfactorily reset due to existing curb conditions, the Contractor will be directed to reset or remove and replace the existing curbing with new vertical face concrete or granite curbing beyond the typical service trench limits of disturbance and removal. Existing unsatisfactory curb conditions, which would prevent the satisfactory resetting of the existing curbing, include previously damaged or broken curb; broken or deteriorated concrete curbing; or sections of curbing missing from the existing street curb line at the location of the service work. Whereupon the Contractor is directed to reset existing curbing beyond the typical service trench limits, as approved by the Owner, the resetting of existing concrete or granite curbing will be measured for payment as described in Section 01250 "Measurement and Payment" of these Contract Specifications. Whereupon the Contractor is directed to perform the new curb replacement work, as approved by the Owner, the furnishing and installation of the new concrete or granite curbing, will be measured for payment as described in Section

01250“Measurement and Payment” of these Contract Specifications. Similarly, whereupon the Contractor is directed to replace bituminous curbing within approved limits at a specific location, the installation of the new bituminous curbing will also be measured for payment as described in Section 01250 “Measurement and Payment” of these Contract Specifications.

- E. New precast concrete or granite curbing, which may be required for select curbing restoration as directed by the Owner, shall be approved by the local city/town, or the RI Department of Transportation (RIDOT), as applicable, for local streets or state roadways. Vertical face granite curbing shall conform to ASTM C615 standards and the fabrication requirements of Section M.09 (Curbing) of the RIDOT Standard Specifications for Bridge and Road Construction, latest edition. New precast concrete curbing shall also be furnished in accordance with the material and fabrication requirements of Section M.09 of the aforementioned RIDOT Standard Specifications. The installation of both granite curbing and precast concrete curbing, as may be required for select curbing restoration, as directed by the Owner, shall also conform to the construction methods of the RIDOT Standard Specifications. Unless otherwise directed, the new granite or precast concrete curbing shall be set so as to match the existing curb reveal of the existing adjacent curbing.
- F. New bituminous curbing, which may be required for select curbing restoration as directed by the Owner, shall be approved by the local municipal Department of Public Works, or the RI Department of Transportation (RIDOT), as applicable, for local streets or state roadways. Bituminous curbing shall conform to the material and fabrication requirements of Section M.09 (Curbing) of the RIDOT Standard Specifications for Bridge and Road Construction, latest edition. The installation of bituminous curbing shall also conform to the construction methods of the RIDOT Standard Specifications. The Contractor shall utilize suitable equipment for the placement of the bituminous curbing, or utilize an alternate means and method to satisfactorily restore the curbing in a manner compatible with the curb reveal and shape of the existing bituminous curbing.

3.07 DRIVEWAY APRONS

- A. Driveway aprons shall be 6-inches thick and include 6” x 6” steel welded fabric placed in the center of the slab. The apron shall slope uniformly from sidewalk to gutter, without depressions or humps. The surface shall be broomed to create a rough but uniform surface. If existing apron is left in place, then the new apron shall be finished to match.

3.08 TRAFFIC LOOPS

- A. In accordance with RIDOT Standard Specifications, when the Contractor mills and overlays or otherwise resurfaces an existing roadway that will be open to traffic, and such operations damage existing traffic signal loop detectors, thereby rendering such to be non-functional, the Contractor shall restore (at no additional cost to the Owner) properly operating detection within seven (7) calendar days. When existing detection is rendered non-functional by the Permittee’s operations for any other reason, the Contractor shall restore (at no additional cost to the Owner) properly operating detection within seventy-two (72) hours.

3.09 STRIPING

- A. Surface Preparation: All dirt, oil, grease and other foreign material shall be removed from the areas upon which the traffic paint or stripes are to be placed. Large areas of tar, grease or foreign materials may require sand blasting, steam cleaning or power brooming to accomplish

complete removal. Application of stripes shall not proceed until final authorization is received from the Owner and Owner's Designee.

- B. The paint shall be applied in accordance with the Rhode Island Department of Transportation Standard Specifications for Road and Bridge Construction. Traffic shall not be permitted until the paint is thoroughly dry.
- C. Permanent markings shall be applied no sooner than 2 weeks after final paving is completed but no later than 4 weeks after.
- D. All disturbed pavement markings shall be replaced to the satisfaction of the Owner and Owner's Designee.
- E. No thinners shall be used for the above listed pavement marking applications except in accordance with the manufacturer's specifications and at the direction of the Owner and Owner's Designee.
- F. No paint or pavement marking material shall be heated above the temperature marked on the container.
- G. Bituminous concrete pavements shall have been in place for 48 hours prior to the application of pavement markings.
- H. If for any reason material is spilled or tracked on the pavement, or any markings applied, in the Owner and Owner's Designee's judgement, fail to conform because of a deviation from the desired pattern, remove such material by a method that is not injurious to the roadway surface and is acceptable to the Owner and Owner's Designee, clean the roadway surface and prepare the surface for a reapplication of markings and reapply the markings as directed without additional compensation for any of the foregoing corrective operations.
- I. Parking area pavement of each handicapped parking space shall be painted with an international symbol of accessibility as shown on the Drawings, and as approved by the Owner and Owner's Designee. Provide an R7-8 sign in accordance with the Manual of Uniform Traffic Control Devices at each space. Sign shall be fastened to a single aluminum post and bottom of sign shall be mounted 5'-0" above finished grade. Post shall have a 12-in diameter by 4'-0" deep concrete base. Concrete shall conform to Section 03301.
- J. Access aisles shall be painted with parallel pavement markings as shown on the Drawings. Markings inside the perimeter border shall be equally spaced twice the distance of the line width.

3.10 AJDUSTMENTS OF UTILITY APPUTENANCES TO GRADE

- A. At no additional expense to the Owner, all valve boxes, curb stops, manhole frames and covers, catch basin frames and grates which are disturbed by construction operations shall be reset and adjusted to grade at the elevation of the final pavement in accordance with the specified procedures of the appropriate utility.

3.11 BRICK AND COBBLESTONE RESTORATION

- A. Brick or cobblestone sidewalk, driveway, and street restoration, which may be required as directed by the Owner, shall be approved by the local municipal Department of Public Works for local streets. The existing brick or cobblestone shall be removed manually from within the limits required for trench excavation as approved by the Owner. The existing brick or cobblestone shall be cleaned of all extraneous matter and washed for re-use. The Contractor shall carefully stockpile and protect the existing brick or cobblestone until such time that the brick or cobblestone is required for the final restoration. Whereupon it is determined in the field that the existing bricks or cobblestones, or a portion thereof, are damaged and not suitable for re-use, the Contractor shall furnish new bricks or cobblestones to satisfactorily complete the restoration.
- B. The brick or cobblestone shall be placed and arranged in the same pattern as the adjacent brick or cobblestone areas. The subgrade shall be excavated sufficiently to allow for placement of a 2-inch deep sand or stone dust base matching the existing base, which shall be uniformly graded and compacted prior to placement of the bricks. Unless otherwise directed, the final brick or cobblestone surface restoration shall match the longitudinal and transverse grades of the existing pavement, and the bricks or cobblestones shall be neatly placed and arranged to match and interlock with the existing pattern. Upon completion of the placement of bricks, the restored area shall be swept with sand or stone dust to fill the joints of the brick. The work area shall then be cleaned of all residual sand, stone dust, or other soil spillage.

3.12 LOAMING AND SEEDING

- A. All grassed areas disturbed by the work shall be restored with a minimum 4-inch deep loam bed or greater to match existing. All loamed areas shall be trimmed and graded to existing lines and grades. All areas shall be fine raked and rolled and tamped.
- B. All loamed areas shall be free of large stones, brush, roots, stumps, litter, or other foreign materials. All seed beds shall be cultivated before seeding and seeding shall not be permitted on any area unless the surface presents a loose friable seed bed.
- C. Fertilizer shall be commercial grade 10-6-4. Application shall be at a rate of 0.20 lb. per sq. yd. Lime shall consist of a standard commercial product of ground dolomitic limestone intended for agricultural use. Limestone shall be spread evenly and incorporated thoroughly into soil. Application shall be at a rate of 0.5 lb. per sq. yd. Grass seed shall be equal in mixture to Improved U.R.I. No. 2. Application shall be at a rate of 0.05 lbs. per sq. yd.
- D. Landscape work shall only be performed during acceptable growing seasons, as defined for USDA hardiness zone 6b. The Contractor shall be responsible for the watering of the newly seeded areas to promote satisfactory initial grass growth within the restored grassed areas. Depending on weather conditions multiple waterings may be required as part of the overall grass restoration work.

END OF SECTION