

SPECIAL INFORMATION FOR BIDDERS

GENERAL DESCRIPTION

This bid consists of work in approximate quantities as listed in the Proposal Forms, which state the location and description of the work to be done and the materials to be furnished.

This Contract shall adhere to the City of Worcester's Standard Specification and Details dated March 1, 2023. The plans and specifications, proposal and addenda shall form part of this contract.

SCOPE OF WORK

The work to be done under this Contract consists of Complete Streets improvements at 32 locations within the City of Worcester. The work to be performed will include new concrete sidewalks, and other incidental work as required. Work under this Contract shall be paid for at the contract unit bid prices, which shall constitute full compensation for all material, labor, equipment, etc., required to satisfactorily complete the work.

ALL WORK PERFORMED UNDER THIS CONTRACT SHALL BE IN CONFORMANCE WITH THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES DATED 2024, THE 2017 MASSACHUSETTS DEPARTMENT OF TRANSPORTATION CONSTRUCTION STANDARD DETAILS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, THE 2009 MANUAL OF UNIFORM CONTROL DEVICES, THE 2022 MASSACHUSETTS AMENDMENTS TO THE MANUAL OF UNIFORM CONTROL DEVICES, AND THESE SPECIAL PROVISIONS.

QUANTITIES

All bids will be compared on the total estimate of quantities of work to be done, as shown in the proposal.

These quantities are approximate only, being given as a basis for the comparison of bids to determine the approximate amount of the consideration of the contract. The bidder will be required to complete the work specified or as shown on the drawings, within the required performance period, whether the required quantities are more or less than the amounts herein estimated without any change in the contract unit price. The final payment will not be made until the work is completed.

The unit price bid for each item must allow for all collateral, incidental, or indirect costs connected with it.

INVESTIGATION OF CONDITIONS

Bidders are expected to visit the locality of the work and acquaint themselves with all available information concerning local conditions. They are also expected to make their own estimates of the facilities needed and difficulties attending the execution of the proposed contract including local conditions, availability of labor, uncertainties of weather and other contingencies. In no event will the City assume any responsibility whatever for an interpretation, deduction or conclusion drawn from the inspection of the site. Failure to acquaint himself with all available information concerning these conditions will not relieve the successful bidder from responsibility for estimating the difference and costs of successfully performing the complete work.

ADDENDA

The bidder is required to acknowledge receipt of any Addenda issued to this contract by inserting the Addendum number in the space provided on the proposal form.

CHANGES IN SCOPE

The City of Worcester reserves the right to increase or reduce the amount of this contract. Changes in scope may be ordered at any time up to project acceptance at the contract unit bid prices.

BID PRICE ADJUSTMENTS

This Contract contains a price adjustment for bituminous concrete mixtures in accordance with MassDOT Document 00811 included herein. The base, or period price for liquid asphalt on this project is \$637.50 per ton.

This Contract contains price adjustments for diesel fuel and gasoline in accordance with MassDOT Document 00812 included herein. The base, or period price for diesel fuel on this project is \$3.155 per gallon and for gasoline \$2.695 per gallon.

This Contract contains price adjustments for Portland Cement in accordance with MassDOT Document 00814 included herein. The base, or period, price for Portland Cement on this project is \$425.53 per ton.

EXPERIENCE

Each bidder shall state in his bid whether he is now or ever has been engaged on any other contract or other work similar to that proposed, giving the year in which it was done and the manner of its execution and shall submit such other information as will tend to show his ability to prosecute vigorously the work required in these specifications. A successful bidder will be required to employ an organization thoroughly experienced and skilled in the type of work to be done. After the opening of bids any bidder may be required to submit satisfactory evidence that the specific organization which he proposes

to employ on this contract has successfully executed work of the nature and quality indicated herein.

EQUIPMENT

Each bidder shall state in his bid the character, make and amount of equipment that he proposes to employ on the work. After bids are opened any bidder may be required to show that he owns, controls by firm option, or can procure the equipment necessary for commencing, prosecuting, and completing the work as required by the specifications.

CONTRACTOR RESPONSIBILITY

The contractor must care for, replace, and restore to good condition to the satisfaction of the Commissioner of Public Works & Parks any utilities, fences, sidewalks, posts, poles or other structures damaged by or interfered with by the contractor outside the scope of work. The contractor shall perform any necessary replacement, reparation or restoration at no additional compensation.

Damage resulting from the operation of the contractor to any structure in the street or ground near or within the scope of work (and not required to be changed under the contract) shall be replaced, repaired, or restored by the contractor at no additional compensation.

The contractor shall have no grounds for additional compensation because of expenses due to encountering existing pipes, conduits or structures.

The contractor shall cooperate with all other contractors or other forces within the limits of the work specified. The contractor shall allow the necessary access to the site to other contractors and utility companies and their agents. The contractor shall be responsible for preventing damage by others to the work performed under this contract or for having damage repaired, either by the party responsible or at his own expense.

TIME OF COMPLETION

The bidder shall complete all the work under this contract by **November 15, 2025**.

PUBLIC SAFETY AND CONVENIENCE

Vehicular and pedestrian traffic will be maintained on all streets located within and adjacent to the project unless permission is received in writing from the Commissioner of Public Works or his representative to close the street.

The Contractor shall take every measure necessary for the protection of personnel and property. Where construction operations are such that a hazard exists to the public, all safety precautions shall be maintained.

Trenches shall not be excavated in traveled ways until all materials and equipment required for such work are at the site and available for immediate use. When work is not in progress, trenches in areas subject to public travel shall be covered with steel plates

capable of safely sustaining a 36.5-ton truckload with impact without additional compensation. The work in each trench shall be practically continuous, with the placing of pipe, backfilling, and paving of the roadway surfaces closely following each preceding operation. Payment for steel plates will be included under the unit bid price for the respective item for which the work is being performed, regardless of width of trench.

The Contractor shall at all times, until written acceptance of the physical work by the Owner, be responsible for the protection of the work and shall take all precautions for preventing injuries to persons or damage to property on or about the project.

POLICE PROTECTION

The City of Worcester will furnish and pay for police when and where the City decides police protection is necessary. The Contractor shall notify the Engineer of the anticipated requirements as the work progresses, so that each day's protection can be scheduled not later than the preceding day.

SIMILAR CONSTRUCTION IN OTHER LOCATIONS

Construction of similar work may be needed in other locations and may be included in this Contract by agreement between the City and the Contractor. Any such work is to be paid for on a unit price basis at the prices bid under this Contract. Extra Work Orders will be given to the Contractor for any such work on a unit price basis at the prices bid in the Contract. The purpose of this provision is to permit the inclusion of any emergency or rush projects that may arise.

GENERAL NOTES

1. Prior to the start of any construction activity in any previously unoccupied location, the Contractor will supply the Contracting Officer with a traffic flow plan for the Contracting Officer's approval.
2. Where applicable the Contractor will supply all barricades, barriers, signing, lighting, etc. warranted to ensure the safety of the general public throughout the work site as a subsidiary obligation without any additional cost to the Owner and subject to the Contracting Officer's approval.
3. Prior to start of any work the Contractor will be required to supply and install construction safety signing on each approach to the work zone as directed by the Engineer. Signing shall read "**STREET UNDER CONSTRUCTION**" or "**ROAD WORK AHEAD**" or as directed by the Contracting Officer. Signing shall conform to applicable provisions of Section 850 of the Massachusetts Standard Specifications for Highways and Bridges latest edition.
4. Any necessary detouring will be arranged by the Contractor subject to the approval of the Contracting Officer.
5. The Contractor will be required to provide adequate access to businesses affected by all construction activities.

6. The Contractor will be required to have on site at all times during the course of all construction activities a full-time superintendent whom will be in responsible charge of this project. This individual will be the exclusive agent for the Contractor maintaining continuous correspondence with the Contracting Officer.
7. The Contractor will notify the Contracting Officer in writing whenever a change of superintendent is warranted.
8. The Contractor will be responsible for preservation of all benchmarks and highway bounds.
9. Gas, Electric, and Telephone Company structures will be adjusted by the owning agency or in coordination between the Contractor and said agencies.
10. Any existing conditions disturbed by the construction operations shall be restored by the Contractor at his own expense.
11. The milled grindings generated from the Contractor's operations of milling the bituminous surface may become the property of the Owner. If directed, the milled grindings shall be provided and transported to the City material drop off yard at 1065 Millbury Street by the Contractor, or the Greenwood Street Landfill at 30 NippNapp Trail, as directed by the Contracting Officer. In all other instances, the milled grindings will become the property of the contractor. No additional payment for work will be made by the Owner.
12. Where rigid base exists the Contractor will be required to remove said base from around manholes, catch basins and water boxes and replace with Superpave 12.5mm level 2 binder course thoroughly compacted in 2 lifts with a plate compactor. Superpave 12.5mm level 2 binder will be paid for under Item #422.2.
13. Where required by the Contracting Officer, compaction testing will be done by the Owner. The backfill shall be placed in suitable layers necessary to accomplish a minimum of 95% compaction which shall be achieved by mechanical or vibratory compaction equipment. The testing will apply to all areas of construction.
14. Under Item 403.2 GRINDING AND MILLING 2 INCH, all transitions to abutting streets shall be ramped with asphalt as per the discretion of the Contracting Officer. Said asphalt shall be removed just prior to the application of the surface course. The ramping of transitions will be considered a subsidiary obligation of the Contractor with no additional compensation from the Owner.
15. Under Item 403.2 GRINDING AND MILLING 2 INCH, the Owner will pay the Contractor a minimum quantity of five (5) square yards per each patch location on the milled surface, as directed by the Engineer.
16. Item 436.01 RESURFACE TRENCHES PERMANENT will include permanent

patching associated with proposed drainage work, as well as for asphalt patching between sawcut lines and newly installed curb at each intersection location.

17. Water service curb stops encountered in the sidewalk area requiring final adjustment and not meeting criteria for payment under Item 304.03 shall be set to final grade by the contractor as a subsidiary obligation and no additional payment for this work will be made by the Owner.
18. All handicap ramps installed for this contract will be constructed in cement concrete, as set forth in Item 454.
19. At no time shall the Contractor conduct construction operations on more than 3 street locations, unless otherwise directed by the contracting officer. A street is deemed to be in construction if any items for that location remain unfinished, such as sign erection/replacement, permanent pavement marking, etc.
20. Street lighting must be maintained during all phases of construction by operation of the existing street lighting infrastructure, or a substitute approved by the Contracting Officer.
21. Streets where sidewalk reconstruction is a major component of the work, the reconstruction of the sidewalk shall be completed to the binder course of asphalt, and fully completed if concrete, prior to any reclaiming of the roadway, unless otherwise directed by the contracting officer. Any temporary work to make driveways/sidewalks accessible prior to street paving will be conducted by the contractor at no additional expense to the Owner.
22. An ADA compliant pedestrian walkway must be continuously maintained throughout the construction process. This can be accomplished by excavating one side of the roadway sidewalk, leaving the other side untouched until the excavated sidewalk is complete. If the contractor wishes to excavate the sidewalks on both sides of the roadway simultaneously, an ADA compliant temporary pedestrian walkway must be constructed. The temporary walkway will include such items as roadway barriers, signage and signals, temporary striping, etc. Access to properties must be continuously maintained at all times during the construction process.
23. Any incomplete construction shall be stabilized for the winter on, or before November 15th. The stabilization shall allow the streets and sidewalks to be fully accessible throughout the winter. The contractor will be responsible for repairing any deficiencies to the stabilized areas. The final construction of any incomplete areas shall take place the following construction season, at no additional cost to the Owner.

SPECIAL PROVISIONS

MASSDOT SPECIAL PROVISIONS

Items that are not mentioned in the "City of Worcester Department of Public Works & Parks Standards Specifications & Details" dated March 1, 2023 will conform to the applicable provisions of the MassDOT Standard Specifications for Highways and Bridges, as amended, unless otherwise noted.

NOTICE TO PROCEED

The Bidder must agree to commence work on or before the date specified in the written "Notice to Proceed" issued by the City, and/or Engineer acting on behalf of the City, and to fully complete the project within the time specified in the contract.

SCHEDULE OF WORK

The Contractor shall submit to and for the comments of the Contracting Officer, a schedule of operations within ten (10) days after the mailing of the executed Contract to the Contractor. The schedule shall show the proposed methods of construction, sequence of work, and the time the Contractor proposed to complete the various items of work within the performance period specified in the contract. No permits will be issued until these schedules are submitted and approved by the Engineer. Revised construction schedules and schedules of values may be requested by the Engineer, with a frequency of no less than 30 days between submissions.

PROPER NOTIFICATION

The Contractor will be required to provide at least 48 hours' notice to the Contracting Officer before locating in work sites previously unoccupied under this contract or before proceeding with paving operations.

HOURS OF WORK

The City will permit the Contractor to work Monday through Friday between the hours of 7:00 A.M. and 3:30 P.M., except as otherwise permitted by the Contracting Officer. All construction work shall be completed or suspended for the winter season by November 15th unless a specific waiver is granted by the Contracting Officer.

PRE-CONSTRUCTION PHOTOGRAPHS

The Contractor shall, prior to beginning work on the project, submit to the City's Contracting Officer photographs, in an appropriate format of the road and sidewalk condition of all streets to be excavated. Post construction photographs shall also be submitted after final restoration. Said photographs shall be supplied to the City as a subsidiary obligation by the Contractor.

SAW CUTTING

Sawcuts shall be made in existing pavements to provide a neat, square edge at limits of excavation and to provide a clean joint where new pavement and sidewalks are to match existing. Sawcuts shall also be made where shown on the Contract Drawings, or otherwise directed by the Engineer. Sawcuts shall be made to the depth directed and shall be clean and even. All cuts shall be made using an approved power-driven saw. All sawcuts, regardless of depth or material cut into, shall be considered incidental and compensation will be included in the contract bid prices for the related work items.

CASTINGS

The Contractor will be required to return all excess drain, water, or sewer castings that were replaced or abandoned during the work to the City yard at 1065 Millbury Street. This work will be performed as a subsidiary obligation by the Contractor and no additional payment will be made by the City.

Gas, electric, and telecommunications castings and structures will be adjusted by the owning agency. The Contractor is responsible for notifying all relevant private utilities of the work being performed and coordinating the adjustment of all gas, electric, and telecommunications castings and structures.

Final adjustment to grade of castings within the roadway must be made after leveling course or binder course has been laid or as directed by the Contracting Officer.

SIGNS

The Contractor will be required to return any or all excess signs and poles that were replaced or abandoned to the DPW&P Sign Shop at 26 Albany Street, unless otherwise directed by the Contracting Officer. This work will be performed as a subsidiary obligation by the Contractor and no additional payment will be made by the City.

FINAL CLEAN-UP

Upon completion of the work and before acceptance and final payment, the Contractor shall remove and dispose of in an approved manner at his own expense, from the right-of-way, construction site, dredging site, and adjoining property, all temporary structures and all surplus materials and rubbish which the Contractor may have accumulated during the prosecution of the work, and shall leave the areas in a neat and orderly condition. No equipment or material shall be left within any of the aforementioned areas after acceptance of the Contract without the written permission of the Engineer. The Contractor shall not abandon any material at or near the site regardless of whether or not it has any value. All removed material must be disposed of in accordance with all Local, State, and Federal laws and regulations.

PERMITS

Prior to commencement of work, the Contractor shall be responsible for obtaining all necessary construction permits. Distinct permits are required for each work location. Permit necessary for the work may include, but are not limited to, Trench Permits and Street Opening Permits. Permits can be obtained from the DPW&P Engineering Division located at 20 East Worcester Street, Worcester, Massachusetts or online at <https://worcesterma.viewpointcloud.com>.

ASPHALT JOINTS

Hot poured rubberized asphalt shall be used in the sealing of transverse and longitudinal Butt joints as specified in Section 460 of the Massachusetts Department of Transportation's Supplemental Specifications. Additionally, tack coat and stone dust shall be applied to all other joints composed of hot mix asphalt immediately after paving, or as required by the Contracting Officer.

Hot poured rubberized asphalt will be paid for under Item 435, whereas tack coat and stone dust shall be considered incidental, and compensation shall be included in the contract bid price for the respective hot mix asphalt items.

BARRICADES AND WARNING SIGNS

Prior to start of any work the Contractor will be required to supply and install construction safety signing on each approach to the work zone as directed by the Engineer. Signing shall read "STREET UNDER CONSTRUCTION" or "ROAD WORK AHEAD" or as directed by the Contracting Officer. Signing shall conform to applicable provisions of Section 850 of the Massachusetts Standard Specifications for Highways and Bridges latest edition.

COLD WEATHER PAVING

Paving operations will only be allowed when the air temperature is at least 40 degrees (F) and rising. Paving will not be allowed after November 15, 2025 without authorization from the Contracting Officer.

COMPACTION TESTING

Where required by the Contracting Officer, compaction testing will be done by the City of Worcester. The backfill shall be placed in suitable layers necessary to accomplish a minimum of 95% compaction which shall be achieved by mechanical or vibratory compaction equipment. The testing will apply to all areas of construction.

CONCRETE COLLARS

Concrete collars shall be placed around drainage, sewer, and telephone structures, water service boxes, and all utility boxes that are located in pavement areas or as otherwise directed by the Engineer. High early strength concrete shall be used if

required by the Engineer. Concrete used for collars shall not be measured for payment. Compensation shall be included in the contract bid price for the respective items.

COOPERATION BY CONTRACTOR

Attention is directed to the provisions relating to rights of public corporations and municipal departments to enter the site of the improvement and alter, replace, and/or install facilities at such times when the Contractor will be prosecuting other required work contiguous thereto.

DEFINITIONS

Except for specific reference to Department Standards and Operations, the usage of the term Contracting Officer shall mean the City of Worcester Commissioner of Public Works or their duly authorized Agent. Engineer shall mean the City of Worcester Director of Engineering or their duly authorized agent. Contractor shall mean the business entity awarded and contractually obligated to perform the work described in the contract documents.

DEWATERING

Where excavations become inundated with water, whether from groundwater or surface runoff, the Contractor shall be responsible for dewatering the excavation prior to installing structures and/or pipes and backfill. Dewatering activities shall be performed in such a manner as to prevent the transport of any sediment downstream. Locations of materials and methods used for dewatering shall be approved by the Engineer prior to use. Costs associated with dewatering activities shall be considered incidental to the overall project, and no additional compensation shall be made.

DISPOSAL, HANDLING, AND OWNERSHIP OF SURPLUS EXCAVATED MATERIALS / GRINDINGS

The grindings generated from the Contractor's milling operations may become the property of the City. If directed, the milled grindings shall be provided and transported to the City material drop off yard at 1065 Millbury Street by the Contractor, as directed by the Engineer.

As directed by the Engineer, any excess material generated from pulverization activities occurring under this contract and needed for reuse as sub-base in other locations of this contract shall be made available to the City. Said material shall be provided and transported to the location by the Contractor at no additional cost to the City.

All surplus excavated, milled, or pulverized material not required or suitable for reuse on the project, or otherwise not wanted by the City, shall become the property of the Contractor and removed and disposed of outside and away from the limits of the project at no additional cost to the City in accordance with all local rules and the approval of local governmental authorities having jurisdiction over the disposal of such materials. Any excess material that the City decides to keep shall be transported to and stored at the City material drop off yard at 1065 Millbury Street by the Contractor, as directed by

the Contracting Officer. Loading, transporting, and unloading shall be done by the Contractor without additional compensation. Payment for this work shall be included in the unit price under the applicable item from which the material was obtained.

DISTURBANCE OF EXISTING BOUNDS

Where existing bounds are disturbed by the Contractor's activities, they shall be reset by a Registered Land Surveyor at the Contractor's expense. A certification by the Registered Land Surveyor performing the work shall be made and submitted to the Engineer for all bounds reset.

DUST CONTROL

The Contractor is responsible for dust control throughout construction as required by the Engineer. The use of water or calcium chloride, as a means of controlling dust may be required to minimize airborne dust. The cost of which is to be incidental to the contract.

EMERGENCY CONTACT

The Contractor shall provide the name of the person to be notified for repairs or emergencies as well as a phone number at which this individual can be contacted 24-hours a day. Failure to respond to emergencies will necessitate the actuation of City crews at the Contractor's expense.

ESTABLISHMENT OF GRASS

The contractor will be responsible for the healthy growth of all grass seed placed until it is established, free of weeds, including watering. Any required replacement will be at no cost to the City. All required work, including excavation and re-loam and seeding, will be done at the contractor's expense. A component of any street being considered complete is the grass being fully established and healthy.

INSPECTION OF WORK

The Contractor is advised that the City of Worcester will be provided with a schedule of operations and will at various times during the construction of the project be on-site to inspect procedures and give directions. For the purpose of observing work that affects their respective properties, inspectors for public agencies and utility companies shall be permitted access to the work, but all official orders and directives to the Contractor will be issued by the City of Worcester Engineer or his duly authorized agent.

IRON CASTINGS AND PIPE

All new iron castings and pipe used on this project shall be North American made.

METHOD OR SEQUENCE OF CONSTRUCTION

The Contractor shall obtain approval for his proposed method and sequence of construction, including procedures for maintaining traffic, from the City of Worcester Engineer or his duly authorized agent, prior to performing the work.

NOTICE TO OWNERS OF UTILITIES AND PUBLIC SERVICE DEPARTMENTS:

Written notice shall be given by the Contractor to all public service corporations or officials owning or having charge of Public or Private Utilities and Departments of his intentions to commence operations affecting such utilities and Departments at least one (1) week in advance of the start of such operations and the Contractor shall at the same time file a copy of said notice with the Engineer.

The names of the principal City Departments and Utilities which may be affected will be provided to the Contractor at the pre-construction meeting.

**The Contractor shall notify “Massachusetts DIG SAFE” and procure a DIG SAFE number 72 hours prior to disturbing existing ground in any way.
DIG SAFE Call Center - 1-888-344-7233.**

Before the Contractor begins any work on operations which might result in damage to utility pipes or structures the Contractor shall verify the locations of existing overhead and subsurface utilities in the vicinity of the work with the listed Departments and Utility Companies and conduct his operations so as to avoid any damage to them.

OSHA REQUIREMENTS

The work to be performed under this Contract by the General Contractor and all subcontractors is to be performed in compliance with the Occupational Safety and Health Act of 1970, including all amendments thereto.

OVERLOADED TRUCKS

Materials delivered to the project in motor vehicles or semi-trailer units that exceed the legal maximum gross weight allowed for the particular class as specified in Section 19A of Chapter 90 of the General Laws of Massachusetts will not be accepted.

PEDESTRIAN ACCESS

An ADA compliant pedestrian walkway must be continuously maintained throughout the construction process. This can be accomplished by excavating one side of the roadway sidewalk, leaving the other side untouched until the excavated sidewalk is complete. If the Contractor wishes to excavate the sidewalks on both sides of the roadway simultaneously, an ADA compliant temporary pedestrian walkway must be constructed. The temporary walkway will include such items as roadway barriers, signage and signals, temporary striping, etc. Access to properties must be continuously maintained at all times during the construction process. No section of sidewalk is to remain unpaved for more than 7 days from date of excavation, unless otherwise directed by the contracting officer in writing. Any sidewalk section open for

more than 7 days is to be temporary paved, at no additional cost to the City. No allowance will be granted for weekends or holidays.

PRECAUTIONS UNDER ELECTRIC LINES

The bidders attention is directed to the AASHTO Guide on Occupational Safety on Highway Construction Projects, Subpart N, 1926.550, relating to construction equipment clearances at overhead electric lines, which states in part "... the minimum clearance between the lines and any part of the crane or load must be at least 10 feet from lines rated 50 KV or below, and greater distances for high voltage ...".

For the protection of personnel and equipment, the Contractor should be aware this regulation especially during paving operations using large semi-trailer vehicles.

PROCEDURES FOR SHOP DRAWING SUBMITTALS

The following procedure shall be followed when making shop drawing submittals for this project:

1. The Prime Contractor shall submit four (4) sets of drawings directly to the Engineer for preliminary review.
2. The Engineer will send a written reply, returning two (2) sets to the Prime Contractor within seven (7) working days of receipt of the drawings.
3. If the Engineer's reply indicates rejection or advises corrections or additions to the drawings, steps 1 and 2 are repeated until the Engineer indicates that approval will be given.
4. The Contractor shall then submit four (4) sets of drawings to the Engineer for approval and distribution by the Engineer per the standard operating procedures of the Department.
5. The Contractor shall take care that every separate document in each set of every submittal shall carry the following required information:
 - a) Project No.
 - b) Identifying Item Number from proposal, if applicable
 - c) Locations where material is proposed to be used, if applicable
 - d) Name of submitting contractor
 - e) Personal signature and title of an official of the Prime Contractor authorized to make shop drawings submittals
 - f) Date of signature or submittal

The Contractor shall not receive payment for, nor will he be allowed to install any item or materials which require shop drawing approval unless and until he receives shop drawing approval for that item.

Within 15 days after receipt of an approved shop drawing for any item, the Contractor shall provide the Engineer written proof that he has ordered such approved materials required on the subject contract and a written confirmation on such order and delivery schedule from the manufacturer of the item. This delivery schedule shall be appropriate for timely completion of this project.

PROJECT SUPERINTENDENT

The Contractor shall be required to have on site at all times during the course construction activities a full-time superintendent whom will be in responsible charge of this project. This individual will be the exclusive agent for the Contractor maintaining continuous correspondence with the Engineer. The Contractor will notify the Engineer in writing whenever a change of superintendent is warranted.

PROTECTION OF EXISTING TREES

Trees and shrubs that are not designated on the plans, or by the Engineer, to be cut, removed, destroyed, or trimmed shall be saved from harm and injury. The Contractor shall provide measures to prevent any harm and injury caused during construction operations.

PROTECTION OF EXISTING UTILITIES AND STRUCTURES

Excavation and backfill operations shall be carried out in a manner that will prevent cave-in of excavations or the undermining, damage or disturbing of existing utilities and structures or of new work.

Any excavations improperly backfilled, or where settlement occurs, shall be reopened to the depth required, then refilled with new materials and compacted, and the surface restored to the required grade and condition at no additional expense to the Owner.

Any damage due to excavation, backfilling or settlement of the backfill, or injury to persons or damage to property occurring as a result of such damage, shall be the responsibility of the Contractor. All costs to repair such damage, in a manner satisfactory to the Owner, shall be borne by the Contractor at no additional expense to the Owner.

Where existing subsurface utilities or other facilities adjacent to or crossing through the excavation require temporary support or protection, such temporary support or protection shall be satisfactorily provided by the Contractor at no additional expense to the Owner. All necessary measures shall be taken by the Contractor to prevent lateral movement or settlement of existing facilities or of work in progress.

Any raised structures exposed due to roadway milling along the curblin shall be spray painted around it and a traffic barrel placed upon it. Any raised structure exposed due to roadway milling within the parking or travel lanes shall be ramped with asphalt.

The plans indicate the approximate location of existing overhead and subsurface utilities in the vicinity of the work and the bidders are advised to verify this information, as its accuracy and completeness are not guaranteed by the Owner or Engineer.

PROTECTION OF UTILITIES AND PROPERTIES

The Contractor's attention is directed to the location of underground utilities in the existing and proposed roadways.

The Contract Drawings indicate the approximate location in plan of existing overhead and subsurface utilities in the vicinity of the work. Whatever measures are necessary to protect these lines during the work shall be included in the contract unit price for the various items involved.

In case of damage to utilities, the Contractor shall promptly notify the Owner and shall, if requested, furnish manpower under the Owner's direction in getting access to the utility.

Pipes or other structures damaged by the operation of the Contractor may be repaired by the Owner, the municipality, or the utility company. The cost of such repairs shall be borne by the Contractor without compensation therefore.

The work to be done under this contract may necessitate changes in the properties of utility companies or the municipality hereinbefore listed. Immediately after executing the contract, the Contractor shall confer with the owners of all utilities in order that relocations of mains or services may be made at times consistent with operations of the Contract.

PROVISIONS FOR TRAVEL AND PROSECUTION OF THE WORK

Access shall be maintained for all abutters so that they may use the driveways and approaches adjacent to their properties. Pedestrian access to abutting property and access for emergency vehicles shall be provided at all times.

Alternate one-way traffic may be maintained during working hours, however the Contractor will be required to provide two unobstructed lanes for two-way traffic during non-working hours.

All construction equipment, material and debris shall be removed from the traveled way at the end of each working day and shall be stored in such manner as not to interfere with the flow of driveway traffic or pedestrians.

The Contractor shall coordinate his work with the work to be done by other Contractors on the site, public utilities or other agencies, and he shall so schedule his operations as to cause the least interruption to the normal flow of all traffic types. Reasonable facilities shall be provided by the Contractor for the safe and convenient passage of pedestrians and vehicles through and within the project area.

Particular care shall be taken to establish and maintain methods and procedures which will not create unnecessary or unusual hazards to public safety. The placement of necessary devices will be for daily work periods and shall be removed after the completion of work operations. Signs having messages that are irrelevant to normal

traffic conditions shall be removed or properly covered at the end of each work period. Signs are to be kept clean at all times and legends shall be distinctive and unmarred.

RESPONSIBILITY FOR DAMAGE CLAIMS

The Contractor shall indemnify, defend and save harmless the Municipality and all of its or their offices, agents and employees against all suits, claims or liability of every name and nature, for or on account of any injuries to persons or damage to property arising out of or in consequence of the acts of the Contractor in the performance of the work covered by the Contract or failure to comply with the terms and conditions of said Contract, whether by himself or his employees or Subcontractors, but only in respect of such injuries or damages sustained during the performance and prior to the completion and acceptance of the work covered by the contract.

The Contractor will be held responsible for any and all claims for damage to underground structures such as, but not restricted to, water or gas mains, pipes, conduits, manholes or catch basins, due to his operation or to the operations of any of his Subcontractors.

RIGID ROAD BASE

Where rigid base exists the Contractor will be required to remove said base from around manholes, catch basins and water boxes and replace with superpave 12.5mm level 2 binder course thoroughly compacted in 2 lifts with a plate compactor. Superpave 12.5mm level 2 binder will be paid for under Item #424 Bituminous Concrete Drives and Various Areas for manholes and catch basins. The superpave 12.5mm level 2 binder course collar at water gate boxes will be a subsidiary obligation of the Contractor.

STAKEOUT

The Contractor shall be responsible for setting grade stakes for grading purposes and for re-establishing edges of pavement after reclamation or excavation operations, or as otherwise required by the Engineer.

STEEL PLATES IN CONSTRUCTION ZONES

At the end of each working day where trenches in areas of public travel are covered with steel plates, each edge of such plates shall be pinned and either beveled or protected by a slope of 2-feet horizontally to 1-inch vertically. Temporary bituminous concrete patching material shall be used to construct the ramps. The cost of necessary materials and their maintenance and removal will be considered incidental to the item involved with no separate payment.

STREET LIGHTING

Street lighting must be maintained during all phases of construction by operation of the existing street lighting infrastructure, or a substitute approved by the Contracting Officer.

STREET SWEEPING

The Contractor shall be responsible for street sweeping by mechanical street sweeper vehicle to clear the paved surface of all debris, to the extent as determined by the Engineer. The timing of the street sweeping operation should be such that the road remains sufficiently clean between the completion of the sweeping and the start of any reclamation and/or paving. Should the Engineer decide that the road surface requires additional sweeping, no additional compensation shall be offered to the Contractor to complete this process. No additional compensation will be allowed when street sweeping operations are used as a means of clearing off and/or exposing areas of pavement covered with vegetation or debris.

There shall be no separate payment for street sweeping. Payment for such work shall be included in the various cold planning, reclaiming, and hot mix asphalt items. All material collected from the street sweeping process shall be disposed of by the Contractor outside and away from the limits of the project in accordance with all local rules and regulations with no additional measurement or payment to be made.

TRAFFIC MANAGEMENT PLAN

The Contractor shall prepare and submit a traffic management plan to the Engineer for review and approval by the Engineer. The Traffic Management Plan shall be prepared for all streets in the contract, unless specifically directed otherwise by the Engineer. The Traffic Management Plan shall contain information on proposed detour routes if requested, location and type of detour and warning signs, barricades and other safety and traffic control means and devices to ensure a safe, orderly flow of vehicular and pedestrian traffic.

Traffic safety signage (STOP signs, DO NOT ENTER signs, ONE WAY signs, etc.) shall be maintained for the duration of construction, in all locations. The Contractor is fully responsible for the maintenance of any temporary signage.

All temporary and permanent signs, traffic control devices, and pavement markings shall conform to the latest relevant sections of the Manual on Uniform Traffic Control Devices (MUTCD), and the Massachusetts Standard Specifications for Highways and Bridges.

The Traffic Management plan shall be submitted for review at least seven (7) days prior to any work being performed on the project roadways. No work would be allowed until the Traffic Management Plan is approved by the Engineer and implemented by the Contractor.

Temporary pavement markings and other traffic control devices shall be provided in accordance with the Contractor's Traffic Management Plan and as directed by the Engineer.

The cost of preparing the traffic management plan and providing and maintaining temporary traffic control devices shall be borne by the Contractor.

USE OF CITY SUPPLIED MATERIAL TO REPLACE UNSUITABLES

If existing material excavated during construction is deemed unsuitable for backfill, at the City's discretion the City may supply additional material to be used as backfill, otherwise gravel borrow (M1.03.0 Type b) may be required. If the City supplies additional material to be used as backfill to replace unsuitable materials, no extra payment will be made.

VEHICULAR SAFETY

All automotive equipment not protected by traffic cones or flares that is working on the project in areas open to traffic shall have one amber flashing or strobe warning light mounted on the cab roof or on the highest practical point of the machinery. These lights shall be in operation whenever the equipment is working or traveling in the project work area at a speed less than 25 M.P.H. Flashers must be visible to both oncoming and overtaking vehicular traffic and shall have a light source of 32 minimum candlepower and a flashing frequency of 50-60 times per minute.

All personnel who are working in areas open to traffic shall wear MHD approved safety vests.

All vehicles except passenger cars which are assigned to the project which operate at speeds of 25 MPH or less shall have an official SLOW MOVING VEHICLE emblem displayed in accordance with the provisions of Section 7 of Chapter 90 of the General Laws as amended by Chapter 684 of the Acts of 1970.

WINTER SHUTDOWN

Any incomplete construction shall be stabilized for the winter on, or before November 15th, 2025. The stabilization shall allow the streets and sidewalks to be fully accessible throughout the winter. The contractor will be responsible for repairing any deficiencies to the stabilized areas. The final construction of any incomplete areas shall take place the following season, at no additional cost to the City.

LUMP SUM RESERVE

The Contractor is advised that the lump sum reserve for contingency work shall be utilized, as required by the Owner for additional work that may be required by the Owner and agreed to by the Contractor. This reserve will also be used for the Owner to compensate directly for flag men (When police are unavailable) and testing as determined by the contracting officer. Any reserve balance remaining at the end of the contract will return to the Owner.

The Owner reserves the right to reject any and all bids, wholly or in part, and to make awards in a manner deemed in the best interests of the Owner.

The above estimated quantities form an approximate statement of the extent of the work to be done, based upon the estimate of the Contracting Officer. The Owner does not expressly or by implication agree that the actual quantity of work will

correspond therewith, but reserves the right to increase or decrease the quantity of any class or portion of the work, as may be deemed necessary by the Contracting Officer.

DOCUMENT 00811

MONTHLY PRICE ADJUSTMENT FOR HOT MIX ASPHALT (HMA) MIXTURES ENGLISH AND METRIC UNITS

Revised:07/08/2016

This provision applies to all projects using greater than 100 tons (91 megagrams) of hot mix asphalt (HMA) mixtures containing liquid asphalt cement as stipulated in the Notice to Contractors section of the bid documents.

Price Adjustments will be based on the variance in price, for the liquid asphalt component only, between the Base Price and the Period Price. They shall not include transportation or other charges. Price Adjustments will occur on a monthly basis.

Base Price

The Base Price of liquid asphalt on a project as listed in the Notice to Contractors section of the bid documents is a fixed price determined by the Department at the time of the bid using the same method as the determination of the Period Price detailed below. The Base Price shall be used in all bids.

Period Price

The Period Price is the price of liquid asphalt for each monthly period as determined by the Department using the average selling price per standard ton of PG64-28 paving grade (primary binder classification) asphalt, FOB manufacturer's terminal, as listed under the "East Coast Market - New England, Boston, Massachusetts area" section of the Poten & Partners, Inc. "Asphalt Weekly Monitor". This average selling price is listed in the issue having a publication date of the second Friday of the month and will be posted as the Period Price for that month. The Department will post this Period Price on its website at <http://www.mhd.state.ma.us/> within two (2) business days following its receipt of the relevant issue of the "Asphalt Weekly Monitor". Poten and Partners has granted the Department the right to publish this specific asphalt price information sourced from the Asphalt Weekly Monitor. This method of period price determination was formerly called the New Asphalt Period Price Method. Separate website postings using both the New Asphalt Period Price Method and the Old Asphalt Period Price Method were discontinued after June 2013.

Price Adjustment Determination, Calculation and Payment

The Contract Price of the HMA mixture will be paid under the respective item in the Contract. Price Adjustments, as herein provided, either upwards or downwards, will be made after the work has been performed using the monthly period price for the month

during which the work was performed. Price Adjustments will be paid only if the variance from the Base Price is 5% or more for a monthly period. The complete adjustment will be paid in all cases with no deduction of the 5% from either upward or downward adjustments. The Price Adjustment applies only to the actual virgin liquid asphalt content in the mixture placed on the job in accordance with the Standard Specifications for Highways and Bridges, Division III, Section M3.11.03. Price Adjustments will be separate payment items. The pay item numbers are 999.401 for a positive price adjustment (a payment) and 999.402 for a negative price adjustment (a deduction). Price Adjustments will be calculated using the following equation: $\text{Price Adjustment} = \text{Tons of HMA Placed} \times \text{Liquid Asphalt Content \%} \times \text{RAP Factor} \times (\text{Period Price} - \text{Base Price})$. No Price Adjustment will be allowed beyond the Completion Date of this Contract, unless there is a Department approved extension of time.

DOCUMENT 00813

SPECIAL PROVISIONS

MONTHLY PRICE ADJUSTMENT FOR DIESEL FUEL AND GASOLINE – ENGLISH UNITS

Revised: 01/26/2009

This monthly fuel price adjustment is inserted in this contract because the national and worldwide energy situation has made the future cost of fuel unpredictable. This adjustment will provide for either additional compensation to the Contractor or repayment to the Commonwealth, depending on an increase or decrease in the average price of diesel fuel or gasoline.

This adjustment will be based on fuel usage factors for various items of work developed by the Highway Research Board in Circular 158, dated July 1974. These factors will be multiplied by the quantities of work done in each item during each monthly period and further multiplied by the variance in price from the Base Price to the Period Price. The Base Price of Diesel Fuel and Gasoline will be the price as indicated in the Department's web site (www.mhd.state.ma.us) for the month in which the contract was bid, which includes State Tax.

The Period Price will be the average of prices charged to the State, including State Tax for the bulk purchases made during each month. This adjustment will be effected only if the variance from the Base Price is 5% or more for a monthly period. The complete adjustment will be paid in all cases with no deduction of the 5% from either upward or downward adjustments. No adjustment will be paid for work done beyond the extended completion date of any contract. Any adjustment (increase or decrease) to estimated quantities made to each item at the time of final payment will have the fuel price adjustment figured at the average period price for the entire term of the project for the difference of quantity.

The fuel price adjustment will apply only to the following items of work at the fuel factors shown:

ITEMS COVERED	FUEL FACTORS	
	Diesel	Gasoline
Excavation: and Borrow Work: Items 120, 120.1, 121, 123, 124, 125, 127, 129.3, 140, 140.1, 141, 142, 143, 144., 150, 150.1, 151 and 151.1 (Both Factors used)	0.29 Gallons / CY.	0.15 Gallons / CY
Surfacing Work: All Items containing Hot Mix Asphalt	2.90 Gallons / Ton	Does Not Apply

DOCUMENT 00814

SPECIAL PROVISIONS

PRICE ADJUSTMENTS FOR PORTLAND CEMENT CONCRETE MIXES **JANUARY 12, 2009**

This provision applies to all projects using greater than 100 Cubic Yards (76 Cubic Meters) of Portland cement concrete containing Portland cement as stipulated in the Notice to Contractors section of the Bid Documents. This Price Adjustment will occur on a monthly basis.

The Price Adjustment will be based on the variance in price for the Portland cement component only from the Base Price to the Period Price. It shall not include transportation or other charges.

The Base Price of Portland cement on a project is a fixed price determined at the time of bid by the Department by using the same method as for the determination of the Period Price (see below) and found in the Notice to Contractors.

The Period Price of Portland cement will be determined by using the latest published price, in dollars per ton (U.S.), for Portland cement (Type I) quoted for Boston, U.S.A. in the Construction Economics section of ENR Engineering News-Record magazine or at the ENR website <http://www.enr.com> under Construction Economics. The Period Price will be posted on the MassHighway website the Wednesday immediately following the publishing of the monthly price in ENR, which is normally the first week of the month. The Contract Price of the Portland cement concrete mix will be paid under the respective item in the Contract. The price adjustment, as herein provided, upwards or downwards, will be made after the work has been performed, using the monthly period price for the month during which the work was performed. The price adjustment applies only to the actual Portland cement content in the mix placed on the job in accordance with the Standard Specifications for Highways and Bridges, Division III, Section M4.02.01. No adjustments will be made for any cement replacement materials such as fly ash or ground granulated blast furnace slag. The Price Adjustment will be a separate payment item. It will be determined by multiplying the number of cubic yards of Portland cement concrete

placed during each monthly period times the Portland cement content percentage times the variance in price between the Base Price and Period Price of Portland cement. This Price Adjustment will be paid only if the variance from the Base Price is 5% or more for a monthly period. The complete adjustment will be paid in all cases with no deduction of the 5% from either upward or downward adjustments. No Price Adjustment will be allowed beyond the Completion Date of this Contract, unless there is a Department-approved extension of time.

ITEM 171.001 SILT SACK**EACH****A. GENERAL**

Work under this item shall conform to the relevant provisions Section 171 and Subsections 690 of the MassDOT Standard Specifications and the following:

The work under this item includes the furnishing, installation, maintenance and removal of a reusable fabric sack to be installed in drainage structures for the protection of wetlands and other resource areas and the prevention of silt and sediment from the construction site from entering the storm water collection system. Devices shall be sourced from ACF Environmental (800)-448-3636; Reed & Graham, Inc. Geosynthetics (888)-381-0800; The BMP Store (800)-644-9223; or approved equal.

B. CONSTRUCTION METHOD

Silt sacks shall be installed in retained existing and proposed catch basins and drop inlets within the project limits and as required by the Engineer.

The silt sack shall be manufactured to fit the opening of the drainage structure under regular flow conditions and shall be mounted under the grate. The insert shall be secured from the surface such that the grate can be removed without the insert discharging into the structure. The filter material shall be installed and maintained in accordance with the manufacturer's written literature and as required by the Engineer.

Silt sacks shall remain in place until the placement of the pavement overlay, or top course and the graded areas have become permanently stabilized by vegetative growth. All materials used for the filter fabric will become the property of the Contractor and shall be removed from the site.

The Contractor shall inspect the condition of silt sacks after each rainstorm and during major rain events. Silt sacks shall be cleaned periodically to remove and dispose of accumulated debris as required. Silt sacks, which become damaged during construction operations, shall be repaired, or replaced immediately at no additional cost to the Department.

When emptying the silt sack, the Contractor shall take all due care to prevent sediment from entering the structure. Any silt or other debris found in the drainage system at the

end of construction shall be removed at the Contractor's expense. The silt and sediment from the silt sack shall be legally disposed of offsite. Under no condition shall silt and sediment from the insert be deposited on site and used in construction.

All curb openings shall be blocked to prevent stormwater from bypassing the device.

All debris accumulated in silt sacks shall become the property of the Contractor and handled and disposed of in accordance with all applicable Federal, State, and Local regulations.

C. METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Silt Sacks will be measured and paid for at the Contract unit price per each, complete in place, which price shall include all labor, materials, equipment and incidental costs required to complete the work. No separate payment will be made for removal and disposal of the sediment from the insert, regardless of the frequency of removal and disposal, but all costs in connection therewith shall be included in the Contract unit price bid.

ITEM 403.2 GRINDING AND MILLING 2 INCH**SQUARE YARD****A. GENERAL**

This work shall consist of milling and removal of existing HMA pavement courses from the project by the Contractor. Milling shall be performed in conformity with the limits, line, grade, and typical cross-section shown on the plans. The milling operation shall be categorized as either Standard Milling, Fine Milling, Micro Milling, or Bridge Pavement Milling as defined in Table 415.20-1. The milled material shall become the property of the Contractor.

Type	Tooth Spacing (in.)	Cut Depth(in.)	Ridge to Valley Depth (in.)
Pavement Standard Milling	5/8	0 to 8	5/16
Pavement Fine Milling	3/8	0 to 2 1/2	3/16
Pavement Micro Milling	1/4	0 to 1 1/2	1/16
Bridge Pavement Milling	3/8	0 to 1	3/16

B. CONSTRUCTION METHOD

The Contractor shall provide satisfactory QC of the milling operation as further outlined in 415.61: Milled Surface Inspection. The specific QC procedures to be implemented shall be identified in the Contractor's QC Plan for HMA, submitted in accordance with the requirements of Subsection 450: Hot Mix Asphalt Pavement. The Contractor shall present and discuss in sufficient detail the QC information and activities related to milling at the Construction Quality Meeting required under Subsection 450: Hot Mix Asphalt Pavement.

C. METHOD OF MEASUREMENT AND BASIS OF PAYMENT

All pavement milling of existing HMA pavement will be paid for at the contract unit price per square yard. This price shall include all QC activity related to the milling operation, all equipment, tools, labor, incidental materials, and removal and disposal of milled material. No additional payments will be made for multiple passes with the milling machine to remove the existing HMA surface to the grade specified. The work shall also include:

- Milling of existing concrete repair materials at grade.
- Providing protection to underground utilities from the vibration of the milling operation.
- Sawcutting milled limits, installing and removing any temporary transition.

- Performing handwork removal of existing pavement and providing protection around bridge joints, catch basin inlets, manholes, utility valve boxes and any similar structures.
- Furnishing a sweeper and sweeping after milling.
- Removing and disposing of millings.
- Milled surface sweeping prior to tack coat application and paving operations.
- Repairing surface defects as a result of the Contractor's negligence.

ITEM 456.001 CONCRETE STEPS (BELMONT STREET)

LUMP SUM

A. GENERAL

Work to be done under this item shall conform to applicable provisions of section 400 and the following: removal, excavation, gravel base, wood forms, placing and finishing of cement concrete for new steps to conform to the line and grades shown on the plans. When new steps are to be built, they shall conform to the design detail titled "Concrete Steps Detail."

Class C (3,000 psi, 1-1/2", 470) concrete shall be used.

B. METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Concrete steps shall be measured in place and paid for at the unit price bid per lump sum, per location, for the proposed stair set at the Belmont Street at Rodney Street intersection. Metal handrail associated with the steps shall be measured and paid for under Item 478.001.

ITEM 478.001 METAL PIPE RAIL (BELMONT STREET) LINEAR FOOT

A. GENERAL

This work shall consist of the construction of metal pipe handrail in accordance with Subsection 660 of the MassDOT Standard Specifications for Highways and Bridges, the following provisions, and in close conformity with the lines and grades shown on the plan or established by the Engineer.

Materials shall meet the requirements specified in the following Subsections of Division III, Materials:

Rails and Posts.....	M8.10.0, Part A
Fittings	M8.10.0, Part B
LeadWood.....	M8.10.0, Part C
Bitumen.....	M8.10.0, Part D
Paint (Primer Coat)	
Zinc Dust-Zinc Oxide.....	M7.04.07
Paint (Finish Coat)	
Enamel.....	M7.03.0

B. CONSTRUCTION METHODS

All posts shall be set vertical. In setting the posts precautions shall be taken to insure proper alignment and leveling to prevent springing or bending the railing in erecting. All railings shall be straightened as required before setting up. All horizontal pipes shall be provided with approved expansion couplings at intervals of not more than 50 ft. Welding shall conform to the requirements of 960.61: Design, Fabrication and Erection. After erection and welding all welds shall be cleaned and coated with a spot coat of M7.04.07 (TT-P641G, Type 11 Primer Coating: Zinc Dust-Zinc Oxide). The fabricator shall be on the Department's approved fabricator's list.

C. METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Metal pipe handrails will be measured in place and the quantity paid for will be the length as constructed outside to outside of end posts or top rail, whichever is greater, including all appurtenant metal handrails, vertical supports, mounting brackets, hardware, and any incidentals, complete in place.

ITEM 500.001 PAVEMENT MARKING REMOVAL**SQUARE FOOT****A. GENERAL**

Work under this item shall conform to the relevant provisions under Section 850 of the MassDOT Standard Specifications for Highways and Bridges and the following:

The Contractor shall carefully remove all existing pavement markings that are shown on the plan, are in conflict with proposed pavement markings, and/or as directed by the Engineer.

Pavement Marking Removal consists of removing existing pavement markings as called out on the plans and as directed by the Engineer. Raised Pavement Marker Removal consists of removal and disposal of the existing raised pavement markers including filling the void.

B. CONSTRUCTION METHODS

Existing pavement markings shall be removed to the fullest extent possible by an approved method. Pavement marking removal methods shall not cause damage to the pavement or cause drastic change in texture, which could be construed as delineation at night, and shall be approved by the Engineer. It is not permissible to paint over existing markings with black paint in lieu of removal. Approved methods include but are not limited to:

1. High pressure air.
2. High pressure water (cold weather use not permitted)
3. Sand blasting,
4. Mechanical devices such as grinders, sanders, scrapers, scarifiers and wire brushes.

Painting over a pavement marking line by use of asphaltic liquids or paints will not be permitted. Conflicting pavement markings shall be removed before any change is made in the traffic pattern.

Material deposited on the pavement as a result of removing markings shall be removed as the work progresses. Accumulations of sand or other material, which might interfere with drainage or could constitute a hazard to traffic, will not be permitted.

Any damage to the pavement or surfacing caused by pavement marking removal shall be satisfactorily repaired at no additional cost to the Department.

Where the removal operation is being performed near a lane occupied by traffic, a vacuum attachment operating concurrently with the removal operation must be in use. All residue shall be removed immediately from the surface being treated.

Existing raised pavement markers shall be removed by a method approved by the Engineer. Any damage to the pavement or surfacing caused by pavement marking removal shall be repaired at no additional cost by methods acceptable to the Engineer.

Voids in the pavement shall be filled with like materials with adhesive bonding to the substrate.

C. METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Item 500.001 shall be measured for payment and paid for at the Contract Unit Price per SQUARE FOOT of existing pavement markings removed. Payment shall constitute full compensation for removal and disposal of existing pavement markings, including any necessary repairs to the roadway surface, and any incidental costs required to complete the work.

**ITEM 504.001 PAVEMENT ARROW/LEGEND REFLECTORIZED WHITE EACH
(PREFORMED THERMOPLASTIC)**

A. GENERAL

Work under this item shall conform to the relevant provisions under Section 500 and Section 860 of the MassDOT Standard Specifications for Highways and Bridges and the following:

Preformed thermoplastic arrows/legends shall be reflective Ennis Flint® PreMark® pavement markings or approved equal. Application shall comply with the manufacturer's specifications.

The Contractor shall submit to the Engineer for review and approval a cut sheet and/or technical product brochure for the intended material to be used prior to installation.

B. METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Item 504.001 shall be measured for payment and paid for at the Contract Unit Price per each of preformed pavement marking arrow(s)/legend(s) installed, complete in place. Payment shall constitute full compensation for furnishing preformed marking materials, surface preparation, installation, protection, including any and all incidental costs required to complete the work.

ITEM 509.001 BICYCLE LANE SYMBOL WITH ARROW OR SHARROW EACH
(PREFORMED THERMOPLASTIC)**A. GENERAL**

Work under this item shall conform to the relevant provisions under Section 500 and Section 860 of the MassDOT Standard Specifications for Highways and Bridges and the following:

Preformed thermoplastic bicycle lane symbol(s) with arrow(s) or sharrow(s) shall be reflective Ennis Flint® PreMark® pavement markings or approved equal. Application shall comply with the manufacturer's specifications.

The Contractor shall submit to the Engineer for review and approval a cut sheet and/or technical product brochure for the intended material to be used prior to installation.

B. METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Item 509.001 shall be measured for payment and paid for at the Contract Unit Price per each of preformed pavement marking arrow(s)/legend(s) installed, complete in place. Payment shall constitute full compensation for furnishing preformed marking materials, surface preparation, installation, protection, including any and all incidental costs required to complete the work.

ITEM 520.001 TRAFFIC SIGN REMOVED AND RESET EACH**A. GENERAL**

Work under this item shall conform to the relevant provisions under Section 828 and Section 840 of the MassDOT Standard Specifications for Highways and Bridges and the following:

The Contractor shall carefully remove and reset all signs as called out on the plans and as directed by the Engineer. Removal and resetting shall include all attachment hardware and sign support posts.

B. METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Traffic Signs Removed and Reset will be measured and paid for at the contract unit price per each, complete in place.

ITEM 523.001 TRAFFIC SIGN POLES

EACH

A. GENERAL

Work under this item shall conform to Section 500, the relevant provisions under Subsections 828 and 840 of the MassDOT Standard Specifications for Highways and Bridges, and the following:

All Traffic and Street Signs shall be mounted on 2 inch black (Paint/Powder coat finish) quick punch square galvanized poles. All poles shall be secured to 2 1/4 inch galvanized anchors extending no more than 6 inches above finished grade of sidewalk or tree lawn (Hardware shall consist of 5/16 " zinc plated corner bolt fastened with an acorn nut.)

All street name signs will be mounted on top of pole with a top mount bracket and or by means of a cantilever bracket. Signs shall be parallel to corresponding street. Signs in excess of 36" long, mounted with a cantilever bracket shall be mounted with a bracket extension.

All pole assemblies without top mounted signs will be fitted with 2" Rain Caps. All Signs shall be secured to poles by means of vandal proof 5/16" rivets. All signs shall be marked on the back side in line with mounting holes with location and date of installation.

B. METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Traffic sign poles will be measured and paid by the contract unit price per EACH, complete in place.

ITEM 523.002 TRAFFIC SIGN REMOVED AND STACKED

EACH

A. GENERAL

Work under this item shall conform to the relevant provisions under Section 828 and Section 840 of the MassDOT Standard Specifications for Highways and Bridges and the following:

The Contractor shall carefully remove and stack all signs as shown on the plans for inspection by the Engineer. Signs deemed suitable by the Engineer shall be delivered to the Worcester DPW & Parks. Signs deemed to be unsuitable by the Engineer will become property of the Contractor for disposal.

B. METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Traffic signs removed and stacked will be measured and paid for at the contract unit price per each.

ITEM 612.001 TRAFFIC SIGNAL REMOVE AND DISCARD**LUMP SUM****A. GENERAL**

Work under this item shall conform to the relevant provisions under Section 815 of the MassDOT Standard Specifications for Highways and Bridges and the following:

Work shall include the dismantling, removal, transporting, and storing of existing traffic signals at the locations shown on the plans.

Any existing signal damaged by the Contractor's operations shall be replaced in-kind by the Contractor at the Contractor's expense.

Included under this item are warning, regulatory, route marker and miscellaneous signs that may be affixed to the traffic signal to be removed and discarded.

The Contractor shall backfill with compacted gravel all holes resulting from the removal of the existing signs and their foundations and restore the area to match existing conditions of adjacent areas.

B. CONSTRUCTION METHODS

When removal of existing traffic signal equipment and appurtenances is called for, the order of work shall be as directed by the Engineer. Removal of existing traffic signal equipment and its accessories shall be done in a manner that will not damage reusable material.

All signal posts and bases shall be separated from one another without damage to either unit (4-in. shaft unscrewed from base).

When stipulated, existing material shall be utilized in the construction of the new installation. Material to be installed shall be thoroughly cleaned before reinstallation. All reinstalled material, after cleaning and spot coating, shall receive two brush coats of paint to all parts as specified for new installations. Paint shall be applied after material is in place.

The Contractor shall furnish and install all necessary materials and equipment, including new foundations, etc. required to complete the reinstallation, if called for.

All traffic signals, flashing beacons and pedestrian signals to be reinstalled shall be relamped with new lamps of the size and type required for new installations.

Existing material removed and not utilized in the new installation shall be salvaged and transported by the Contractor to the Worcester DPW & Parks.

Underground conduit, conductors, foundations and detector frames not reused shall be removed from the project, except if not interfering with other construction, they may with written approval of the Engineer be abandoned in place.

C. METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Item 600.001 shall be measured for payment and paid for at the Contract Unit Price per LUMP SUM for existing traffic signal unit removed and discarded where called out on the plans. Payment shall constitute full compensation for dismantling, loading and transporting of the signal(s) as designated above, gravel backfill, electrical work to decommission the traffic signal and safely terminate connections in existing handholes in accordance with applicable codes and as authorized by the Engineer, and incidental costs required to complete the work.

ITEM 612.002 RRFB REMOVED AND TRANSPORTED **EACH**

A. GENERAL

Work under this item shall conform to the relevant provisions under Section 815 of the MassDOT Standard Specifications for Highways and Bridges and the following:

The Contractor shall carefully remove and transport existing Rectangular Rapid Flash Beacons (RRFB), and affixed components, including but not limited to flashing beacon, signage, controller, and solar panels, as shown on the plans. Resetting of the RRFBs after installation of the foundation will be performed by the Worcester DPW & Parks.

Work shall include the dismantling, removal, transporting, and storing of existing RRFBs at the locations shown on the plans.

Any existing RRFB, and components thereof, damaged by the Contractor's operations shall be replaced in-kind by the Contractor at the Contractor's expense.

Existing RRFBs called to be removed and transported shall be loaded and delivered by the Contractor to the Worcester DPW & Parks.

B. METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Item 612.002 shall be measured for payment and paid for at the Contract Unit Price per each for each RRFB removed and transported to the DPW yard. Payment shall constitute full compensation for dismantling, loading and transporting of the RRFBs as designated above, and incidental costs required to complete the work.

ITEM 748 MOBILIZATION**LUMP SUM****A. GENERAL**

This item shall consist of preparatory work and operations including, but not limited to, those necessary for the movement of personnel, equipment, supplies, and incidentals to the project site(s), for the establishment of all contractor's field offices, buildings, and other facilities necessary for work on the project and all other work and operations which must be performed or for costs which must be incurred prior to beginning work. The unit bid price for Item 748, Mobilization shall not exceed 3% of the contract bid total, exclusive of this item. Failure to observe this requirement may result in rejection of the bid.

B. CONSTRUCTION METHOD

The work required to provide the above facilities and services for Mobilization shall be done in a safe and workmanlike manner and shall conform with any pertinent local or state law, regulation, or code. Good housekeeping consistent with safety shall be maintained.

C. METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Payment for Mobilization will be made on a lump sum basis.

1. The first payment of one third of the lump sum price for Mobilization or 1% of the total bid price, whichever is less, will be made on the first estimate.
2. The second payment of one third of the lump sum price for Mobilization or 1% of the total bid price, whichever is less, will be made following the completion of 5% of the total Contract price.
3. The third payment of one third of the lump sum price for Mobilization or 1% of the total bid price, whichever is less, will be made following the completion of 10% of the total Contract price.
4. Upon completion of all the work on the project, payment of any amount bid for Mobilization in excess of the total amount previously paid, will be paid by the Department.

ITEM 810.001 COMMUNICATIONS BOX ADJUSTED

LUMP SUM

A. GENERAL

Work under this item shall conform to the relevant provisions under Subsection 801 of the MassDOT Standard Specifications for Highways and Bridges and the following:

The communication box located at the intersection of Belmont Street and Rodney Street shall be adjusted to the lines, grades, dimensions, and designs shown on the plans or in accordance with the applicable provisions of Subsection 201: Basins, Manholes, and Inlets, and in coordination and/or collaboration with the applicable utility company.

B. METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Communication box adjusted shall be measured for payment per lump sum. Payment shall include full compensation for all materials, labor, equipment, supervision and incidental required to adjust the communications box to the line and grade specified on the plans, complete in place.

ITEM 812.301 PRECAST CEMENT CONCRETE RRFB FOUNDATION

EACH

A. GENERAL

This special provision outlines the requirements for the installation of precast cement concrete rectangular rapid flashing beacon (RRFB) foundations in accordance with the Massachusetts Department of Transportation (MassDOT) standards and in accordance with the construction details provided in the plans.

B. MATERIAL & CONSTRUCTION METHOD

All precast cement concrete materials shall comply with MassDOT specifications M4.02.14 for quality and strength. Provide steel reinforcement bars conforming to M8.01.0 and as detailed in the project plans. Use galvanized anchor bolts complying with M8.01.5 for securing the RRFB assembly to the foundation.

The Contractor shall excavate the foundation area to the dimensions specified in the project plans and at the elevations indicated. Place the precast cement concrete RRFB foundation in the excavated area, ensuring proper alignment and elevation as per the project plans. Backfill around the foundation with approved materials and compact in layers to achieve the required density. Install anchor bolts in accordance with the manufacturer's recommendations and project plans, ensuring proper embedment and alignment. Grout around the base of the precast foundation to provide additional stability and prevent water infiltration. Allow the concrete to cure for the specified duration before proceeding with further construction activities.

The Contractor shall ensure that all materials and workmanship comply with MassDOT standards and project specifications and shall conduct necessary tests as per MassDOT requirements to verify the quality and strength of the precast concrete and reinforcement. The Contractor shall protect the installed RRFB foundations from damage during construction activities and until the RRFBs are installed by the Worcester DPW & Parks. The Contractor shall replace the foundations at their expense should the foundations be damaged in anyway for lack of protection prior to the installation of the RRFBs by the Worcester DPW & Parks.

C. METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Measurement and payment for Precast Cement Concrete RRFB Foundations will be by the contract unit price per each. Payment shall include full compensation for all materials, labor, equipment, supervision, and incidentals required to furnish and install RRFB foundations at the locations called for in the plans, complete in place.