TOWN OF WATERTOWN
WATERTOWN, CONNECTICUT

NOTICE OF BID

Bassett Road Reconstruction
Watertown Public Works Department

Sealed bids are invited and will be received by the Purchasing Agent of the Town of Watertown at the office of the Purchasing Agent, Town Hall Annex, 424 Main Street, Watertown, Connecticut, until **11:00 a.m., Thursday, May 21st, 2020** at which time and place they will be publicly opened and read aloud for furnishing aggregate material crushing services to the Town of Watertown.

The Information for Bidders, Form of Bid, Specifications, and other contract documents may be obtained or examined at the office of the Purchasing Agent, Town Hall Annex, 424 Main Street, Watertown, Connecticut 06795 or by accessing the Town of Watertown’s website at [http://www.watertownct.org](http://www.watertownct.org). Proposals must be submitted on the forms provided and in a sealed envelope plainly marked “Bid – Bassett Road”.

**Mandatory Pre-Bid Meeting** for viewing the proposed scope of services required, and obtaining information relating to the proposed project at **11:00 a.m. Monday, May 4th, 2020** at the jobsite. No additional viewing appointments will be scheduled. Bidders are required to attend this scheduled Pre-Bid Meeting.

To receive consideration bids must be in the hands of the Purchasing Agent or his authorized representative no later than the day and hour mentioned above.

The Purchasing Agent reserves the right to accept or reject any or all bids; to waive any informality; or to accept any bid deemed in the best interests of the Town of Watertown.

The Town of Watertown reserves the right to take into account the residency of bidders within the Town of Watertown and/or the location of the bidder’s business within the Town of Watertown in awarding this bid.

All bids will be considered valid for a period of sixty (60) days.

Jason Warner
Purchasing Agent
Town of Watertown
INFORMATION FOR BIDDERS

TOWN OF WATERTOWN
WATERTOWN, CONNECTICUT 06795

Bassett Road Reconstruction
Watertown Public Works Department

BID OPENING: 11:00 a.m., Thursday, May 21st, 2020

PROPOSALS RECEIVED
All bids must be in a sealed envelope and received prior to 11:00 a.m., Thursday, May 21st, 2020 at the office of the Purchasing Agent, 424 Main Street, Watertown, Connecticut 06795.

PREPARATION OF PROPOSALS
Proposals must be made upon forms contained herein. The blank spaces in the Proposal must be filled in correctly where indicated. The Bidder must state the prices for which he proposes to do each item of the work contemplated. In case of discrepancy where both words and the numerals are requested, the words shall govern. Ditto marks are not considered writing or printing and shall not be used. The Bidder shall sign his Proposal correctly. If the Proposal is made by an individual, his name, post office address and telephone number must be shown. If made by a firm, partnership, or corporation, the Proposal must be signed by an official of the firm, partnership, or corporation authorized to sign contracts, and must show the post office address and telephone number of the firm, partnership, or corporation. Failure to do so may disqualify the bid.

Each bid must be submitted in a sealed envelope bearing on the outside the name of the Bidder, post office address, and name of the project for which the bid is submitted. If forwarded by mail, the sealed envelope containing the bid must be enclosed in another envelope addressed to: The Purchasing Agent, Town Hall Annex, 424 Main Street, Watertown, CT 06795.

All information shall be entered in ink or by typewriter. Mistakes may be crossed out and corrections inserted before submission of your bid. The person signing the bid shall initial corrections in ink.

Corrections and/or modifications received after the closing time specified will not be accepted.

SUBMISSION OF PROPOSALS
All proposals and literature shall be submitted IN DUPLICATE on the proposal form, which is a part of these specifications.

Descriptive literature containing complete specifications must accompany each bid. If a bidder wishes to furnish additional information, more sheets may be added.

Adobe Acrobat® Reader is required to view electronic documents on-line. If you do not have Adobe Acrobat® Reader, you may down load it for free from Adobe at http://www.adobe.com/products/acrobat/readstep.html.
Response summaries will be available online at [http://www.watertownct.org](http://www.watertownct.org) on the day of the bid opening.

Responses delivered via fax are received subject to the following qualifications and limitations:

- The Town is not responsible for the confidentiality of the information transmitted.
- The Town cannot guarantee that its fax equipment will be operational and able to receive transmittals by a particular time and date. It is the Bidder's responsibility to ensure that quotations are received in their entirety and on time at the required location. It is recommended that vendors be advised to call immediately after transmitting a document electronically to confirm complete and accurate receipt by the Town. The Town assumes no liability in the event that a bidder’s electronic transmission is not received by the Town in a timely fashion, or is not received either in its entirety or error-free.
- Bids transmitted electronically which have a bond requirement are subject to the same submittal requirements as those responses delivered via traditional means, such as mail or hand delivery, or as otherwise stipulated by appropriate authority.

**INCURRING COSTS**

The Town of Watertown is not liable for any cost incurred for the preparation of proposals or submission of samples by the firms submitting proposals for the work requested in this bid document or request for proposals.

**FAMILIARITY WITH THE WORK**

Each bidder is considered to have examined the work to fully acquaint himself with the exact existing conditions relating to the work and has fully informed himself as to the work involved and the difficulties and restrictions attending the performance of this bid. Failure to do so will not relieve a bidder of his obligation to furnish all materials, labor and equipment necessary to carry out the work for the consideration set forth in this bid. The submission of a bid will be considered as conclusive evidence that the bidder has made such examination.

Where exploration or inspection data is shown on the Plans and/or specifications or made available to the Bidder, it is understood that such data where obtained in the usual manner and with reasonable care and are to be interpreted and used as the Bidder sees fit. There is no expressed or implied agreement that the data has been correctly indicated, and the Bidder is cautioned to take into account that conditions affecting the work may differ from those indicated.

The Owner assumes no responsibility whatsoever with respect to ascertaining for the Contractor such facts concerning physical characteristics relating to this project. The Bidder agrees that he shall make no claim for and has no right to additional payment or extension of time for completion of the work, or any other concession, because of any interpretations or misunderstanding on his part of this bid, or because of any failure on his part to fully acquaint himself with all conditions relating to the work. Permission for making borings, test pits, destructive tests or other investigations of subsurface conditions will be arranged for by the bidder upon receipt of a written approval by the Town.

**CONSIDERATION OF PRIOR SERVICE**

Previous performance, quality of service and merchandise will be considered.
ADDENDA AND INTERPRETATIONS & ALTERNATE PROPOSALS

Addenda information will be available online at http://www.watertownct.org. Adobe Acrobat® Reader may be required to view this document. It is strongly suggest that Bidders check for any addenda a minimum of forty eight hours in advance of the bid deadline.

At the time of the opening of bids each Bidder will be presumed to have inspected the work and to have read and to be thoroughly familiar with all of the Contract Documents (including all addenda). The failure or omission of any Bidder to receive or examine any form, instruction or document shall in no way relieve any bidder from any obligation in respect to his bid.

If any person contemplating submitting a proposal is in doubt as to the true meaning of any part of these specifications, he may submit a written request for an interpretation to the Purchasing Agent. No interpretations as to the meaning of the plans, specifications or other Contract Documents will be made to any Bidder orally.

Every request for such interpretation should be emailed to the Town of Watertown’s, Purchasing Agent at warner@watertownct.org. To be given consideration, it must be received at least five (5) days prior to the date fixed for the opening of Bids. Any and all such interpretations and any supplementary instructions will be in the form of written Addenda to the Specifications which, if issued, will be posted to the Town’s website no later than three (3) days prior to the date fixed for the opening of bids. Failure of any Bidder to receive any such Addendum or interpretations shall not relieve any Bidder from any obligations under his bid as submitted. All Addenda so issued shall become part of the Contract Documents. Oral explanations will not be binding on the Town.

The specifications listed are to be interpreted as meaning the minimum acceptable by the Town of Watertown. Bidders are requested to submit quotations on the basis of these specifications. Alternative bids providing a broader scope and/or services than requested in these specifications may receive consideration providing such equipment and/or service is clearly explained. Any exceptions to the specifications requested herein must be clearly noted in writing and are to be included as a part of the bid proposal. If none are included it will be assumed that there are none.

Definition of the word "complete" means that each unit of the equipment proposed shall include all appurtenances, fasteners, parts, accessories, and services ordinarily catalogued.

An item equal to that named or described in the specifications may be furnished by the Bidder, except where expressly noted as “no substitutions.” The naming of any commercial name, trademark, or other identification shall not be construed to exclude any item of any manufacturer not mentioned by name, nor limit competition, but shall establish a standard of equality only. An item shall be considered equal to the item so named or described if:

- It is at least equal in quality, durability, appearance, strength and design.
- It will perform at least equally the function imposed by the design for the work being contracted for or the material being purchased.
- It conforms substantially, even with deviations, to the detailed requirements for the item in the specifications.

The Bidder shall hold the Town of Watertown, its officers, agents, servants, and employees, harmless.
from liability of any nature or kind because of use of any copyrighted or uncopyrighted compositions, secret process, patented or unpatented inventions, articles or appliances furnished or used under this bid, and agrees to defend, at his own expense, any and all actions brought against the Town of Watertown or himself because of the unauthorized use of such articles.

**QUOTATION LIMITATION**

Bidders shall offer only **ONE ITEM AND PRICE** for each line item bid. If an “or equal” item is to be bid, the bidder is to select the brand and model that meets or exceeds the specified item, and submit his bid for that item.

**ESTIMATE OF WORK**

For bidding purposes, the work has been subdivided into unit price items. The quantities shown are to be considered as approximate only. The Purchasing Agent does not expressly or by implication agree that the actual quantity will correspond therewith, but reserves the right to increase or decrease the amount of any item or portion of the work as deemed necessary.

**WITHDRAWAL OF BID**

Bidders may withdraw their proposals at any time prior to the bid date. No agent/broker shall withdraw or cancel their proposal for a period of sixty (60) days after the bid closing date of **11:00 a.m., Thursday, May 21st, 2020**. The successful agent/broker shall not withdraw, cancel or modify their proposal.

**POWER OF ATTORNEY**

Attorneys-in-fact who sign contract bonds must file, with each bond, a certified and effectively dated copy of their power of attorney.

**SUBCONTRACTORS**

- Each bidder contemplating the use of any subcontractor shall submit a list of subcontractors as listed on the Bid Form.
- The apparent low bidder shall file with the Town of Watertown, within five (5) days after the date of bid opening, a complete list of the names and addresses of competent, responsible and qualified subcontractors who are actually to perform major portions of the work. This in no way restricts or limits the requirement that all subcontractors must be approved by the Town.
- Subcontractors listed on the Bid Form or those previously approved may not be changed without the approval of the Town of Watertown.

Local subcontractors, material suppliers, and labor in the Town of Watertown should be considered and sought insofar, as is practical in the performance of this project.

**QUALIFICATION OF BIDDER**

In determining the qualifications of a bidder, the Town may consider his record in the performance of any contracts for similar work into which he may have previously entered; and the Town expressly reserves the right to reject the bid of such bidder if such record discloses that such bidder, in the opinion of the Town, has not properly performed such contracts or has habitually, and without just cause, neglected the payment of bills or has otherwise disregarded his obligations to subcontractors, suppliers, state or local codes, men or employees of subcontractors.
The Town may make such investigation as he deems necessary to determine the ability of the bidder to perform the work and the bidder shall furnish to the Town all such information and data for this purpose as the Town may request. The Town reserves the right to reject any bid if the evidence submitted by or the investigation of such bidder fails to satisfy the Town that such bidder is properly qualified, or that such bidder misrepresented material facts in the bid documents.

**DISQUALIFICATION OF BIDDERS**

More than one proposal from an individual, firm, partnership, corporation, or an association under the same or different names will not be considered. Reasonable grounds for believing that any Bidder is interested in more than one proposal for the work contemplated will cause the rejection of all proposals in which such Bidder is interested. Any or all proposals in which such Bidder is interested will be rejected if there is reason for believing that collusion exists among the Bidders and all participants in such collusion will not be considered in future proposals for the same work. Proposals in which the prices are obviously unbalanced may be rejected. No Contract will be awarded except to competent Bidders capable of performing the class of work contemplated.

**DELIVERY**

Inasmuch as this work concerns a needed public improvement, the provisions of this bid relating to the time of delivery, performance and completion of the work are of the essence of this bid. Accordingly, the successful bidder shall commence work **upon receipt of the signed Purchase Order** unless the Town shall authorize or direct a further delay.

Time of delivery shall be stated as the number of calendar days following receipt of the Purchase Order by the Bidder to receipt of the goods or services by the Town of Watertown.

Prices quoted must include delivery to the Town of Watertown as specified on the Purchase Order. No charges will be allowed for parking, crating, freight, express or cartage unless specifically stated and included in this bid.

Time of delivery may be considered in the award.

**PAYMENT**

The Town, after inspection and acceptance of workmanship, and in consideration of the faithful performance by the Bidder of all and singular his covenants, promises, and agreements contained herein, agrees to pay the Bidder for the full completion by him of the work embraced in this Contract, within (30) Thirty Days of the receipt of the final invoice. When subcontractors or suppliers are utilized, the successful Bidder for this project shall be required to submit a Mechanics Lien Waiver, acceptable to the Town, with each progress payment and/or at time of final payment prior to any payment being made.

Time, in connection with any discount offered, will be computed from the date of delivery to the Town or from the date a correct invoice is received by the Town's Finance Department, if the latter date is later than the date of delivery.

Prices will be considered as **NET**, if no cash or payment discount is shown.
The successful bidder shall submit invoices to the following address:
   Town of Watertown
   Public Works/Engineering Department
   61 Echo Lake Road
   Watertown, CT 06795

IT IS UNDERSTOOD AND AGREED THAT SHOULD A BID BE ACCEPTED, IT WILL AUTOMATICALLY BECOME THE CONTRACT OR AN ADDENDUM TO ANY CONTRACT AGREED UPON.

Notification of the bid award will be made by issuance of a purchase order. Bidders are to list their bids on the appropriate attached sheets. Bidders may attach a letter of explanation. A clear notification should be made on the standard bid sheets at the appropriate point of explanation that there is a letter of explanation attached. All bids must be NET prices.

The successful bidder shall submit an itemized invoice to the Town of Watertown for the work as described herein.

The bidder shall be required to submit a Mechanics Lien Waiver, acceptable to the Town of Watertown, with each progress payment and at time of final payment prior to any payment being made.

At the time of award the successful bidder shall be required to supply the Town of Watertown a Certificate of Good Standing, certifying that the corporation is in fact a valid corporation and presently licensed to conduct business in the State of Connecticut.

SALES TAX
Certain materials and supplies incorporated in the work of this project are exempt from Connecticut Sales Tax. The Bidder shall familiarize himself with current regulations of the State Tax Department. The tax on materials or supplies exempted by such regulations shall not be included as part of the bid. The Town will furnish the successful Bidder sales tax exemption authorization.

CARE AND PROTECTION OF PROPERTY
The Bidder shall take particular care to avoid damages to all private and public property and to private or public improvements within the Town's right of way. He shall make good any damages to the satisfaction of the Town. There shall be no additional compensation for the repair or restoration of private or public property improvements.

COMPLIANCE WITH FEDERAL, STATE AND LOCAL CODES
The Bidder shall be responsible for full compliance with any Federal, State and/or Local codes, laws, regulations and standards, as applicable.

AWARD
The Town of Watertown reserves the right to accept or reject any bid to best serve its interests, or to hold the bids for sixty (60) days before decision.

The Town reserves the right to reject any and all bids (or any part thereof), to waive defects in proposals,
or to accept any proposal deemed to be in its best interest.

Exceptions will be considered to the specification provided, providing they are listed and fully explained on a separate page entitled "EXCEPTIONS TO SPECIFICATIONS"

Each exception will be considered as to its degree of impact and total effect on the bid. The purchaser shall determine which (if any taken) exceptions are acceptable, and this determination shall be final.

The Town of Watertown reserves the right:
- To award bids received on the basis of individual items, or groups of items, or on the entire list of items.
- To reject any or all bids, or any part thereof.
- To waive any informality in the bids.
- The Town of Watertown reserves the right to take into account the residency of bidders within the Town of Watertown and/or the location of the bidders business within the Town of Watertown in awarding this bid.
- To accept the bid that is in the best interest of the Town of Watertown. The Purchasing Agent's decision shall be final.

INSURANCE
A. General:
The Bidder shall be responsible for maintaining insurance coverage in force for the life of the contract of the kinds and adequate amounts to secure all of the Bidder’s obligations under the contract with an insurance company with an AM Best Rating of A - VII or better licensed to write such insurance in Connecticut and acceptable to the Town of Watertown.

The insurer shall provide the Town of Watertown with Certificates of Insurance signed by an authorized representative of the insurance company(ies) prior to the performance of this contract describing the coverage and providing that the insurer shall give the Town of Watertown written notice at least thirty (30) days in advance of any termination, expiration, or any and all change in coverage.

Such insurance or renewals or replacements thereof shall remain in force during the Bidder’s responsibility under this agreement.

The Bidder at his own cost and expense shall procure and maintain all insurance required and shall name the Town of Watertown, its employees, departments, boards, committees and commissions, as an additional insured on all contracts except Worker’s Compensation and Professional Errors & Omissions coverage.

In order to facilitate this requirement for insurance, it is recommended that the bidder forward a copy of this exhibit to the bidder’s insurance representative(s).

B. Specific Requirements:
(1) Workers’ Compensation Insurance
The Bidder shall provide Workers’ Compensation Insurance required by law and the Employer’s Liability Insurance for at least the amounts of liability for Bodily Injury by accident of $100,000
each accident; Bodily Injury by Disease each employee of $100,000; Bodily Injury by Disease, policy limit of $500,000.

(2) **Commercial General Liability Insurance**
The Bidder shall carry Commercial General Liability policy (Insurance Services Office Incorporated Form CG-0001 or equivalent). A per occurrence limit of $1,000,000 is required. The Aggregate Limit will be not less than $1,000,000.

(3) **Business Automobile Liability Insurance**
The Bidder shall carry Business Automobile Liability Insurance. (Insurance Services Office Incorporated Form CA-00001 or equivalent). A per occurrence limit of $1,000,000 is required. “Any Auto” (symbol 1 or equivalent) is required.

C. **Hold Harmless & Subcontractor’s Requirements:**
The Bidder shall require the same insurance that it is required to carry by the Town of Watertown to be carried by any subcontractors and independent contractors hired by the Bidder and to obtain Certificates of Insurance before subcontractors and independent contractors are permitted to begin work.

The Bidder shall require that the Town of Watertown, its employees, departments, boards, committees and commissions, be named as Additional Insured on all subcontractor’s and independent contractor’s policies before they are permitted to begin work.

The Bidder and all subcontractors and independent contractors and their insurers shall waive all rights of subrogation against the Town of Watertown, and its officers, agents, servants and employees for losses arising from the work performed by each on this contract.

The Bidder assumes and agrees to hold harmless, indemnify, protect and defend the Town of Watertown against any and all liability for injuries and damages to Bidder and to Bidder’s employees, agents, subcontractors and guests, third parties or otherwise incident to or resulting from any and all operations performed by a contractor under any terms of this contract.

D. **Other Data:**
NOTE 1: If Bidder is only a vender shipping goods via Common Carrier only, General Liability is required.
NOTE 2: If Bidder is a Professional, Errors & Omission coverage will be required.
NOTE 3: The Town reserves the right to amend amounts of coverage required and the types of coverage provided based on work or service to be performed.

**PERMITS**
When required all licenses and permits for complying with any applicable Federal, State, and Municipal laws, codes, regulations in connection with the prosecution of the work shall be obtained by the Bidder, at no additional cost to the Town.

**NONDISCRIMINATION IN EMPLOYMENT**
The successful bidder shall agree and warrant that, in the performance of this contract, he will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color,
sex, religion, or national origin in any manner prohibited by State, Federal, County, or Municipal law. A certification of Nonsegregated Facilities and a Certification Regarding Equal Employment Opportunity shall be considered a part of this contract.

MECHANICS LIEN WAIVERS

The successful Bidder shall be required to submit a Mechanics Lien Waiver, acceptable to the Town of Watertown, with each progress payment, and/or at time of final payment, prior to any payment made.

MANDATORY PRE-BID CONSTRUCTION MEETING

All bidders are invited to attend a Mandatory Pre-Bid meeting for the purpose of viewing the proposed scope of services required, and obtaining information relating to the proposed project. The meeting is scheduled for **11:00 a.m., Monday, May 4th, 2020** at the job site. No additional viewing appointments will be scheduled. Bidders are required to attend this scheduled Pre-Bid Meeting.

For further technical or administrative information contact Jason Warner, Purchasing Agent at (860) 945-5260 or via email at warner@watertownct.org.
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INTRODUCTION TO THE SPECIAL PROVISIONS

The following Special Provisions shall apply to the various items of work which constitute the construction contemplated under this Contract.

Within the Special Provisions of this Contract, the following definitions shall apply:

1. **Standard Specifications** shall mean the State of Connecticut, Department of Transportation, Bureau of Highways, "Standard Specifications for Roads, Bridges, Facilities and Incidental Construction, Form 817, dated 2016 and its latest supplements." It should be noted that portions of the Standard Specifications that are referred to in this Contract's Specifications may be supplemented, revised and/or amended per these Special Provisions. These Specifications shall govern as modified. Within the referred to portions of the Standard Specifications wherein the following terms are used, they shall mean respectively:

   - **Engineer, State, Department, Commissioner**
   - **Inspector**
   - **Laboratory**


3. **Items**: Items are generally numbered consistent with Connecticut Department of Transportation nomenclature. Please note that these Special Provisions may be particular to this contract and differ from the Standard Specifications. Special Provisions are included on the following pages. Sections or Articles referred to with a number refer to the State of Connecticut Department of Transportation, Bureau of Highways, Standard Specifications Sections or Articles.
4. **Regulatory Agency(ies):** Regulatory Agency(ies) shall be defined as the governing body or authority having jurisdiction over or responsibility for a particular activity within the scope of this Contract. They may be as specifically defined within the Special Conditions; otherwise the Contractor shall be responsible to determine same in the local area of the Contract.

5. **"These Specifications"** where used in the text of the Standard Specifications or Special Provision items shall mean the Standard Specifications or Special Provisions of this Contract.

6. **Bid Proposal Items:** Payment will only be made for items in the Bid Proposal. Other items may be included in the Standard Specifications but payment for items not listed in the Bid Proposal will be included in the cost of other items of work. Bid Proposal items shall have similar designations as the similar item in the Standard Specifications.

7. The items included in this contract shall conform to the CTDOT Form 817 with the exception of the following items which shall conform to the CTDOT “Standard Specifications for Roads, Bridges and Incidental Construction, Form 816, dated 2004” and supplements:

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NOTICE TO CONTRACTOR – SALVAGE

The Contractor shall salvage the items listed below:

Roadway Delineators

Items salvaged from roadways owned and maintained by the Town of Watertown shall be delivered by the Contractor to the Town’s Public Works Garage or at a location designated by the director of public works. The contact person for this facility is Roy E. Cavanaugh, P.E., Director of Public Works (860-945-5240).

The Contractor shall notify the contacts noted above at least 48 hours prior to delivery. Deliveries shall be made between the hours of 8:00 a.m. and 3:30 p.m. on Monday through Friday, holidays excluded.

NOTICE TO CONTRACTOR – WORK ON ADJACENT PROJECTS

The Contractor is responsible for coordinating with the Town Engineer and utility companies for any projects being constructed concurrently within the area of this project. The Contractor is responsible for coordinating with the Town Engineer to minimize disruption to traffic operations within the area. Detour operations on projects will require approval by the Town Engineer.

NOTICE TO CONTRACTOR – PROCUREMENT OF MATERIALS

Upon award, the Contractor shall proceed with shop drawings, working drawings, procurement of materials, and all other submittals required to complete the work in accordance with the Contract Documents. No material shall be procured or delivered to the site prior to approval.

NOTICE TO CONTRACTOR – PROTECTION OF EXISTING UTILITIES

Existing utilities shall be protected and maintained during construction except as specifically stated herein and/or noted on the plans and as coordinated with the utilities. The Contractor shall verify the location of underground, structure mounted, and overhead utilities. Construction work within the vicinity of utilities shall be performed in accordance with current safety regulations. The Contractor shall notify "Call Before You Dig", by dialing 811 or going to www.cbyd.com for the location of public utility prior to the beginning of any excavation, in accordance with State regulations.

Coordination with public and private utility custodians/owners will be required at the onset of construction. The Contractor will be required to reset any affected all manhole covers and utility valve/gate boxes encountered within the limits of the work as required. There will be no separate payment for this work.
Representatives of the various utility companies shall be provided access to the work, by the Contractor.

Contractors are cautioned that it is their responsibility to verify locations, conditions, and field dimensions of all existing features, as actual conditions may differ from the information shown on the plans or contained elsewhere in the specifications.

The Contractor shall notify the Engineer prior to the start of work and shall be responsible for all coordination with the Town. The Contractor shall allow the Engineer complete access to the work.

The Contractor shall be liable for all damages or claims received or sustained by any persons, corporations or property in consequence of damage to the existing utilities, their appurtenances, or other facilities caused directly or indirectly by the operations of the Contractor.

Any damage to any existing private and public utility, as a result of the Contractor's operations, shall be repaired to the utilities and Engineer's satisfaction at no cost to the Town or the Utilities, including all materials, labor, etc., required to complete the repairs.

The Contractor's attention is directed to the requirements of Section 1.07.13, Form 817 – "Contractor's Responsibilities for Adjacent Property Facilities and Services".

Prior to opening an excavation, effort shall be made to determine whether underground installations, i.e., water, sanitary, gas, electric ducts, communication ducts, etc., will be encountered and, if so, where such underground installations are located. When the excavation approaches the estimated location of such an installation, the exact location shall be determined by careful probing or hand digging, and when it is uncovered, proper supports shall be provided for the existing installation. Utility companies shall be contacted and advised of proposed work prior to the start of actual excavation, as noted above.

**Overhead Utilities**

Overhead electric, telephone and cable services span the project area. The contractor is hereby warned that overhead utilities may conflict with construction activities. The contractor shall maintain sufficient clearance from overhead wires in accordance with applicable laws and regulations. The contractor shall establish contact with the utilities prior to starting the work and shall maintain regular communication with the utilities throughout the course of the work. The contractor will be responsible for coordination associated with temporary support and/or relocation of existing utilities as may be necessary to accomplish the work. A utility coordination meeting was conducted on-site during the design phase. The electric company indicated the power lines can be raised temporarily to provide additional overhead clearance, whether on a day basis or for the duration of construction. Other utilities may be raised, temporarily, if necessary. It is the responsibility of the contractor to work with the utilities to determine means and methods.
Buried Utility Services

The contractor shall note that a number of properties within the limits of work are served by buried electric and communications services from utility pole to house. The contractor shall confirm locations of buried services prior to the start of work and shall avoid damage to services during construction.

NOTICE TO CONTRACTOR - DUST CONTROL

It shall be the Contractor's responsibility to keep the existing roadway clean and provide adequate dust control by whatever means are necessary, to the satisfaction of the Town and the Engineer. This shall include any sweeping required either by mechanical means or hand sweeping if the use of a mechanical sweeper is not feasible. The expense required for dust control including water, calcium chloride, and sweeping shall be included in the cost of Maintenance and Protection of Traffic.

NOTICE TO CONTRACTOR – VERIFICATION OF PLAN DIMENSIONS AND FIELD MEASUREMENTS

The Contractor is responsible for verifying all dimensions before any work is begun. Dimensions of the existing structures shown on the plans are for general reference only; they are not guaranteed. The Contractor shall take all field measurements necessary to assure proper fit of the finished work and shall assume full responsibility for their accuracy. When shop drawings and/or working drawings based on field measurements are submitted for approval and/or review, the field measurements shall also be submitted for reference by the reviewer.

In the field, the Contractor shall examine and verify all existing and given conditions and dimensions with those shown on the plans. If field conditions and dimensions differ from those shown on the plans, the Contractor shall use the field conditions and dimensions and make the appropriate changes to those shown on the plans as approved by the Engineer. All field conditions and dimensions shall be so noted on the drawings submitted for approval.

There shall be no claim made against the Town by the Contractor for work pertaining to modifications required by any difference between actual field conditions and those shown by the details and dimensions on the contract plans. The Contractor will be paid at the unit price bid for the actual quantities of materials used or for the work performed, as indicated by the various items in the contract.

NOTICE TO CONTRACTOR – AS-BUILT PLANS

A complete set of prints shall be maintained at the site at all times and the Contractor shall be responsible for having clearly, neatly, accurately and promptly recorded thereon, as the work is performed, the as-built record of the contract work. Principal dimensions, elevations and such other data as required shall be recorded for all work.
The marked-up prints will be inspected weekly by the Town and shall be corrected immediately if found either inaccurate or incomplete.

At the completion of the project, complete as-built maps showing all improvements shall be prepared by the Contractor, and signed/dated plans shall be presented on reproducible 3 mil mylar or high quality paper and shall be submitted to the Owner for final inspection and comment. At a minimum, the plans shall show the following:

1. North Arrow.
2. Bench Mark – Indicate elevation, datum used, with exact location and description noted.
3. Location, size and material of all underground drainage installations and utilities encountered. Location of manholes, catch basins, end walls, wyes, tees, risers, etc. shall be noted.
4. Scale shall be noted.
5. Date construction was completed (month and year only), and date of finished As-Built map shall be indicated.
6. Revisions shall be noted and redated.
7. As-Built pipe grade in percent shall be shown as well as invert elevations at every structure.

The Contractor shall correct, amplify and do all other work as may be required by the Owner to complete the drawings in a manner satisfactory to the Owner.

This work shall be performed on a continuing basis and shall be included in the general cost of the work. No separate payment will be made for As-Built Drawings. This information will be used by the Municipality and may serve as public information. Final payment will not be made until as-built drawings are furnished and deemed satisfactory by the Engineer.

NOTICE TO CONTRACTOR – MATERIALS CERTIFICATES AND TESTING

This item shall conform to Sections 1.06, Form 817, as amended. The Contractor shall furnish certificates signed and dated by a person in responsible charge of the source of materials furnished that the materials meet the specification requirements contained herein. The Engineer reserves the right to have samples tested independently. If the samples fail to meet the specification requirements, the entire load will be rejected. If the same supplier certifies more than once that a material meets the specification and the samples fail an independent test, then the supplier will be rejected from furnishing any further materials on the project.

The Town is responsible for scheduling all required material testing and paying the cost of the same. There will be no separate payment for materials certificates and tests as specified herein.
Materials Certificates:

For pipe, cement, steel reinforcement, and similar materials which are normally tested in the shop by the manufacturer, the Contractor shall furnish the Engineer certified records of physical, chemical, and other pertinent tests, and/or certified statements from the manufacturer that the materials have been manufactured and tested in conformity with the specifications. Where such a small quantity of material is required as to make physical or chemical analyses impractical, a certificate from the manufacturer stating the results of such tests or analyses of similar material which were concurrently produced, may at the discretion of the Engineer, be considered as the basis for the acceptance of such materials.

Materials Testing:

If the Engineer so requires, either prior to beginning or during the progress of the work, the Contractor shall submit samples of materials for such special tests and analyses as may be necessary to demonstrate that they conform to the specifications. The Town will pay for all testing laboratories to perform such tests and analyses. Such samples shall be furnished, taken, stored, packed, and shipped as directed, at the expense of the Contractor. The Contractor shall pay for all tests, etc. relating to the material used on the work, in accordance with the provisions of the contract item. The Contractor shall submit data and samples, or place his orders, sufficiently early to permit consideration, inspection, testing and approval before the materials and equipment are necessary for incorporation in the work. Any delays resulting from his failure so to do shall not be used as a basis of a claim against the Town or the Engineer. If the Engineer orders sampling and analyses or tests of materials which are usually accepted on certification of the manufacturer but which appear defective or not conforming to the requirements of the specifications, the Town will bear the costs of tests and analyses if the material is found to be sound and conforming to the specifications; if found defective or not conforming to the specifications, the Contractor shall bear all of the cost.

NOTICE TO CONTRACTOR – SUBMITTALS FOR IMPORTED AGGREGATES

In accordance with the requirements in these special provisions and the CT DOT Form 817, specifically the Materials Section, the contractor is hereby notified of the requirement to provide submittals which include, but may not be limited to, tests on the gradation, abrasion and soundness of the aggregate materials proposed for use on this project. The tests must be current and based on a specific source location/pile. No material shall be imported until the Engineer issues a written approval. The Contractor shall also provide testing and documentation of the imported and stockpiled material to confirm consistency with the approved submittals and compliance with these specifications.

NOTICE TO CONTRACTOR – EMERGENCY VEHICLE ACCESS

The Contractor is hereby notified that emergency vehicle access through the project during construction shall be maintained at all times and shall be considered a priority in terms of public
safety. The Town will not consider delay or other claims associated with temporary work stoppage due to emergency responses.

Contact information for the Watertown Volunteer Fire Department and Police Department shall be:

Watertown Volunteer Fire Department  
Chief David Bromley  
935 Main Street  
Watertown, CT 06795  
Phone: 860-945-5220  
Emergency Calls: 911

Watertown Police Department  
Chief John Gavallas  
195 French Street  
Watertown, CT 06795  
Phone: 860-945-5200  
Emergency Calls: 911

**NOTICE TO CONTRACTOR – STAGING AND LAYDOWN AREAS**

The Contractor must submit to the Engineer for review and approval any areas he intends to use for staging and laydown. In addition to review and approval by the Engineer, potential sites to be obtained by the Contractor from private owners must be submitted to the Town of Watertown for approval. The Contractor must submit verification of approval by the property owner to the Engineer seven (7) days prior to use.

The Contractor must only use ONE staging/laydown area, as approved by the Town. The Contractor will be ordered to immediately remove any materials being stored outside the Town approved staging/laydown area.

**NOTICE TO CONTRACTOR – BEST MANAGEMENT PRACTICES FOR THE PROTECTION OF THE ENVIRONMENT**

The Contractor's operations must be performed in a manner such that impacts to the environment, particularly wetland areas, are limited in accordance with the State of Connecticut Department of Energy and Environmental Protection (DEEP) and local regulatory agencies. The following must be adhered to:

1. No construction shall proceed until proper sedimentation and erosion control methods have been installed as the sequence of construction necessitates.

2. No equipment, materials, or machinery shall be stored, cleaned, or repaired within fifty (50) feet of any wetland or watercourse.
3. No objectionable materials resulting from any clearing activity shall be disposed of in any wetland or watercourse. This includes but is not limited to: stumps, tree roots, matted roots, wood chips, and other debris.

4. Fording of streams with equipment shall be prohibited unless specified elsewhere. DEEP approval will be required for any haul road or temporary structure placed in wetlands or watercourses other than those shown on the plans.

5. No fill or material shall be deposited in surrounding wetlands or watercourses unless shown on the plans.

6. Where dewatering is necessary, the pump shall not discharge directly into the wetland or watercourse. Proper methods and devices shall be utilized, such as pumping the water into a temporary sedimentation basin or sediment chamber, providing surge protection at the inlet and the outlet of pumps, or floating the intake of the pump, or other method to minimize and retain the suspended solids. If the pumping operation is causing turbidity problems, said operation shall cease until such time as feasible means of controlling turbidity are determined and implemented.

7. Cofferdams, and other measures such as bank stabilization, shall be of minimal size. In all cases, such installations shall not cause flooding or increase scouring potential.

8. Work within and adjacent to watercourses shall be conducted during periods of low flow (or low tide), whenever possible. The applicant shall remain aware of flow conditions during the conduct of such work, and shall cause such activity to cease should flow conditions threaten to cause excessive erosion, siltation, or turbidity. During storms, every effort shall be taken to secure the work site.

9. All temporary fill, such as that used for permitted access roads and/or cofferdams, shall be properly stabilized during use to prevent erosion, and, when no longer needed, must be disposed of at an upland site, and suitably contained to prevent turbid runoff from re-entering a wetland or watercourse. All areas affected by temporary fills must be restored to their original contours, and revegetated with suitable vegetation. The area/extent of temporary fill or excavation shall be minimized to that area necessary to perform the required work.

10. Dumping of oil or other deleterious materials on the ground is forbidden. The applicant shall provide a means of catching, retaining, and properly disposing of drained oil, removed oil filters, or other deleterious material. Hazardous Materials absorbent pads shall be stored on-site throughout the duration of the project. All oil spills shall be reported immediately to the DEEP/Hazardous Materials office at 860-424-3338. Failure to do so may result in the imposition of a fine under Section 22a-450 of the Connecticut General Statutes.
11. Every precaution shall be used while working in the vicinity of a waterway to prevent and minimize degradations of the existing water quality. All activities shall conform and be at all times consistent with applicable water quality standards and management practices of the Federal Clean Water Act (1972), Connecticut's Water Quality Standards and other applicable State Laws, and as defined in Form 817, Section 1.10.03 and Section 2.10.

12. All work shall be performed in accordance with local inland wetland and watercourses regulations suggested under the permit granted. It is the responsibility of the Contractor to obtain a copy of the permit from the Town of Watertown prior to the start of construction.

NOTICE TO CONTRACTOR - PERMITS/PERMIT APPLICATIONS

The Contractor is hereby notified that all permits and permit applications contained herein shall be made a part of this Contract, and that the Contractor shall be bound to comply with all requirements of such permits and permit applications as though the Contractor were the permittee. If at the time the permit is received its contents differ from that which is outlined in the application, the permit shall govern. The requirements and conditions set forth in the permit and permit applications shall be binding on the Contractor just as any other specification would be. In the case of a conflict between a provision of the environmental permit or permit application and another provision in the Contract Documents, the former shall govern.

NOTICE TO CONTRACTOR - ALL-INCLUSIVE DRAINAGE

ADDED SECTIONS:

2.86 – DRAINAGE TRENCH EXCAVATION
   ROCK IN DRAINAGE TRENCH EXCAVATION
5.86 – CATCH BASINS, MANHOLLES AND DROP INLETS
6.86 – DRAINAGE PIPES
   DRAINAGE PIPE ENDS

This Contract contains the above-noted Special Provisions for all-inclusive drainage, developed to replace the following Sections in their entireties:
- Section 5.07 – Catch Basins, Manholes and Drop Inlets
- Section 6.51 – Culverts
- Section 6.52 – Culvert Ends

The Section 5.86 and 6.86 items include excavation and bedding material in the drainage structure, pipe and pipe end unit prices.

Section 2.05 Trench Excavation may be included for miscellaneous trenching, where necessary, but will not be used with all-inclusive drainage items.
Other Standard Specifications, Supplemental Specifications or Special Provisions may contain references to Articles or Subarticles from previous versions of Sections 5.07, 6.51 and 6.52 which are no longer valid.

The following Standard Specifications Sections or Supplements contain references to Articles or Subarticles from Section 2.05 which shall remain in effect:

- Section 2.06 – *Ditch Excavation*
- Section 5.06 – *Retaining Walls, Endwalls and Steps*
- Section 7.51 – *Underdrains and Outlets*
- Section 10.01 – *Trenching and Backfilling*

‘Rock in Drainage Trench Excavation’ is now defined in Section 2.86. ‘Rock in Trench Excavation’ will remain in Section 2.05 and may be used with trenching not associated with all-inclusive drainage items.

Any references to Articles beginning with “5.07,” “6.51,” or “6.52” shall refer to the pertinent topic or materials in the new Special Provisions contained herein.
SECTION 1.07 - LEGAL RELATIONS AND RESPONSIBILITIES

1.07.13 – Contractor's Responsibility for Adjacent Property and Services: is supplemented with the following:

The Contractor's attention is directed to the fact that there are overhead utilities (including utility poles, pole guys and wires) that exist in the immediate vicinity of the project.

The Contractor shall be liable for all damages and claims received or sustained by any persons, corporations or property in consequence of damage to the existing utilities, their appurtenances, or other facilities caused directly or indirectly by the operations of the Contractor.

The following companies and their representatives shall be contacted by the Contractor to coordinate the protection of their utilities on the construction site two (2) weeks prior to the start of any work on the project involving their utilities:

Mr. Raymond Puzemis
Engineering
Frontier Communications of CT
1441 North Colony Road
Meriden, CT 06450
(203) 238-5657

Mr. Chris Bogucki
Superintendent
City of Waterbury Bureau of Water
21 East Aurora Street
Waterbury, CT 06708
(203) 574-8251

Mr. Barry C. Lashley, Msc.
Supervisor – Construction Engineering
Eversource Energy – Electrical Dist.
135 New Road, Madison AWC
Madison, Connecticut 06443
(203) 245-5208

Mr. George Rebentisch
Construction Manager
Cablevision of Litchfield, Inc.
122 River Street
Bridgeport, CT 06604
(203) 696-4764

Mr. Vincent Caterino
Superintendent
Town of Watertown Water & Sewer Department
747 French Street
Oakville, CT 06779
(860) 945-5299

Mr. Michael Tanuis
Watertown Fire District
Superintendent
24 DeForest Street
Watertown, CT 06795
860) 274-6332
SECTION 1.07 - LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC

1.07.14 – Personal Liability of Representatives of the State: is amended as follows:

Replace the word "the Department " with "Engineer."

1.07.15 – No Waiver of Legal Rights: is amended as follows:

Replace the words "Commissioner" and "Department with "Town" throughout this Article.

1.07.17 – Unauthorized Use of Area(s) within Project Limits Prohibited: is amended as follows:

Replace the words "Commissioner" and "State" with "Town" throughout this Article.

Add the following new Subarticle:

1.07.19 – Personal Liability of Representatives of the Town

In carrying out any of the provisions of these specifications, or in exercising any power or authority granted to them by or within the scope of the Contract, the Engineer and his authorized representatives, including consultant engineering firms and their employees, shall be subject to no liability, either personally or as officials of the Town, it being understood that in all such matters they act solely as agents and representatives of the Town.
SECTION 4.06 - BITUMINOUS CONCRETE

Section 4.06 is being deleted in its entirety and replaced with the following:

4.06.01 —Description: Work under this section shall include the production, delivery and placement of a non-segregated, smooth and dense bituminous concrete mixture brought to proper grade and cross section. This section shall also include the method and construction of longitudinal joints. The Contractor shall furnish the Owner with a Quality Control Plan as required in Article 4.06.03.

Materials certificates must be submitted in accordance with CDOT Form 817. Compaction testing, as well as other required testing ordered by the Engineer, shall be performed in accordance with CDOT Form 817.

The terms listed below as used in this specification are defined as:

Bituminous Concrete: A concrete material that uses a bituminous material (typically asphalt) as the binding agent and stone and sand as the principal aggregate components. Bituminous concrete may also contain any of a number of additives engineered to modify specific properties and/or behavior of the concrete material. For the purposes of this Specification, references to bituminous concrete apply to all of its sub-categories.

<table>
<thead>
<tr>
<th>Official Mix Designation Designation</th>
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<tbody>
<tr>
<td>Bituminous Concrete Class 1</td>
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<td>Bituminous Concrete Class 2</td>
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<tr>
<td>Bituminous Concrete Class 3</td>
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Course: A lift or multiple lifts comprised of the same bituminous concrete mixture placed as part of the pavement structure.

Density Lot: All material placed in a single lift and as defined in Article 4.06.03.

Disintegration: Wearing away or fragmentation of the pavement. Disintegration will be evident in the following forms: Polishing, weathering-oxidizing, scaling, spalling, raveling, potholes or loss of material.

Lift: An application of a bituminous concrete mixture placed and compacted to a specified thickness in a single paver pass.

Marshall: A bituminous concrete mix design used in mixtures designated as "Bituminous Concrete Class ( )."
Production Lot: All material placed per day during a continuous daily paving operation. Quality Assurance (QA): All those planned and systematic actions necessary to provide confidence that a product or facility will perform as designed.
**Quality Control (QC):** The sum total of activities performed by the vendor (Producer, Manufacturer, and Contractor) to ensure that a product meets contract specification requirements.

**Segregation:** A non-uniform distribution of a bituminous concrete mixture in terms of volumetrics, gradation or temperature.

**4.06.02 — Materials:** All materials shall conform to the requirements of Section M.04.

1. **Materials Supply:** The bituminous concrete mixture must be from one source of supply and originate from one Plant unless authorized by the Owner. The bituminous concrete mixture shall be produced at an approved Connecticut DOT Plant. The Contractor shall provide proof of current DOT plant approval status. Bituminous Concrete plant QC plan requirements are defined in Section M.04.

**4.06.03 — Construction Methods:**

1. **Material Documentation:** All vendors producing bituminous concrete must have their truck-weighing scales, storage scales, and mixing plant automated to provide a detailed ticket.

   Delivery tickets must include the following information:
   a. Project name printed on ticket.
   b. Name of producer, identification of plant, and specific storage bin (silo) if used.
   c. Date and time of day.
   d. Mixture Designation If RAP is used, the plant printouts shall include RAP dry weight, percentage and daily moisture content. Class 3 mixtures for machine-placed curbing must state "curb mix only".
   e. Net weight of mixture loaded into truck (When RAP is used, RAP moisture shall be excluded from mixture net weight).
   f. Gross weight (Either equal to the net weight plus the tare weight or the loaded scale weight).
   g. Tare weight of truck – Daily scale weight.
   h. Project number, purchase order number, name of Contractor (if Contractor other than Producer).
   i. Truck number for specific identification of truck.
   j. Individual aggregate, RAP, and virgin asphalt high/target/low weights shall be printed on batch plant tickets (For drum plants and silo loadings, the plant printouts shall be printed out at 5 minute intervals maintained by the vendor for a period of three years after the completion of the project).
   k. For every mixture designation the running daily total delivered and sequential load number.

   The net weight of mixture loaded into the truck must be equal to the cumulative measured weight of its components.
The Contractor must notify the Owner immediately if, during the production day, there is a malfunction of the weighing or recording system in the automated plant or truck-weighing scales. Manually written tickets containing all required information will be allowed for one hour, but for no longer, provided that each load is weighed on State-approved scales. The Owner reserves the right to monitor the plant's bituminous concrete mixture production for batching and/or weighting operation.

2. **Transportation of Mixture:** Trucks with loads of bituminous concrete being delivered to the projects must not exceed the statutory or permitted load limits referred to as gross vehicle weight (GVW).

The mixture shall be transported from the mixing plant in trucks that have previously been cleaned of all foreign material and that have no gaps through which mixture might inadvertently escape. The Contractor shall take care in loading trucks uniformly so that segregation is minimized. Loaded trucks shall be tightly covered with waterproof covers acceptable to the Owner. Mesh covers are prohibited. The front and rear of the cover must be fastened to minimize air infiltration. The Contractor shall assure that all trucks are in conformance with this specification. Trucks found not to be in conformance shall not be allowed to be loaded until re-inspected to the satisfaction of the Owner.

Truck body coating and cleaning agents must not have a deleterious effect on the transported mixture. The use of solvents or fuel oil, in any concentration, is strictly prohibited for the coating of the inside of truck bodies. When acceptable coating or agents are applied, truck bodies shall be raised immediately prior to loading to remove any excess agent in an environmentally acceptable manner.

3. **Paving Equipment:** The Contractor shall have the necessary paving and compaction equipment at the project site to perform the work. All equipment shall be in good working order and any equipment that is worn, defective or inadequate for performance of the work shall be repaired or replaced by the Contractor to the satisfaction of the Owner. During the paving operation, the use of solvents or fuel oil, in any concentration, is strictly prohibited as a release agent or cleaner on any paving equipment (i.e., rollers, pavers, transfer devices, hand tools, etc.).

Refueling of equipment is prohibited in any location on the paving project where fuel might come in contact with bituminous concrete mixtures already placed or to be placed. Solvents for use in cleaning mechanical equipment or hand tools shall be stored clear of areas paved or to be paved. Before any such equipment and tools are cleaned, they shall be moved off the paved or to be paved area; and they shall not be returned for use until after they have been allowed to dry.
**Pavers:** Each paver shall have a receiving hopper with sufficient capacity to provide for a uniform spreading operation and a distribution system that places the mix uniformly, without segregation. The paver shall be equipped with and use a vibratory screed system with heaters or burners. The screed system shall be capable of producing a finished surface of the required evenness and texture without tearing, shoving, or gouging the mixture. Pavers with extendible screed units as part of the system shall have auger extensions and tunnel extenders as necessary. Automatic screed controls for grade and slope shall be used at all times unless otherwise authorized by the Owner. The controls shall automatically adjust the screed to compensate for irregularities in the preceding course or existing base. The controls shall maintain the proper transverse slope and be readily adjustable, and shall operate from a fixed or moving reference such as a grade wire or floating beam.

**Rollers:** All rollers shall be self-propelled and designed for compaction of bituminous concrete. Roller types shall include steel-wheeled, pneumatic or a combination thereof and may be capable of operating in a static or dynamic mode. Rollers that operate in a dynamic mode shall have drums that use a vibratory or oscillatory system or combination of. The vibratory system achieves compaction through vertical amplitude forces. Rollers with this system shall be equipped with indicators that provide the operator with amplitude, frequency and speed settings/readouts to measure the impacts per foot during the compaction process. The oscillatory system achieves compaction through horizontal shear forces. Rollers with this system shall be equipped with frequency indicators. Rollers can operate in the dynamic mode using the oscillatory system on concrete structures such as bridges and catch basins if at the lowest frequency setting.

Pneumatic tire rollers shall be self-propelled and equipped with wide-tread compaction tires capable of exerting an average contact pressure from 60 to 90 pounds per square inch uniformly over the surface, adjusting ballast and tire inflation pressure as required. The Contractor shall furnish evidence regarding tire size; pressure and loading to confirm that the proper contact pressure is being developed and that the loading and contact pressure are uniform for all wheels.

4. **Seasonal Requirements:** All paving, including placement of temporary pavements, shall be divided into two seasons, In-Season and Extended Season. In-Season paving shall occur from May 1 – October 31, and Extended Season shall occur from November 1 - April 30. The following requirements shall apply unless otherwise authorized or directed by the Owner:

- Bituminous concrete mixes shall not be placed when the air or subbase temperature is below 40°F regardless of the season.

- The Contractor shall not schedule paving operations during the Extended Season without prior approval from the Owner. The Contractor shall also provide to the Owner an “Extended Season Paving Plan” as outlined below as part of the Extended Season approval process:
  
  o An “Extended Season Paving Plan” shall be submitted to the Owner a minimum of two (2) weeks prior to the Contractor’s anticipated paving operations and shall address minimum delivered mix temperature, maximum paver speed, enhanced
rolling patterns and the method to balance mixture delivery and placement operations. Extended Season paving shall not commence until the Owner has approved the "Extended Season Paving Plan".

- The final lift of bituminous concrete shall not be placed between November 1 and April 30. The Owner, at his discretion, may consider a request from the Contractor to allow placing the top course bituminous concrete if it is deemed to be in the best interest of the project.

- There will be no additional compensation in relation to when bituminous concrete is placed.

5. Transitions for Roadway Surface: Transitions shall be formed at any point on the roadway where the pavement surface deviates, vertically, from the uniform longitudinal profile as specified on the plans. Whether formed by milling or by bituminous concrete mixture, all transition lengths shall conform to the criteria below unless otherwise specified.

Permanent Transitions: A permanent transition is defined as any transition that remains as a permanent part of the work. All permanent transitions, leading and trailing ends shall meet the following length requirements:

a) Posted speed limit is greater than 35 MPH: 30 feet per inch of vertical change (thickness)
b) Posted speed limit is 35 MPH or less: 15 feet per inch of vertical change (thickness).
c) Bridge Overpass and underpass transition length will be 75 feet either
   (1) Before and after the bridge expansion joint, or
   (2) Before or after the parapet face of the overpass.

In areas where it is impractical to use the above described permanent transition lengths the use of a shorter permanent transition length may be permitted when approved by the Owner.

Temporary Transitions: A temporary transition is defined as a transition that does not remain a permanent part of the work. All temporary transitions shall meet the following length requirements:

a) Posted speed limit is greater than 35 MPH
   (1) Leading Transitions = 15 feet per inch of vertical change (thickness)
   (2) Trailing Transitions = 6 feet per inch of vertical change (thickness)
b) Posted speed limit is 35 MPH or less
   (1) Leading and Trailing = 4 feet per inch of vertical change (thickness)

Note: Any temporary transition to be in-place over the winter shutdown period, holidays, or during extended periods of inactivity (more than 7 calendar days) shall conform to the “Permanent Transition” requirements shown above and shall be approved by the Owner prior to implementation.

6. Spreading and Finishing of Mixture: Prior to the placement of the bituminous concrete, the underlying base course shall be brought to the plan grade and cross section within the allowable tolerance. Immediately before placing the mixture, the area to be surfaced shall be cleaned by sweeping or by other means acceptable to the Owner. The bituminous concrete mixture shall not
be placed whenever the surface is wet or frozen. The temperature of the bituminous concrete mixture at time of placement must be between 265°F to 325°F, except that the minimum temperature will be 290°F when the mixture is placed during the Extended Season.

The mix temperature may be verified by the Owner at the time and location of placement by means of a probe or infrared type of thermometer to confirm conformance with this specification.

**Placement**: The bituminous concrete mixture shall be placed and compacted to provide a smooth, dense surface with a uniform texture and no segregation at the specified thickness and dimensions indicated in the plans and specifications.

When unforeseen weather conditions prevent further placement of the mix, the Owner is not obligated to accept or place the bituminous concrete mixture that is in transit from the plant or already at the project site awaiting placement.

In advance of paving, traffic control requirements as stipulated under the relevant sections of the Contract Documents shall be set up daily, maintained throughout placement, and shall not be removed until all associated work including density testing is completed.

The Contractor shall inspect the newly placed pavement for defects in the mixture or placement before rolling is started. Any deviation from standard crown or sections shown on the plans, or nonconforming to adjacent existing conditions, shall be immediately remedied by placing additional mixture or removing surplus mixture prior to commencing compaction operations. Such defects shall be corrected to the satisfaction of the Owner.

Where it is impractical due to physical limitations to operate the paving equipment, the Owner may permit the use of other methods or equipment. Where hand spreading is permitted, the mixture shall be placed by means of suitable shovels and other tools, and in a uniformly loose layer at a thickness that will result in a completed pavement meeting the designed grade and elevation. Where hand spreading is permitted by the Owner, it shall not relieve the Contractor of his responsibility to comply with all compaction requirements. The Contractor shall use such equipment as may be necessary to ensure proper compaction has been attained in areas of hand spreading without damage to nearby or adjacent structures/amenities or completed work.

**Placement Tolerances**: Each lift of bituminous concrete placed at a uniform specified thickness shall meet the following requirements for thickness and area. Any pavement exceeding these limits shall be subject to removal and replacement. Lift tolerances will not relieve the Contractor from the responsibility of meeting the final designed grades and cross sections.
The Contractor shall provide copies of all bituminous concrete delivery slips to the Owner for each daily section of pavement placed to determine the theoretical thickness of the in place material as follows:

**Theoretical Thickness** = \( \frac{T}{A_a} \times 0.0575 \)

Where:
- \( T \) = Actual tons in place
- \( A_a \) = Actual area (SY)

Yield factor for calculation = 0.0575 Tons/ SY/ inch

**Thickness** - When the thickness of the lift of mixture is less than that shown on the plans beyond the tolerances shown in Table 4.06-3, the Contractor, shall remove the deficient section and replace it with the specified thickness of material of the same class and to the dimensions as specified in the Contract Documents at their own cost.

**TABLE 4.06-3 Thickness Tolerances**

<table>
<thead>
<tr>
<th>Mixture Designation</th>
<th>Lift Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class 4 and S1</td>
<td>+ ( \frac{3}{8} ) inch*</td>
</tr>
<tr>
<td>Class 1, 2 and 12</td>
<td>+ ( \frac{1}{4} ) inch*</td>
</tr>
</tbody>
</table>

*There is no negative lift tolerance, the minimum lift thickness shall be equal to the designed thickness indicated on plans.

When requested by the Owner, if quality or thickness is a disputed issue then, the Contractor, will provided pavement cores as another means to confirm the pavement thicknesses at no additional cost to the Owner. If the Contractor does not provide cores within 72 hours from the Owner request, then the Owner reserves the right to hire a third party to provide core samples to verify thickness. The cost of which will be deducted from the Contractor's progress payments and/or retainage.

**Longitudinal Joint Construction:** All joints shall be straight and true to adjacent improvements. During placement of multiple lifts of bituminous concrete, the longitudinal joint shall be constructed in such a manner that it is located at least 6 inches from the joint in the lift immediately below. The Contractor shall plan his daily paving operation so that each paving length is the full width of area being paved. No exposed longitudinal joint edges will be allowed unless authorized by the Owner. Prior to placing the completing pass (hot side), an application of tack coat must be applied to the exposed edge of the preceding paving pass of bituminous concrete regardless of time elapsed between paver passes. The in-place time allowance described in Sub article "Tack Coat Application" below does not apply to joint construction.

**Transverse Joints:** All transverse joints shall be formed by saw-cutting a sufficient distance back from the previous run, existing bituminous concrete pavement, or bituminous concrete driveways to expose the full thickness of the lift. Tack coat shall be applied on any cold joint immediately prior to additional bituminous concrete mixture placement.
Tack Coat Application: A thin uniform coating of tack coat shall be applied to the pavement immediately before overlaying and be allowed sufficient time to break (set). All surfaces in
contact with the bituminous concrete that have been in place longer than 3 calendar days shall have an application of tack coat. The tack coat shall be applied by a non-gravity pressurized spray system that results in uniform overlapping coverage at an application rate of 0.03 to 0.05 gallons per square yard for a non-milled surface and an application rate of 0.05 to 0.07 gallons per square yard for a milled surface. For areas where both milled and un-milled surfaces occur, the tack coat shall be an application rate of 0.03 to 0.05 gallons per square yard. The Owner must approve the equipment and the method of measurement prior to use. The material for tack coat shall not be heated in excess of 160°F and shall not be further diluted. Under no circumstances shall tack coat be applied to surfaces damp to the touch or over standing water. In the event of unforeseen weather conditions, the application of tack coat shall stop until the surface to receive tack coat is dry. The Owner is not obligated to accept any bituminous concrete mixture or tack coat that is placed on/in wet conditions.

**Tack Coat Application Rate Verification:** The Contractor shall provide daily tack coat delivery tickets to the Owner for verification of application rates.

Daily Delivery tickets must include the following information:

a. Project name printed on ticket.
b. Name and location of supplier,
c. Date and time of day.
d. Product type.
e. 1st Gross weight - the loaded scale weight before application of tack coat material.
f. 2nd Gross weight - the loaded scale weight upon completion of tack coat material application.
g. Tare weight of truck – Daily scale weight.
h. Project number, purchase order number, name of Contractor (if Contractor other than Producer).
j. Truck number for specific identification of truck.

**Compaction:** The Contractor shall compact the mixture to an average density between 92.0 and 97.0 percent. All roller marks shall be eliminated without displacement, shoving, cracking, or aggregate breakage.

The Contractor shall only operate rollers in the dynamic mode using the oscillatory system at the lowest frequency setting on concrete structures such as bridges and catch basins. The use of the vibratory system on concrete structures is prohibited. Rollers operating in the dynamic mode shall be shut off when reversing directions.

If the Owner determines that the use of compaction equipment in the dynamic vibratory mode may damage highway components, utilities, or adjacent property, the Contractor shall provide alternate compaction equipment. The Owner may allow the Contractor to operate rollers in the dynamic mode using the oscillatory system at the lowest frequency setting. These allowances will not relieve the Contractor from meeting pavement compaction requirements. Compaction testing, as well as other testing required by the Engineer, shall be performed in accordance with CT DOT Form 817.
Surface Requirements: The pavement surface of any lift shall meet the following requirements for smoothness and uniformity. Any irregularity of the surface exceeding these requirements shall be corrected by the Contractor at his expense:

a) Smoothness- Each lift of the surface course shall not vary more than ¼ inch from a Contractor-supplied 10 foot straightedge. For all other lifts of bituminous concrete, the tolerance shall be ⅜ inch. Such tolerance will apply to all paved areas regardless of placement methods, i.e. hand spreading.

b) Uniformity- The paved surface shall not exhibit segregation, rutting, cracking, disintegration, flushing or vary in composition as determined by the Owner.

7. Contractor Quality Control (QC) Requirements for Placement: The Contractor shall be responsible for maintaining adequate quality control procedures throughout the placement operations. Therefore, the Contractor must ensure that the materials, mixture and work provided by Subcontractors, Suppliers and Producers also meet contract specification requirements.

A Quality Control Plan (QCP) shall be submitted for any project with a proposed tonnage greater than 2,500 tons of Bituminous Concrete and/or when the paving operation is scheduled to occur during the Extended Season with prior approval from the Owner.

Quality Control Plan: When required, prior to placement, the Contractor shall submit a QCP to the Owner for approval. The QCP shall be submitted at the pre-construction meeting or a minimum 30 days prior to any production or paving. Work covered by the QCP shall not commence until the Owner’s comments have been incorporated into the QCP and approved. The QCP shall detail every aspect of the placement process and if required, include a separate section on Extended Season paving as described in Section 4. “Seasonal Requirements”. The QCP must address the actions, inspection, minimum frequency of testing/sampling and testing necessary to keep the production and placement operations in control, to determine when an operation has gone out of control, and to respond to correct the situation in a timely fashion. The QCP shall also include details on when and who will communicate with personnel at the bituminous concrete plant to determine when immediate changes to the production or placement processes are needed, and to implement the required changes.

Approval of the QCP does not relieve the Contractor of his responsibility to comply with the project specifications and in accordance with the Contract Documents.

Quality Control Inspection, Sampling and Testing: The Contractor shall perform all quality control sampling and testing, provide inspection, and exercise management control to ensure that bituminous concrete production and placement conforms to the requirements of these specifications.

a) Records of Inspection and Testing: For each day of placement, the Contractor shall document all test results and inspections on forms approved by the Owner. The document
shall be certified by the Quality Control Manager or his representative that the information in the document is accurate, and that all work complies with the requirements of the contract.

8. Density Testing of Bituminous Concrete: The Contractor shall monitor and confirm density utilizing a nuclear density gauge of all bituminous concrete placed daily regardless of the quantity. Testing shall be performed by a NETTCP certified HMA Paving Inspector from a certified independent CT testing laboratory. The minimum frequency of testing shall be 1 density test per 100 linear feet in each mat and joint. Additional readings shall be taken as directed by the engineer.

The Contractor shall submit complete laboratory certified test reports and accurate density inspection reports to the Owner within 48 hours following the daily paving operations. The documents shall be submitted in a manner acceptable to the Owner.

9. Corrective Work Procedures: Any portion of the completed pavement that does not meet the requirements of the Contract Documents shall be corrected at the expense of the Contractor. Any corrective courses placed as the final wearing surface shall not be less than 1½ inches in thickness after compaction.

If pavement placed by the Contractor does not meet the requirements of the Contract Documents, and the Owner requires its replacement or correction, the Contractor shall:

a) Propose a corrective procedure to the Owner for review and approval prior to any corrective work commencing. The proposal shall include:
   - Limits of pavement to be replaced or corrected, indicating stationing or other landmarks that are readily distinguishable.
   - Proposed work schedule.
   - Construction method and sequence of operations.
   - Methods of maintenance and protection of traffic.
   - Material sources.
   - Names and telephone numbers of supervising personnel.

In the event the Contractor proposes to perform corrective work during the “Extended Season”, the Contractor shall provide an “Extended Season Paving Plan” and adhere to all seasonal requirements within this specification.

b) Perform all corrective work in accordance with the Contract and the approved corrective procedure.

10. Protection of the Work: The Contractor shall protect all sections of the newly finished pavement from damage that may occur as a result of the Contractor’s operations for the duration of the Project. Prior to the Owner’s authorization to open the pavement to traffic, the Contractor is responsible for the protection of the pavement from all damage.
4.06.04 —Method of Measurement and Basis of Payment:

1. **Bituminous Concrete Class ( )**: The furnishing and placing of bituminous concrete will be measured and paid for per ton of "Bituminous Concrete, Class ( )" accepted by the Engineer and in accordance with this special provision and Section M.04.

- All costs associated with constructing longitudinal and transverse joints shall be included in this item. No separate payment shall be made.

2. **Transitions for Roadway Surface**: The installation of temporary and permanent transitions will not be measured for payment and shall be included in the Bituminous Concrete Class ( ) item. The installation and removal of a bond breaker, and the removal and disposal of any temporary transition formed by milling or with bituminous concrete pavement will not be measured for payment and shall be included in the Bituminous Concrete Class ( ) item.

3. **Cut Bituminous Concrete Pavement**: The quantity of cut bituminous concrete pavement will be measured and paid for in accordance with Article 2.02.04.

4. **Material for Tack Coat**: The quantity of tack coat will be measured and paid for by the number of gallons furnished and approved by the Engineer.

**Method of Measurement**:

a. **Container Method**: Material furnished in a container will be measured to the nearest ½ gallon. The volume will be determined by either measuring the volume in the original container by a method approved by the Engineer or using a separate graduated container capable of measuring the volume to the nearest ½ gallon. The container in which the material is furnished must include the description of material, including lot number or batch number and manufacturer or product source.

b. **Truck Method**: The Engineer will establish a weight per gallon of the bituminous material based on the specific gravity at 60ºF for the material furnished. The number of gallons furnished will be determined by weighing the material on scales furnished by and at the expense of the Contractor.
**Pay Item** | **Pay Unit**
--- | ---
Bituminous Concrete, Class ( ) | ton
Material for Tack Coat | gal.
Asphalt Adjustment Cost | est.

**NOTE**
The Owner may at any time during the course of the work perform QA testing that he deems necessary to assure conformance to this special provision and CDOT Form 817. Any deficiencies found through these actions shall be immediately corrected by the Contractor at no additional cost to the Owner. The cost associated with the re-testing of areas where corrective work was performed will be deducted from the Contractor's progress and/or retainage.

Any pavement deficiencies, corrective work and/or QC/QA issues need to be resolved prior to payment for the work under this section.
SECTION M.04 - BITUMINOUS CONCRETE

Section M.04 is being deleted in its entirety and replaced with the following:

M.04.01—Bituminous Concrete Materials and Facilities M.04.02—Mix Design and Job Mix Formula (JMF) M.04.03—Production Requirements

NOTE: This is not a Connecticut Department of Transportation (CDOT) project, so there will be no testing by CDOT for this project. All references regarding CDOT testing shall be deleted and replaced with the material producers and/or supplier’s requirements, specifications and procedures. Bituminous Concrete shall be tested and inspected as ordered by the Engineer, Owner or his representatives.

Only bituminous concrete material from CDOT approved producers and/or suppliers shall be used on this project.

M.04.01 —Bituminous Concrete Materials and Facilities: Each source of material, and facility or plant used to produce and test bituminous concrete must be qualified on an annual basis by the Engineer. Test Procedures and Specifications referenced herein are in accordance with the latest AASHTO and ASTM Standard Test Procedures and Specifications. Such references when noted with an (M) have been modified by the Engineer and are detailed in Table M.04.03-7.

The Contractor shall submit to the Engineer all sources of coarse aggregate, fine aggregate, mineral filler, PG binder, and if applicable any additives such as but not limited to anti-strip, warm mix, and polymer modifiers. The Contractor shall submit a Safety Data Sheet (SDS) for each grade of binder, and additive to be used on the Project. The Contractor shall not change any material sources without prior approval of the Engineer.

An adequate quantity of each size aggregate, mineral filler, bitumen, and additives, shall be maintained at the bituminous concrete plant site at all times while the plant is in operation to ensure that the plant can consistently produce bituminous concrete mixtures that meet the job mix formula (JMF) as specified in Article M.04.02. The quantity of such material shall be reviewed by the Engineer on an individual plant basis and is dependent upon the plant's daily production capacity. A total quantity of any material on site that amounts to less than one day’s production capacity may be cause for the job mix formula to be rejected.

1. Coarse Aggregate:
   a. Requirements: The coarse aggregate shall consist of clean, hard, tough, durable fragments of crushed stone or crushed gravel of uniform quality. Aggregates from multiple sources of supply must not be mixed or stored in the same stockpile.

   b. Basis of Approval: The request for approval of the source of supply shall include a washed sieve analysis in accordance with AASHTO T 27. The Gsa, Gsb, and Pwa shall be determined in accordance with AASHTO T 85. The coarse aggregate must not contain more than 1% crusher dust, sand, soft disintegrated pieces, mud, dirt, organic and other injurious materials. When tested for abrasion using AASHTO T 96, the aggregate
loss must not exceed 40%. When tested for soundness using AASHTO T 104 with a magnesium sulfate solution, the coarse aggregate must not have a loss exceeding 10% at the end of 5 cycles.

For all bituminous mixtures, materials shall also meet the coarse aggregate angularity criteria as specified in Tables M.04.02-2 thru M.04.02-4 for blended aggregates retained on the #4 sieve when tested according to ASTM D 5821. The amount of aggregate particles of the coarse aggregate blend retained on the #4 sieve that are flat and elongated shall be determined in accordance with ASTM D 4791 and shall not exceed 10% by weight when tested to a 5:1 ratio, as shown in Tables M.04.02-2 thru M.04.02-4.

2. Fine Aggregate:
   a. Requirements: The fine aggregate from each source quarry/pit deposit shall consist of clean, hard, tough, rough-surfaced and angular grains of natural sand; manufactured sand prepared from washed stone screenings; stone screenings, slag or gravel; or combinations thereof, after mechanical screening or manufactured by a process approved by the Engineer. The Contractor is prohibited from mixing two or more sources of fine aggregate on the ground for the purpose of feeding into a plant.

   All fine aggregate shall meet the listed criteria shown in items #1 thru #7 of Table M.04.01-1. Table M.04.01-1 indicates the quality tests and criteria required for all fine aggregate sources. Individually approved sources of supply shall not be mixed or stored in the same stockpile. The fine aggregates must be free from injurious amounts of clay, loam, and other deleterious materials.

<table>
<thead>
<tr>
<th>Item</th>
<th>Title</th>
<th>AASHTO Protocol(s)</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Grading</td>
<td>T 27 &amp; T 11</td>
<td>100% Passing 3/8 inch 95% Passing the #4 min.</td>
</tr>
<tr>
<td>2</td>
<td>Absorption</td>
<td>T 84</td>
<td>3% maximum</td>
</tr>
<tr>
<td>3</td>
<td>Plasticity limits</td>
<td>T 90</td>
<td>0 or not detectable</td>
</tr>
<tr>
<td>4</td>
<td>L.A. Wear</td>
<td>T 96</td>
<td>50% maximum (fine agg. particle size # 8 and above)</td>
</tr>
<tr>
<td>5</td>
<td>Soundness by Magnesium Sulfate</td>
<td>T 104</td>
<td>20% maximum @ 5 cycles</td>
</tr>
<tr>
<td>6</td>
<td>Clay Lumps and Friable Particles</td>
<td>T 112</td>
<td>3% maximum</td>
</tr>
<tr>
<td>7</td>
<td>Deleterious Material</td>
<td>As determined by the Engineer</td>
<td>Organic or inorganic calcite, hematite, shale, clay or clay lumps, friable materials, coal-lignite, shells, loam, mica, clinkers, or organic matter (wood, etc.). -Shall not contain more than 3% by mass of any individual listed constituent and not more than 5% by mass in total of all listed constituents.</td>
</tr>
<tr>
<td>8</td>
<td>Petrographic Analysis</td>
<td>ASTM C 295</td>
<td>Terms defined in Section M.04.01-2c.</td>
</tr>
</tbody>
</table>
b. **Basis of Approval:** A Quality Control Plan for Fine Aggregate (QCPFA) provided by the Contractor shall be submitted for review and approval for each new source documenting how conformance to Items 1 through 7 as shown in Table M.04.01-1 is monitored. The QCPFA must be resubmitted any time the process, location or manner of how the fine aggregate (FA) is manufactured changes, or as requested by the Engineer. The QCPFA must include the locations and manufacturing processing methods. The QCPFA for any source may be suspended by the Engineer due to the production of inconsistent material.

The Contractor shall submit all test results to the Engineer for review. The Contractor shall also include a washed sieve analysis in accordance with AASHTO T 27/T 11. Any fine aggregate component or final combined product shall have 100% passing the 3/8 inch sieve and a minimum of 95% passing the # 4. The Gsa, Gsb, and Pwa shall be determined in accordance with AASHTO T 84.

The Contractor will be notified by the Engineer if any qualified source of supply fails any portion of Table M.04.01-1. One retest will be allowed for the Contractor to make corrections and/or changes to the process. If, upon retest, the material does not meet the requirements of items 1-7, additional testing will be required in accordance with item 8.

The Contractor may provide a Petrographic analysis of the material performed by a third party acceptable to the Engineer at its’ own expense. The Contractor shall submit the results of the analysis with recommended changes to the manufacturing process to the Engineer. The Contractor shall submit fine aggregate samples for testing by the Engineer after the recommended changes have been made.

The Contractor may request the use of such fine aggregate on select project(s) for certain applications of bituminous concrete pavement. Such material will be monitored for a period no less than 48 months, at no cost to the State. Terms of any evaluation and suitable application will be determined by the Engineer.

3. **Mineral Filler:**
   a. **Requirements:** Mineral filler shall consist of finely divided mineral matter such as rock dust, including limestone dust, slag dust, hydrated lime, hydraulic cement, or other accepted mineral matter. At the time of use it shall be freely flowing and devoid of agglomerations. Mineral filler shall be introduced and controlled at all times during production in a manner acceptable to the Engineer.
   
   b. **Basis of Approval:** The request for approval of the source of supply shall include the location, manufacturing process, handling and storage methods for the material. Mineral filler shall conform to the requirements of AASHTO M 17.

4. **Performance Graded Asphalt Binder:**
   a. **General:**
      i. Liquid PG binders shall be uniformly mixed and blended and be free of contaminants such as fuel oils and other solvents. Binders shall be properly heated and stored to prevent damage or separation.
      ii. The blending at mixing plants of PG binder from different suppliers is strictly prohibited. Contractors who blend PG binders will be classified as a supplier and will
be required to certify the binder in accordance with AASHTO R 26(M). The binder shall meet the requirements of AASHTO M 332 and shall be graded or verified in accordance with AASHTO R 29. The Contractor shall submit a Certified Test Report and bill of lading representing each delivery in accordance with AASHTO R 26(M). The Certified Test Report must also indicate the binder specific gravity at 77°F; rotational viscosity at 275°F and 329°F and the mixing and compaction viscosity-temperature chart for each shipment.

iii. The Contractor shall submit the name(s) of personnel responsible for receipt, inspection, and record keeping of PG binder materials. Contractor plant personnel shall document specific storage tank(s) where binder will be transferred and stored until used, and provide binder samples to the Engineer upon request. The person(s) shall assure that each shipment (tanker truck) is accompanied by a statement certifying that the transport vehicle was inspected before loading and was found acceptable for the material shipped and that the binder will be free of contamination from any residual material, along with two (2) copies of the bill of lading.

iv. Basis of Approval: The request for approval of the source of supply shall list the location where the material will be manufactured, and the handling and storage methods, along with necessary certification in accordance with AASHTO R 26(M). Only suppliers/refineries that have an approved “Quality Control Plan for Performance Graded Binders” formatted in accordance with AASHTO R 26(M) will be allowed to supply PG binders to Department projects.

b. Neat Performance Grade (PG) Binder:
   i. PG binder shall be classified by the supplier as a “Neat” binder for each lot and be so labeled on each bill of lading. Neat PG binders shall be free from modification with: fillers, extenders, reinforcing agents, adhesion promoters, thermoplastic polymers, acid modification and other additives such as re-refined motor oil, and shall indicate such information on each bill of lading and certified test report.

   ii. The asphalt binder shall be PG 64S-22.

c. Modified Performance Grade (PG) Binder:
   Unless otherwise noted, the asphalt binder shall be Performance Grade PG 64E-22 asphalt modified solely with a Styrene-Butadiene-Styrene (SBS) polymer. The polymer modifier shall be added at either the refinery or terminal and delivered to the bituminous concrete production facility as homogenous blend. The stability of the modified binder shall be verified in accordance with ASTM D7173 using the Dynamic Shear Rheometer (DSR). The DSR G*/sin(δ) results from the top and bottom sections of the ASTM D7173 test shall not differ by more than 10%. The results of ASTM D7173 shall be included on the Certified Test Report. The binder shall meet the requirements of AASHTO M 332 (including Appendix X1) and AASHTO R 29.

d. Warm Mix Additive or Technology:
i. The warm mix additive or technology must be listed on the NEAUPG Qualified Warm Mix Asphalt (WMA) Technologies List at the time of bid, which may be accessed online at http://www.neaupg.uconn.edu/wma_info.html.

ii. The warm mix additive shall be blended with the asphalt binder in accordance with the manufacturer’s recommendations.

iii. The blended binder shall meet the requirements of AASHTO M 332 and shall be graded or verified in accordance with AASHTO R 29 for the specified binder grade. The Contractor shall submit a Certified Test Report showing the results of the testing demonstrating the binder grade. In addition, it must include the grade of the virgin binder, the brand name of the warm mix additive, the manufacturer’s suggested rate for the WMA additive, the water injection rate (when applicable) and the WMA Technology manufacturer’s recommended mixing and compaction temperature ranges.

5. Emulsified Asphalts:
   a. General:
      i. Emulsified asphalts shall be homogeneous and be free of contaminants such as fuel oils and other solvents. Emulsions shall be properly stored to prevent damage or separation.

      ii. The blending at mixing plants of emulsified asphalts from different suppliers is strictly prohibited. Contractors who blend emulsified asphalts will be classified as a supplier and will be required to certify the emulsion in accordance with AASHTO PP 71. The emulsified asphalt shall meet the requirements of AASHTO M 140(M) or AASHTO M 208 as applicable.

   b. Supplier Approval:
      i. The request for approval of the source of supply shall list the location where the material is manufactured, the handling and storage methods, and certifications in accordance with AASHTO PP 71. Only suppliers that have an approved “Quality Control Plan for Emulsified Asphalt” formatted in accordance with AASHTO PP 71 will be allowed to supply emulsified asphalt to Department projects.

      ii. The supplier shall submit to the Division Chief a Certified Test Report representing each lot in accordance with AASHTO PP 71. The Certified Test Report shall include test results for each specified requirement for the grade delivered and shall also indicate the density at 60°F. Additionally, once a month one split sample for each emulsified asphalt grade shall be submitted.

   c. Basis of Approval
      i. Each shipment of emulsified asphalt delivered to the project site shall be accompanied with the corresponding SDS and Certified Test Report listing Saybolt viscosity, residue by evaporation, penetration of residue, and weight per gallon at 60°F.

      ii. Anionic emulsified asphalts shall conform to the requirements of AASHTO M-140(M). Materials used for tack coat shall not be diluted and meet grade RS-1 or RS-1H. When ambient temperatures are 80°F and rising, grade SS-1 or SS-IH may be substituted if permitted by the Engineer.
iii. Cationic emulsified asphalt shall conform to the requirements of AASHTO M-208. Materials used for tack coat shall not be diluted and meet grade CRS-1. The settlement and demulsibility test will not be performed unless deemed necessary by the Engineer. When ambient temperatures are 80°F and rising, grade CSS-1 or CSS-Ih may be substituted if permitted by the Engineer.

6. Reclaimed Asphalt Pavement (RAP):
   a. Requirements: RAP shall consist of asphalt pavement constructed with asphalt and aggregate reclaimed by cold milling or other removal techniques approved by the Engineer. For bituminous concrete mixtures containing RAP, the Contractor shall submit a JMF in accordance with Article M.04.02 to the Engineer for review.

   b. Basis of Approval: The RAP material will be accepted on the basis of one of the following criteria:
      i. When the source of all RAP material is from pavements previously constructed on Department projects, the Contractor shall provide a materials certificate listing the detailed locations and lengths of those pavements and that the RAP is only from those locations listed.

      ii. When the RAP material source or quality is not known, the Contractor shall test the material and provide the following information along with a request for approval to the Engineer at least 30 calendar days prior to the start of the paving operation. The request shall include a material certificate stating that the RAP consists of aggregates that meet the specification requirements of sub articles M.04.01-1 through 3 and that the binder in the RAP is substantially free of solvents, tars and other contaminants. The Contractor is prohibited from using unapproved material on Department projects and shall take necessary action to prevent contamination of approved RAP stockpiles. Stockpiles of unapproved material shall remain separate from all other RAP materials at all times. The request for approval shall include the following:
         1. A 50-pound sample of the RAP to be incorporated into the recycled mixture.
         2. A 25-pound sample of the extracted aggregate from the RAP.
         3. A statement that RAP material has been crushed to 100% passing the ½ inch sieve and remains free from contaminants such as joint compound, wood, plastic, and metals.

7. Crushed Recycled Container Glass (CRCG):
   a. Requirements: The Contractor may propose to use clean and environmentally-acceptable CRCG in an amount not greater than 5% by weight of total aggregate.

   b. Basis of Approval: The Contractor shall submit to the Engineer a request to use CRCG. The request shall state that the CRCG contains no more than 1% by weight of contaminants such as paper, plastic and metal and conform to the following gradation:
8. **Joint Seal Material:**
   a. **Requirements:** Joint seal material shall be a hot-poured rubber compound intended for use in sealing joints and cracks in bituminous concrete pavements. Joint seal material must meet the requirements of ASTM D 6690 – Type 2.

9. **Recycled Asphalt Shingles (RAS)**
   a. **Requirements:** RAS shall consist of processed asphalt roofing shingles from post-consumer asphalt shingles or from manufactured shingle waste. The RAS material under consideration for use in bituminous concrete mixtures must be certified as being asbestos free and shall be entirely free of whole, intact nails. The RAS material shall meet the requirements of AASHTO MP 23.

   The producer shall test the RAS material to determine the asphalt content and the gradation of the RAS material. The producer shall take necessary action to prevent contamination of RAS stockpiles.

10. **Plant Requirements:**
    a. **Mixing Plant and Machinery:** The mixing plant used in the preparation of the bituminous concrete shall comply with AASHTO M 156/ASTM D 995 for a Batch Plant or a Drum Dryer Mixer Plant, and be approved by the Engineer.

    b. **Storage Silos:** For all mixes, the Contractor may use silos for short-term storage of mixtures with prior notification and approval of the Engineer. A silo must have heated cones and an unheated silo cylinder if it does not contain a separate internal heating system. Prior approval must be obtained for storage times greater than those indicated. When multiple silos are filled, the Contractor shall discharge one silo at a time. Simultaneous discharge of multiple silos is not permitted.

    | Type of silo cylinder         | Maximum storage time for all classes (hr) |
    |------------------------------|------------------------------------------|
    | Open Surge                   | 4                                        |
    | Unheated – Non-insulated     | 8                                        |
    | Unheated – Insulated         | 18                                       |
    | Heated – No inert gas        | TBD by the Engineer                      |

    c. **Documentation System:** The mixing plant documentation system shall include equipment for accurately proportioning the components of the mixture by weight and in the proper order, controlling the cycle sequence and timing the mixing operations. Recording equipment shall monitor the batching sequence of each component of the mixture and produce a printed record of these operations on each delivery ticket, as specified herein. Material feed controls shall be automatically or manually adjustable to provide proportions within the tolerances listed below for any batch size.
An asterisk (*) shall be automatically printed next to any individual batch weight(s) exceeding the tolerances in ASTM D 995 section 8.7.3. The entire batching and mixing interlock cut-off circuits shall interrupt and stop the automatic batching operations when an error exceeding the acceptable tolerance occurs in proportioning.

There must be provisions so that scales are not manually adjusted during the printing process. In addition, the system shall be interlocked to allow printing only when the scale has come to a complete rest. A unique printed character (m) shall automatically be printed on the truck and batch plant printout when the automatic batching sequence is interrupted or switched to auto-manual or full manual during proportioning. For each day's production, each project shall be provided a clear, legible copy of these recordings on each delivery ticket.

d. **Aggregates:** The Contractor shall ensure that aggregate stockpiles are managed to provide uniform gradation and particle shape, prevent segregation and cross contamination in a manner acceptable to the Engineer. For drum plants only, the Contractor shall determine the percent moisture content at a minimum, prior to production and halfway through production.

e. **Mixture:** The dry and wet mix times shall be sufficient to provide proper coating (minimum 95% as determined by AASHTO T 195(M)) of all particles with bitumen and produce a uniform mixture.

The Contractor shall make necessary adjustments to ensure all types of bituminous concrete mixtures contain no more than 0.5% moisture throughout when tested in accordance with AASHTO T 329.

f. **RAP:** The Contractor shall indicate the percent of RAP, the moisture content (as a minimum determined twice daily prior to production and halfway through production), and the net dry weight of RAP added to the mixture on each delivery ticket. For each day of production, the production shall conform to the job mix formula and RAP percentage and no change shall be made without the prior approval of the Engineer.

g. **Asphalt Binder:** The last day of every month, a binder log shall be submitted when the monthly production for the Department exceeds 5000 tons. Blending of PG binders from different suppliers or grades at the bituminous concrete production facility is strictly prohibited.

h. **Warm mix additive:** For mechanically foamed WMA, the maximum water injection rate shall not exceed 2.0% water by total weight of binder and the water injection rate shall be constantly monitored during production.

i. **Field Laboratory:** The Contractor shall furnish the Engineer an acceptable field laboratory at the production facility to test bituminous concrete mixtures during production. The field laboratory shall have a minimum of 300 square feet, have a potable water source and drainage in accordance with the CT Department of Public Health Drinking Water Division, and be equipped with all necessary testing equipment as well as with a PC, printer, and telephone with a dedicated hard-wired phone line. In addition, the PC shall have a high speed internet connection with a minimum upstream of 384 Kbps.
and a functioning web browser with unrestricted access to https://ctmail.ct.gov. This equipment shall be maintained in clean and good working order at all times and be made available for use by the Engineer.

The laboratory shall be equipped with a suitable heating system capable of maintaining a minimum temperature of 65°F. It shall be clean and free of all materials and equipment not associated with the laboratory. Windows shall be installed to provide sufficient light and ventilation. During summer months adequate cooling or ventilation must be provided so the indoor air temperature shall not exceed the ambient outdoor temperature. Light fixtures and outlets shall be installed at convenient locations, and a telephone shall be within audible range of the testing area. The laboratory shall be equipped with an adequate workbench that has a suitable length, width, and sampling tables, and be approved by the Engineer.

The quantity of all equipment and supplies necessary to perform the tests must be sufficient to initiate and complete the number of tests identified in Table M.04.03-2 for the quantity of mixture produced at the facility on a daily basis. The Contractor shall ensure that the Laboratory is adequately supplied at all times during the course of the project with all necessary testing materials and equipment.

The Contractor shall maintain a list of laboratory equipment used in the acceptance testing processes including but not limited to, balances, scales, manometer/vacuum gauge, thermometers, gyratory compactor, clearly showing calibration and/or inspection dates, in accordance with AASHTO R 18. The Contractor shall notify the Engineer if any modifications are made to the equipment within the field laboratory. The Contractor shall take immediate action to replace, repair, and/or recalibrate any piece of equipment that is out of calibration, malfunctioning, or not in operation.

M.04.02 —Mix Design and Job Mix Formula (JMF)

1. Curb Mix:
   a. **Requirements:** When curb mix is specified, the Contractor shall develop a bituminous concrete mix design that includes a JMF consisting of target values for gradation, binder content and air voids as shown in Table M.04.02-1. The Contractor may use RAP in 5% increments up to a maximum of 30% provided a new JMF is accepted by the Engineer.

   b. **Basis of Approval:** The Contractor shall submit to the Engineer a request for approval of the JMF annually in accordance with one of the methods described herein. Prior to the start of any paving operations, the JMF must be accepted by the Engineer, and the Contractor must demonstrate the ability to meet the accepted JMF. Additionally, the fraction of material retained between any two consecutive sieves shall not be less than 4%.

      The Contractor shall test the mixture for compliance with the submitted JMF and Table M.04.02-1. The maximum theoretical density (Gmm) will be determined by AASHTO T 209. If the mixture does not meet the requirements, the JMF shall be adjusted within the ranges shown in Table M.04.02-1 until an acceptable mixture is produced.
An accepted JMF from the previous operating season may be acceptable to the Engineer provided that there are no changes in the sources of supply for the coarse aggregate, fine aggregate, recycled material (if applicable) and the plant operation had been consistently producing acceptable mixture.

The Contractor shall not change sources of supply after a JMF has been accepted. Before a new source of supply for materials is used, a new JMF shall be submitted to the Engineer for approval.

**TABLE M.04.02 – 1:**
Master Ranges for Curb Mix Mixtures

<table>
<thead>
<tr>
<th>Mix</th>
<th>Curb Mix</th>
<th>Production Tolerances from JMF target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade of PG Binder content %</td>
<td>PG 64S-22 6.5 - 9.0</td>
<td>0.4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sieve Size</th>
<th>Tolerances from JMF target</th>
</tr>
</thead>
<tbody>
<tr>
<td># 200</td>
<td>3.0 – 8.0 (b)</td>
</tr>
<tr>
<td># 50</td>
<td>10 - 30</td>
</tr>
<tr>
<td># 30</td>
<td>20 - 40</td>
</tr>
<tr>
<td># 8</td>
<td>40 - 70</td>
</tr>
<tr>
<td># 4</td>
<td>65 - 87</td>
</tr>
<tr>
<td>¼“</td>
<td></td>
</tr>
<tr>
<td>3/8 “</td>
<td>95 - 100</td>
</tr>
<tr>
<td>½ “</td>
<td>100</td>
</tr>
<tr>
<td>¾”</td>
<td></td>
</tr>
<tr>
<td>1”</td>
<td></td>
</tr>
<tr>
<td>2”</td>
<td></td>
</tr>
</tbody>
</table>

Additionally, the fraction of material retained between any two consecutive sieves shall not be less than 4%.

<table>
<thead>
<tr>
<th>Mixture Temperature</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Binder</td>
<td>325°F maximum</td>
</tr>
<tr>
<td>Aggregate</td>
<td>280-350° F</td>
</tr>
<tr>
<td>Mixtures</td>
<td>265-325° F</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mixture Properties</th>
<th>VOIDS %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 – 4.0 (a)</td>
</tr>
</tbody>
</table>

2. Marshall Method - Class 1, 2, 3, 4, 5, 5A, 5B and 12:

a. Requirements: When specified, the Marshall method shall be employed to develop a bituminous concrete mix design that includes a JMF consisting of target values for
gradation and bitumen content for each class of bituminous concrete designated for the
project in accordance with the latest Asphalt Institute’s MS-2 manual. Each class of bituminous concrete must meet the requirements as shown in Table M.04.02-1.

b. **Basis of Approval**: The Contractor shall submit to the Engineer a request for approval of the JMF annually in accordance with one of the methods described herein. Prior to the start of any paving operations, the JMF and production percentage of bitumen must be accepted by the Engineer, and the Contractor must demonstrate the ability to meet the accepted JMF and production percentage of bitumen for each class of mixture. Additionally, the fraction of material retained between any two consecutive sieves shall not be less than 4%.

The Engineer will test each class of mixture for compliance with the submitted JMF and Table M.04.02-1. The maximum theoretical density (Gmm) will be determined by AASHTO T 209(M). If the mixture does not meet the requirements, the JMF shall be adjusted within the ranges shown in Table M.04.02-1 until an acceptable mixture is produced. All equipment, tests and computations shall conform to the Marshall method in accordance with AASHTO T 245(M).

An accepted JMF from the previous operating season may be acceptable to the Engineer provided that there are no changes in the sources of supply for the coarse aggregate, fine aggregate, recycled material (if applicable) and the plant operation had been consistently producing acceptable mixture.

The Contractor shall not change sources of supply after a JMF has been accepted. Before a new source of supply for materials is used, a new JMF shall be submitted to the Engineer for approval.

c. **Marshall Mixture (Virgin)**: For bituminous concrete mixtures that contain no recycled material, the limits prescribed in Table M.04.02-1 govern. The Contractor shall submit to the Engineer for approval, a JMF with the individual fractions of the aggregate expressed as percentages of the total weight of the mix and the source(s) of all materials. The JMF shall indicate two bitumen contents; the JMF target percentage and a production percentage (actual amount added to mix) of bitumen for each mix class by total weight. For surface course Class 1, a 0.45 power gradation chart shall also be submitted on which is plotted the percentage passing each sieve. The JMF shall also indicate the target temperature of completed mixture as it is dumped from the mixer and tested in accordance with Article M.04.03.

d. **Marshall Mixtures with RAP**: In addition to subarticles M.04.02 – 1a through c, RAP in bituminous concrete shall comply with requirements stated in Article M.04.01, and as stated herein. Upon approval of the Engineer, a maximum of 15% RAP may be used with no binder grade modification. RAP material shall not be used with any other recycling option. The Contractor may increase the RAP percentage in 5% increments up to a maximum of 30% provided a new JMF is accepted by the Engineer. The following information shall be included in the JMF submittal:
   - Gradation and asphalt content of the RAP.
   - Percentage of RAP to be used.
- Virgin aggregate source(s).
- Total binder content based on total mixture weight.
- Production pull percentage of added virgin binder based on total mixture weight.
- Gradation of combined bituminous concrete mixture (including RAP).
- Grade of virgin added, if greater than 15% of total mix weight.

e. **Marshall Mixture with CRCG:** In addition to subarticle M.04.02 – 1a through c, for bituminous concrete that contains CRCG, the Contractor shall submit a materials certificate to the Engineer stating that the mixture and its components comply with requirements stated in subarticle M.04.01 - (6). Additionally, 1% hydrated lime, or other accepted non-stripping agent, shall be added to all mixtures containing CRCG. CRCG material shall not be used with any other recycling option.

3. **Cold Patch Method - Class 5, 5A, 5B:**
   a. **Requirements:** This mixture must be capable of being stockpiled and workable at all times. A non-stripping agent accepted by the Engineer shall be used in accordance with manufacturer's recommendations. The Contractor shall take necessary steps to ensure that this mixture uses aggregate containing no more than 1% moisture and is not exposed to any rain, snow, or standing water for a period of 6 hours after being mixed. This mixture shall be mixed and stockpiled at the point of production on a paved surface at a height not greater than 4 feet during the first 48 hours prior to its use.

   i. Class 5A mixture shall have 3/8 to ½ inch polypropylene fibers that have been approved by the Engineer added at a rate of 6 pounds per ton of mixture.

   ii. Class 5B mixture shall have ¼ inch polyester fibers that have been approved by the Engineer added at the rate of 2 1/2 pounds per ton of mixture.

   iii. Class 5 mixture shall not contain fibers.

   b. **Basis of Approval:** The aggregates, fibers and binder (MC-250) shall meet the requirements as specified in sub articles M.04.01-1 through 4 and in Table M.04.02-1. The use of recycled material is not permitted with these classes of bituminous concrete. Mixtures not conforming to the binder content as shown in Table M.04.02-1 shall be subject to rejection. There is a two test minimum per day of production. Mixtures not conforming to the gradation as shown in Table M.04.02-1 shall be subject to payment adjustment as specified in Section 4.06.
TABLE M.04.02 – 1 MASTER RANGES FOR MARSHALL BITUMINOUS-CONCRETE MIXTURES

Notes: (a) 75 blow (Marshall Criteria). (b) 3-6% when used for a roadway wearing surface. (c) For divided highways with 4 or more lanes, a stability of 1500 lbs is required. (d) Contains an accepted non-stripping compound. (e) To help prevent stripping, the mixed material will be stockpiled on a paved surface and at a height not greater than 4 feet during the first 48 hours. (f) As determined by AASHTO T 245(M). (g) The percent passing the #200 sieve shall not exceed the percentage of bituminous asphalt binder determined by AASHTO T 164 or AASHTO T 308(M). (h) Mixture with 5% or more aggregate retained on ¾” sieve. (i) Mixtures finer than condition (h) above. (j) Class 5 mixture shall contain no fibers. Class 5A mixture shall have 3/8 to ½ inch polypropylene fibers that have been previously accepted by the Engineer added at a minimum rate of 6 pounds per ton of mixture. Class 5B mixture shall have ¼ inch polyester fibers that have been previously accepted by the Engineer added at the minimum rate of 2 1/2 pounds per ton of mixture.

<table>
<thead>
<tr>
<th>CLASS</th>
<th>1</th>
<th>2</th>
<th>3 (Curb Mix)</th>
<th>4</th>
<th>12</th>
<th>5 (e)(j)</th>
<th>5A (e)(j)</th>
<th>5B (e)(j)</th>
<th>JMF % Tol. (±)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade of PG Binder content %</td>
<td>PG64-22 5.0–6.5</td>
<td>PG64-22 5.0–8.0</td>
<td>PG 64-22 6.5 - 9.0</td>
<td>PG 64-22 4.0 - 6.0</td>
<td>PG64-22 7.5-10.0</td>
<td>MC-250 (d) 6.0 - 7.5</td>
<td>MC-250 (d) 6.0 - 7.5</td>
<td>MC-250 (d) 6.0 - 7.5</td>
<td>0.4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sieve Size</th>
<th>Percent Passing (%)</th>
<th>3.0 – 8.0 (g)</th>
<th>3.0 – 8.0 (g)</th>
<th>3.0 – 8.0 (g)</th>
<th>0.0 – 5.0 (g)</th>
<th>3.0 – 10.0 (g)</th>
<th>0.0 – 2.5</th>
<th>0.0 – 2.5</th>
<th>0.0 – 2.5</th>
<th>2.0</th>
</tr>
</thead>
<tbody>
<tr>
<td># 200</td>
<td></td>
<td>6 – 26</td>
<td>8 – 26</td>
<td>10 - 30</td>
<td>5 - 18</td>
<td>10 - 40</td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td># 50</td>
<td></td>
<td>10 - 32</td>
<td>16 - 36</td>
<td>20 - 40</td>
<td>20 - 60</td>
<td>2 - 15</td>
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<td>2 - 15</td>
<td>2 - 15</td>
<td>5</td>
</tr>
<tr>
<td># 30</td>
<td></td>
<td>28 - 50</td>
<td>40 - 64</td>
<td>40 - 70</td>
<td>20 - 40</td>
<td>60 - 95</td>
<td>10 - 45</td>
<td>10 - 45</td>
<td>10 - 45</td>
<td>6</td>
</tr>
<tr>
<td># 8</td>
<td></td>
<td>40 - 65</td>
<td>55 - 80</td>
<td>65 - 87</td>
<td>30 - 55</td>
<td>80 - 95</td>
<td>40 - 100</td>
<td>40 - 100</td>
<td>40 - 100</td>
<td>7</td>
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<tr>
<td>⅛”</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/8 “</td>
<td></td>
<td>60 - 82</td>
<td>90 - 100</td>
<td>95 - 100</td>
<td>42 - 66</td>
<td>98 - 100</td>
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<td>100</td>
<td>100</td>
<td>8</td>
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<td>½ “</td>
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<td>70 - 100</td>
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<td>100</td>
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<td>8</td>
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<tr>
<td>⅜”</td>
<td></td>
<td>90 - 100</td>
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<td>60 - 80</td>
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<tr>
<td>2”</td>
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<td></td>
<td></td>
<td></td>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additionally, the fraction of material retained between any two consecutive sieves shall not be less than 4%

<table>
<thead>
<tr>
<th>Mixture Temperature</th>
<th>Binder</th>
<th>325°F maximum</th>
<th>140-185°F F</th>
<th>Aggregate</th>
<th>280-350°F F</th>
<th>100-175°F</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Mixtures</th>
<th>265-325°F</th>
<th>275-325°F</th>
<th>120-175°F</th>
<th>25°F</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOID (%)</td>
<td>3.0 – 6.0 (a)</td>
<td>2.0 – 5.0 (b)</td>
<td>0 – 4.0</td>
<td>0 – 5.0 (a)</td>
</tr>
<tr>
<td>Stability (f) lbs. min.</td>
<td>1200 (c)</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
</tr>
<tr>
<td>FLOW (f) in.</td>
<td>.08 - .15</td>
<td>.08 - .15</td>
<td>.08 - .18</td>
<td>.08 - .15</td>
</tr>
<tr>
<td>VMA % - min.</td>
<td>15(h) :16 (i)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mixture Properties

Special Provisions

SP-43

Section M.04
M.04.03 — Production Requirements:

1. Standard Quality Control Plan (QCP) for Production:

The QCP for production shall describe the organization and procedures which the Contractor shall use to administer quality control. The QCP shall include the procedures used to control the production process, to determine when immediate changes to the processes are needed, and to implement the required changes. The QCP must detail the inspection, sampling and testing protocols to be used, and the frequency for each.

Control Chart(s) shall be developed and maintained for critical aspect(s) of the production process as determined by the Contractor. The control chart(s) shall identify the material property, applicable upper and lower control limits, and be updated with current test data. As a minimum, the following quality characteristics shall be included in the control charts: percent passing #4 sieve, percent passing #200 sieve, binder content, air voids, Gmm and VMA. The control chart(s) shall be used as part of the quality control system to document variability of the bituminous concrete production process. The control chart(s) shall be submitted to the Engineer the first day of each month.

The QCP shall also include the name and qualifications of a Quality Control Manager. The Quality Control Manager shall be responsible for the administration of the QCP, including compliance with the plan and any plan modifications.

The Contractor shall submit complete production testing records to the Engineer within 24 hours in a manner acceptable to the Engineer.

The QCP shall also include the name and qualifications of any outside testing laboratory performing any QC functions on behalf of the Contractor. The QCP must also include a list of sampling & testing methods and frequencies used during production, and the names of all Quality Control personnel and their duties.

Approval of the QCP does not imply any warranty by the Engineer that adherence to the plan will result in production of bituminous concrete that complies with these specifications. The Contractor shall submit any changes to the QCP as work progresses.

2. Acceptance Sampling & Testing Methods: Acceptance samples of mixtures shall be obtained from the hauling vehicles and tested by the Contractor at the facility during each day's production.

The hauling vehicle from which samples are obtained shall be selected using stratified – random sampling based on the total estimated tons of production in accordance with ASTM D 3665, except that the first test shall be randomly taken from the first 151 tons or as directed by the Engineer.

The number of sub lots and tests required per sub lot is based on the total estimated tons of production per day as indicated in Table M.04.03-1. Quantities of the same type/level mix per plant may be combined daily for multiple state projects to determine the number of sub lots.
The payment adjustment for air voids and liquid binder will be calculated per sub lot as described in Section 4.06.

An acceptance test shall not be performed within 150 tons of production from a previous acceptance test unless approved by the Engineer. Quality Control tests are not subject to this restriction. Unless otherwise tested, a minimum of one (1) acceptance test shall be performed for every four days of production at a facility for each type/level mix (days of production may or may not be consecutive days).

The Contractor shall submit all acceptance tests results to the Engineer within 24 hours or prior to the next day’s production. All acceptance test specimens and supporting documentation must be retained by the Contractor. Verification testing will be performed by the Engineer on the retained specimens in accordance with the Department’s QA Program for Materials.

Should the Engineer be unable to verify the Contractor’s acceptance test result(s) due to a failure of the Contractor to retain acceptance test specimens or supporting documentation, the Contractor shall review its quality control plan, determine the cause of the nonconformance and respond in writing within 24 hours to the Engineer describing the corrective action taken at the plant. In addition the Contractor must provide supporting documentation or test results to validate the subject acceptance test result(s). The Engineer may invalidate any positive adjustments for material corresponding to the acceptance test(s). Failure of the Contractor to adequately address quality control issues at a facility may result in suspension of production for the project at that facility.

Contractor personnel performing acceptance sampling and testing must be present at the facility prior to, and during production, and be certified as a NETTCP HMA Plant Technician or Interim HMA Plant Technician and be in good standing. Production of material for use on this project must be suspended by the Contractor if such personnel are not present.

Technicians found by the Engineer to be non-compliant with NETTCP or Department policies may be removed by the Engineer from participating in the acceptance testing process for this project until their actions can be reviewed.

Anytime during production that testing equipment becomes inoperable, production can continue for a maximum of 1 hour. The Contractor shall obtain box sample(s) in accordance with Table M.04.03-1 to satisfy the daily acceptance testing requirement for the quantity shipped to the project. The box sample(s) shall be tested once the equipment issue has been resolved to the satisfaction of the Engineer. Production beyond 1 hour may be considered by the Engineer. Production will not be permitted beyond that day until the subject equipment issue has been resolved.
Table M.04.03 – 1: Acceptance Testing Frequency per Type/Level/Plant

<table>
<thead>
<tr>
<th>Daily quantity produced in tons (lot)</th>
<th>Number of Sub Lots/Tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 150</td>
<td>0, Unless requested by the Engineer</td>
</tr>
<tr>
<td>151 to 600</td>
<td>1</td>
</tr>
<tr>
<td>601 to 1,200</td>
<td>2</td>
</tr>
<tr>
<td>1,201 to 1,800</td>
<td>3</td>
</tr>
<tr>
<td>1,801 or greater</td>
<td>1 per 600 tons or portions thereof</td>
</tr>
</tbody>
</table>

i. **Marshall Mix Acceptance Sampling and Testing Procedures:** When the Marshall mix design is specified, the following acceptance procedures and AASHTO test methods shall be used:

Table M.04.03 – 2: Marshall Acceptance Test Procedures

<table>
<thead>
<tr>
<th>Protocol</th>
<th>Reference</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>AASHTO T 30(M)</td>
<td>Mechanical Analysis of Extracted Aggregate</td>
</tr>
<tr>
<td>2</td>
<td>AASHTO T 40(M)</td>
<td>Sampling Bituminous Materials</td>
</tr>
<tr>
<td>3</td>
<td>AASHTO T 308(M)</td>
<td>Binder content by Ignition Oven method (adjusted for aggregate correction factor)</td>
</tr>
<tr>
<td>5</td>
<td>AASHTO T 209(M)</td>
<td>Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures</td>
</tr>
<tr>
<td>6</td>
<td>AASHTO T 269(M)</td>
<td>Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures</td>
</tr>
<tr>
<td>7</td>
<td>AASHTO T 329</td>
<td>Moisture Content of Hot-Mix Asphalt (HMA) by Oven Method</td>
</tr>
</tbody>
</table>

a. **Cessation of Supply:** Marshall Mix Production shall cease for the Project from any facility that consistently fails to produce mixture that meets the JMF and volumetric properties. The criteria for ceasing the supply of a class of mixture from any plant are as follows:

i. **Off-Test Status:** The results of AASHTO T 164 or AASHTO T 308(M) and T 30(M) will be used to determine if the mixture is within the tolerances shown in Table M.04.02-1. The Contractor will be notified that a plant is "off test" for a class of mixture when the test results indicate that any single value for bitumen content or gradation are not within the tolerances shown in Table M.04.02-1 for that class of mixture.
ii. When multiple plants and silos are located at one site, mixture supplied to one project is considered as coming from one source for the purpose of applying the “off test” adjusted payment.

iii. If a test indicates that the bitumen content or gradation are outside the tolerances, the Contractor may make a single JMF change on classes 1, 2, 3, 4 and 12 as allowed by the Engineer prior to any additional testing. A JMF change shall include the date and name of the Engineer that allowed it. Consecutive test results outside the requirements of Table M.04.02-1 JMF tolerances may result in rejection of the mixture.

iv. The Engineer may cease supply of mixture from the plant when the test results from three non-consecutive samples of a class of mixture are not within the JMF tolerances or the test results from two non-consecutive samples not within the master range indicated in Table M.04.02-1 during any one production period, due to inconsistent production.

v. Any modification to the JMF shall not exceed 50% of the JMF tolerances indicated in Table M.04.02-1 for any given component of the mixture without approval of the Engineer. When such an adjustment is made to the bitumen, the corresponding production percentage of bitumen shall be revised accordingly.

b. Adjustments for Off Test Mixture under Cessation of Supply: The bituminous concrete plant shall cease supplying to the project:

i. When the test results from three consecutive samples are “off test” and not within the JMF tolerances or,

ii. The test results from two consecutive samples are “off test” and not within the ranges indicated in Table M.04.02 – 1 or,

iii. When the percent of material passing the minus #200 sieve material exceeds the percent of extracted bitumen content for three consecutive samples during any production period of the values stated in Table M.04.02-1:
   a. The quantity of mixtures shipped to the project determined to be “off test” and outside the tolerances will be tabulated by the Engineer and will be adjusted in accordance with Section 4.06.
   b. Following cessation, a trial production period will be required at the plant for that class of mixture. Use of that class of mixture from that plant will be prohibited on the Project until the plant has demonstrated the ability to consistently produce acceptable mixture.
   c. When the Engineer has accepted the mixtures from the trial production period, the use of that mixture on the Project may resume.
3. Curb Mix Acceptance Sampling and Testing Procedures:

Curb Mixes shall be tested by the Contractor at a frequency of one test per every 250 tons of cumulative production, regardless of the day of production.

When these mix designs are specified, the following acceptance procedures and AASHTO test methods shall be used:

<table>
<thead>
<tr>
<th>Protocol</th>
<th>Reference</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>AASHTO T 30(M)</td>
<td>Mechanical Analysis of Extracted Aggregate</td>
</tr>
<tr>
<td>2</td>
<td>AASHTO T 168</td>
<td>Sampling of Bituminous Concrete</td>
</tr>
<tr>
<td>3</td>
<td>AASHTO T 308</td>
<td>Binder content by Ignition Oven method (adjusted for aggregate correction factor)</td>
</tr>
<tr>
<td>4</td>
<td>AASHTO T 209(M)</td>
<td>Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures</td>
</tr>
<tr>
<td>5</td>
<td>AASHTO T 329</td>
<td>Moisture Content of Hot-Mix Asphalt (HMA) by Oven Method</td>
</tr>
</tbody>
</table>

a. Determination of Off-Test Status:
   i. The test results of AASHTO T 308 and T 30(M) will be used to determine if the mixture is within the tolerances shown in Table M.04.02-1. Curb Mixtures are considered “off test” when the test results indicate that any single value for bitumen content or gradation are not within the tolerances shown in Table M.04.02-1 for that mixture. If the mix is “off test”, the Contractor must take immediate actions to correct the deficiency and a new acceptance sample shall be tested on the same day or the following day of production.

   ii. When multiple plants and silos are located at one site, mixture supplied to one project is considered as coming from one source for the purpose of applying the “off test” status.

   iii. The Engineer may cease supply from the plant when test results from three consecutive samples are not within the JMF tolerances or the test results from two consecutive samples not within the master range indicated in Table M.04.02-1 regardless of production date.

b. JMF Changes
   i. If a test indicates that the bitumen content or gradation are outside the tolerances, the Contractor may make a single JMF change as allowed by the Engineer prior to any additional testing. A JMF change shall include the date and name of the Engineer that allowed it. Consecutive test results outside the requirements of Table M.04.02-1 JMF tolerances may result in rejection of the mixture.
ii. Any modification to the JMF shall not exceed 50% of the JMF tolerances indicated in Table M.04.02-1 for any given component of the mixture without approval of the Engineer. When such an adjustment is made to the bitumen, the corresponding production percentage of bitumen shall be revised accordingly.

**TABLE M.04.03-7:**

Modifications to Standard AASHTO and ASTM Test Specifications and Procedures

<table>
<thead>
<tr>
<th>AASHTO Standard Specification</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>M 140</td>
<td>Emulsified Asphalt grade RS-1H shall meet all the requirements of the emulsified asphalt grade RS-1 except for the penetration requirement of the residue that will change from 100 to 200 penetration units (0.1 mm) to 40 to 90 penetration units (0.1 mm).</td>
</tr>
</tbody>
</table>
| M 320                        | 1. Mass change for PG 64-22 shall be a maximum loss of 0.5% when tested in accordance with AASHTO T 240.  
2. The two bottles used for the mass change determination may be re-heated and used for further testing. |

**AASHTO Standard Method of Test**

<table>
<thead>
<tr>
<th>Reference</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>T 27</td>
<td>Section 7.7 Samples are not washed</td>
</tr>
<tr>
<td>T 30</td>
<td>Section 7.2 thru 7.4 Samples are not routinely washed for production testing</td>
</tr>
</tbody>
</table>
| T 168     | Samples are taken at one point in the pile. Samples from a hauling vehicle are taken from only one point instead of three as specified.  
Selection of Samples: Sampling is equally important as the testing, and the sampler shall use every precaution to obtain samples that are truly representative of the bituminous mixture.  
Box Samples: In order to enhance the rate of processing samples taken in the field by construction or maintenance personnel the samples will be tested in the order received and data processed to determine conformance to material specifications and to prioritize inspections by laboratory personnel. |
| T 195     | Section 4.3 only one truck load of mixture is sampled. Samples are taken from opposite sides of the load. |
| T 209     | Section 7.2 The average of two bowls is used proportionally in order to satisfy minimum mass requirements.  
8.3 Omit Pycnometer method. |
| T 283     | When foaming technology is used, the material used for the fabrication of the specimens shall be cooled to room temperature, and then reheated to the manufactures recommended compaction temperature prior to fabrication of the specimens. |
| T 308     | In addition to the standard testing procedure, the Department has adopted a procedure that addresses a correction factor that is calculated using the composite aggregate percentages (Composite Aggregate Correction Factor Method (CACF)). |
The aggregate is burned in compliance with the standard AASHTO procedure Method A exclusively. All modifications are listed for this method only. A2.2 and A2.3 Omit
A2.4 Omit. Replace with: Determine an aggregate gradation for each aggregate component “blank” in accordance with T30.
A2.5 Omit. Replace with: The individual aggregate samples are to be dried in an oven at a maximum temperature of 148 ± 5ºC (300 ± 9º F) to a constant weight. RAP samples are to be oven dried at a maximum temperature of 110 ± 5ºC (230 ± 9º F) to a constant weight. RAP samples will be burned for total binder content only and not to arrive at a correction factor for a mixture.
A2.6 and A2.7 and A2.8 Omit.
A2.8.1 Omit Note 2
A2.9 Omit. Replace with: Perform a gradation analysis on the residual aggregate in accordance with T30 and compare it to the gradation performed prior to burning.
A2.9.1 and A2.9.2 Omit

The correction factors for each size aggregate are provided by the Contractor to the Engineer prior to the Annual Plant Inspection. The Engineer may verify the correction factors. The Composite Aggregate Correction Factor (CACF) for any mixture may be calculated by summing the result of the correction factor for each individual aggregate multiplied by the percentage of that aggregate in the overall mixture.
(Note: All correction factors must be re-calculated every time the percentage of any aggregate changes within the mixture.)

If the average corrected Pb content from the ignition oven differs by 0.3% or more from the average bituminous concrete facility production weigh ticket in five (5) consecutive tests regardless of the production date (moving average), the Contractor shall immediately investigate, determine an assignable cause and correct the issue. When two consecutive moving average differences are 0.3% or more, the Engineer may require a new correction factor calculation for all the aggregate components in the mix.
In addition to the standard testing procedure, the Department has adopted a procedure that addresses the time involved between sampling the hot-mix asphalt specimen and the beginning of the test.
6.3 Omit. Replace with: The test specimen must be ready to be placed in an approved ignition furnace for testing within ten minutes of being obtained from the hauling vehicle and the test shall start immediately after.

<p>| T 331 | 6.1 Cores are dried to a constant mass prior to testing using a core-dry machine. |</p>
<table>
<thead>
<tr>
<th>Reference</th>
<th>Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>R 26</td>
<td>Quality Control Plans must be formatted in accordance with AASHTO R 26, certifying suppliers of performance-graded asphalt binders, Section 9.0, Suppliers Quality Control Plan, and “NEAUPG Model PGAB QC Plan.”</td>
</tr>
</tbody>
</table>

1. The Department requires that all laboratory technician(s) responsible for testing PG-binders be certified or Interim Qualified by the New England Transportation Technician Certification Program (NETTCP) as a PG Asphalt Binder Lab Technician.

2. Sampling of asphalt binders should be done under the supervision of qualified technician. NECTP “Manual of Practice,” Chapter 2 Page 2-4 (Key Issues 1-8).

3. All laboratories testing binders for the Department are required to be accredited by the AASHTO Materials Reference Laboratory (AMRL).

4. Sources interested in being approved to supply PG-binders to the Department by use of an “in-line blending system,” must record properties of blended material, and additives used.

5. Each source of supply of PG-binder must indicate that the binders contain no additives used to modify or enhance their performance properties. Binders that are manufactured using additives, modifiers, extenders etc., shall disclose the type of additive, percentage and any handling specifications/limitations required.

6. All AASHTO M 320 references shall be replaced with AASHTO M 332.

7. Each year, in April and September, the supplier shall submit test results for two BBR testing at two different temperatures in accordance with AASHTO R 29.

Suppliers shall provide AASHTO M 332 testing results and split samples at a minimum of once per lot.
### Volumetric Calculations of VMA and Correction Factor

**VMA\text{a} - Voids in Mineral Aggregate from (V_a + V_{be}) the mix:**

A. VMA calculated from the mix shall be determined in accordance with *Formula 5.16.1A*. It can be correlated that the VMA calculated from AASHTO R-35 is equivalent to VMA\text{a} when the Pb\text{a} x (100-Pb\text{t}) / 100 is known and substituted for Acf, as shown in *Formula 5.16.1A (ii)*. Test results from VMA\text{a} shall therefore be required to meet all contract specifications. Values of VMA\text{a} that are out of specifications during production may be cause for the contractor to determine assignable reason, take corrective action, and modify the Job Mix Formula (JMF), as needed. Continued VMA\text{a} data that is out of specifications may be cause for the Engineer to order cessation of supply.

*Formula 5.16.1A*. Determining the VMA of bituminous concrete by the mix or air voids & effective binder method:

\[
VMA_a \left(1 - \sqrt[3]{\frac{(Gmb_{d} \cdot Pb_{t} \cdot Acf)}{G_b}}\right)
\]

Where: VMA\text{a} = VMA calculated from plant production mix( V\text{a} + V\text{be})  
Gmb\text{d} = Bulk specific gravity as determined by AASHTO T 166(M)  
Pb\text{t} = Total Binder Content (corrected) by AASHTO T 308(M)  
Acf = Absorption correction factor provided by Contractor (refer to B. i and ii)

B. Determining the bituminous concrete mix binder correction factor for each class by use of percent absorption of water by AASHTO T 84/85, AASHTO M 323 and Df method. This value shall be performed by the Contractor during the mix design only and submitted as a JMF value. Two methods for determining the Acf are shown, although method (i) will be the desired method to be used. Both methods are equivalent when the Gsa, Gsb and Pwa are recent and valid for the mix.

i. \[A_{cf} \times Df \times Pwa \times (100 - Pb_{t}) / 100\]

ii. \[A_{cf} \times (Pb_{a} \text{ from annual JMF submittal }) \times (100 - Pb_{t}) / 100\]

Where: Df = as determined by *Formula 5.16.1B*.  
Pwa = as determined by AASHTO T 84/85  
Pb\text{a} = as determined by AASHTO M 323 (from annual JMF submittal)

Df (Density Factor): The Contractor shall calculate the bituminous concrete
Where:

$$D_f = \left(\frac{G_{se} - G_{sb}}{G_{sa} - G_{sb}}\right)$$

mix design $D_f$ (derived from formula X1.2 APPENDIX X1 of AASHTO R 35) for each class of material, in accordance with Formula 5.16.1B.

$D_f$ = Density Factor or multiplier determined by AASHTO R-35(M)

$G_{se}$ = Effective Specific Gravity determined by AASHTO T 84/85 of mix design

$G_{sa}$ = Apparent Specific Gravity determined by AASHTO T 84/85 of mix design

$G_{sb}$ = Bulk Specific Gravity

$D_{mix~design}$

$D_f$ (derived from formula X1.2 APPENDIX X1 of AASHTO R 35) for each class of material, in accordance with Formula 5.16.1B.
ITEM #0201001A - CLEARING AND GRUBBING

All of the provisions of Section 2.01 of the Standard Specifications shall apply as amended or supplemented by the following:

**Article 2.01.01 - Description:** Add the following:

This item shall include the removal, relocation and/or resetting of mailboxes; removal of existing roadway delineators; removal and/or resetting of fences; removal and resetting of landscape edging; removal and reinstallation of plants; new mulch where existing mulch is disturbed; protection of landscape beds, shrubs and existing trees, removal of existing trees and grinding of tree stumps all as shown on the plans or directed by the Engineer.

This item shall also include the resetting of signs as shown on the plans or directed by the Engineer. The resetting of iron pins and/or monuments disturbed by construction activities shall also be included in this item and shall be reset by a Connecticut licensed surveyor.

In addition, this item shall include the removal and disposal of existing metal beam rail as indicated on the plans or directed by the engineer.

**Article 2.01.05 - Basis for Payment:** Add the following:

All costs incidental to the work included in the “Description” section above shall be included in the lump sum price for “Clearing and Grubbing”.

<table>
<thead>
<tr>
<th>Description</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clearing and Grubbing</td>
<td>LS</td>
</tr>
</tbody>
</table>
ITEM #0219011A – SEDIMENT CONTROL SYSTEM AT CATCH BASIN

Description: This work shall consist of furnishing, installing, cleaning, maintaining, replacing, and removing sedimentation control at catch basins at the locations and as shown on the plans and as directed by the Engineer.

Materials: Sack shall be manufactured from a specially designed woven polypropylene geotextile sewn by a double needle machine, using a high strength nylon thread. Sack shall be manufactured by one of the following or an approved equal:

- Siltsack®
  SI Geosolutions:
  www.sigeosolutions.com
  (800)621-0444

- Dandy Sack™
  Dandy Products Inc.
  P.O. Box 1980
  Westerville, Ohio 43086
  Phone: 800-591-2284
  Fax: 740-881-2791
  Email: dlc@dandyproducts.com
  Website: www.dandyproducts.com

- FLeXstorm Inlet Filters
  Inlet & Pipe Protection
  24137 W. 111th St - Unit A
  Naperville, IL 60564
  Telephone: (866) 287-8655
  Fax: (630) 355-3477

The sack will be manufactured to fit the opening of the catch basin or drop inlet. Sack will have the following features: two dump straps attached at the bottom to facilitate the emptying of sack and lifting loops as an integral part of the system to be used to lift sack from the basin. The sack shall have a restraint cord approximately halfway up the sack to keep the sides away from the catch basin walls, this cord is also a visual means of indicating when the sack should be emptied. Once the strap is covered with sediment, the sack should be emptied, cleaned and placed back into the basin.

Construction Methods: Installation, removal, and maintenance shall be per manufacturer instructions and recommendations.
Method of Measurement: Sediment Control at Catch Basin will be measured as each installed, maintained, accepted, and removed. There will be no separate measurement for maintenance or replacement associated with this item.
**Basis of Payment:** Sediment Control at Catch Basin will be paid for at the contract unit price bid for each “Sediment Control System at Catch Basin”, complete in place and accepted, which price shall include all maintenance throughout construction, materials, equipment, tools, and labor incidental thereto.

<table>
<thead>
<tr>
<th>Description</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sediment Control System at Catch Basin</td>
<td>EA</td>
</tr>
</tbody>
</table>
ITEM #0403869A – COLD RECLAIMED ASPHALT PAVEMENT

Description:
Work under this Section shall consist of the in-place recycling of existing pavement and base, to the depth shown on the plans. This item shall include all earthwork including but not limited to excavation, hauling, moving, grading, and stockpiling within the project limits or at the staging and laydown area. Where necessary, final elevation of reclaimed aggregate may be adjusted (raised, lowered or modified with additional processed aggregate) to meet required design dimensions/elevations, only as ordered by the Engineer.

Materials:
Materials for reclaimed asphalt pavements shall consist of existing pavements and bases to the depth shown on the plans. When it is necessary to improve the base or raise the grade line, additional base material may be specified by the Engineer.

If it is necessary to raise or lower any utilities or underdrains, the trench backfill material will meet Section M.02.05 or have the approval of the Engineer. If a rejuvenator is used during the final mixing operation, the material used shall be approved by the Engineer.

Samples of material will be obtained by the Materials Testing Laboratory as often as deemed necessary by the Assistant Manager of Materials Testing.

Construction Methods:
Prior to the start of the pavement rehabilitation, all utilities and drainage systems shall be relocated as necessary.

Methods, equipment, tools, and any machinery to be used during construction shall be approved by the Engineer prior to the start of the Project. Prior to the actual pulverization of the pavement, drop inlets or catch basins that might be affected shall be sufficiently barricaded so as to prevent silt or runoff from plugging the drainage system.

If a rejuvenator is used, an approved metering device shall be used to ensure the accuracy of the amount of rejuvenator used.

Compaction shall be achieved by the use of a vibratory roller having the capability of producing high amplitude and low frequency vibrations. The compaction shall be a minimum of ninety-five percent (95%) of the Proctor wet density (AASHTO T-180D).

Method of Measurement:
Cold Reclaimed Asphalt Pavement shall not be measured for payment, but payment shall be at the contract lump sum price which includes all costs incidental to the work included in the “Description” section above.

Additional base material, as required, shall be processed aggregate and paid for separately.
**Basis of Payment:**

All costs incidental to the work included in the “Description” section above shall be included in the lump sum price for “Cold Reclaimed Asphalt Pavement”.

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cold Reclaimed Asphalt Pavement</td>
<td>LS</td>
</tr>
</tbody>
</table>
ITEM #0406999A – ASPHALT ADJUSTMENT COST

Description:

The Asphalt Adjustment Cost will be based on the variance in price for the performance-graded binder component of hot mix asphalt (HMA), Polymer Modified Asphalt (PMA), and Ultra-Thin Bonded Hot-Mix Asphalt mixtures completed and accepted during the Contract.

The Asphalt Price is available on the Department of Transportation website at:

http://www.ct.gov/dot/asphaltadjustment

Construction Methods:

An asphalt adjustment will be applied only if all of the following conditions are met:

I. For HMA and PMA mixtures:
   a. The HMA or PMA mixture for which the adjustment would be applied is listed as a Contract item with a pay unit of tons.
   b. The total quantity for all HMA and PMA mixtures in the Contract or individual purchase order (Department of Administrative Service contract awards) exceeds 1000 tons or the Project duration is greater than 6 months.
   c. The difference between the posted Asphalt Base Price and Asphalt Period Price varies by more than $5.00 per ton.

II. For Ultra-Thin Bonded HMA mixtures:
   a. The Ultra-Thin Bonded HMA mixture for which the adjustment would be applied is listed as a Contract item.
   b. The total quantity for Ultra-Thin Bonded HMA mixture in the Contract exceeds:
      i. 800 tons if the Ultra-Thin Bonded HMA item has a pay unit of tons.
      ii. 30,000 square yards if the Ultra-Thin Bonded HMA item has a pay unit of square yards.

      Note: The quantity of Ultra-Thin Bonded HMA measured in tons shall be determined from the material documentation requirements set forth in the Ultra-Thin Bonded HMA item Special Provision.
   c. The difference between the posted Asphalt Base Price and Asphalt Period Price varies by more than $5.00 per ton.
   d. No Asphalt Adjustment Cost will be applied to the liquid emulsion that is specified as part of the Ultra-Thin Bonded HMA mixture system.

III. Regardless of the binder used in all HMA or PMA mixtures, the Asphalt Adjustment Cost will be based on PG 64-22.
The Connecticut Department of Transportation (CTDOT) will post on its website, the average per ton selling price (asphalt price) of the performance-graded binder. The average is based on the high and low selling price published in the most recent available issue of the Asphalt Weekly Monitor® furnished by Poten & Partners, Inc. under the “East Coast Market – New England, New Haven, Connecticut area,” F.O.B. manufacturer’s terminal.

The selling price furnished from the Asphalt Weekly Monitor® is based on United States dollars per standard ton (US$/ST).

Method of Measurement:

\[
\text{Formula: } HMA \times \left[\frac{\text{PG}\%}{100}\right] \times \left[\frac{(\text{Period Price} - \text{Base Price})}{\text{Base Price}}\right] = S
\]

where

- **HMA:**
  1. For HMA, PMA, and Ultra-Thin Bonded HMA mixtures with pay units of tons: The quantity in tons of accepted HMA, PMA, or Ultra-Thin Bonded HMA mixture measured and accepted for payment.
  2. For Ultra-Thin Bonded HMA mixtures with pay units of square yards: The quantity of Ultra-Thin Bonded HMA mixture delivered, placed, and accepted for payment, calculated in tons as documented according to the Material Documentation provision (Construction Methods, paragraph G) of the Ultra-Thin Bonded HMA Special Provision.

- **Asphalt Base Price:** The asphalt price posted on the CTDOT website 28 days before the actual bid opening posted.

- **Asphalt Period Price:** The asphalt price posted on the CTDOT website during the period the HMA or PMA mixture was placed.

- **PG%:** Performance-Graded Binder percentage

1. For HMA or PMA mixes:
   - PG\% = 4.5 for HMA S1 and PMA S1
   - PG\% = 5.0 for HMA S0.5 and PMA S0.5
   - PG\% = 6.0 for HMA S0.375, PMA S0.375, HMA S0.25 and PMA S0.25

2. For Ultra-Thin Bonded HMA mixes:
   - PG\% = Design % PGB (Performance Graded Binder) in the approved job mix formula, expressed as a percentage to the tenth place (e.g. 5.1%)

The asphalt adjustment cost shall not be considered as a changed condition in the Contract as result of this provision since all bidders are notified before submission of bids.

Basis of Payment:
The "Asphalt Adjustment Cost" will be calculated using the formula indicated above. A payment will be made for an increase in costs. A deduction from monies due the Contractor will be made for a decrease in costs.
The sum of money shown on the Estimate and in the itemized proposal as "Estimated Cost" for this item will be considered the bid price although the adjustment will be made as described above. The estimated cost figure is not to be altered in any manner by the bidder. If the bidder should alter the amount shown, the altered figure will be disregarded and the original cost figure will be used to determine the amount of the bid for the Contract.

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt Adjustment Cost</td>
<td>est.</td>
</tr>
</tbody>
</table>
ITEM #0686200.4A – 4" POLYVINYL CHLORIDE PIPE - 0' - 10' DEEP
(COMPLETE)

ITEM #0686200.6A – 6" POLYVINYL CHLORIDE PIPE - 0' - 10' DEEP
(COMPLETE)

All of the provisions of Section 2.01 of the Standard Specifications and Notice to Contractor - All-Inclusive Drainage shall apply as amended or supplemented by the following:

Article 6.51.01 - Description: Add the following:

This item shall consist of furnishing and installing new pipe of the type, size and length called for on the plans at the locations and the lines and grades designated on the plans or as directed by the Engineer and in accordance with these specifications.

This item shall include all excavation, trenching, backfilling and bedding material necessary to complete the work as called for on the plans or directed by the Engineer.

This item shall include all bends, fittings, risers, existing pipe and drainage structure connections necessary to complete the work as called for on the plans or directed by the Engineer.

Article 6.51.02 – Materials: Add the following:

The material for this work shall be SDR 35 ASTM D3034.

Article 6.51.04 – Method of Measurement: Add the following:

4” Polyvinyl Chloride Pipe (Complete) and 6” Polyvinyl Chloride Pipe (Complete) shall be measured horizontally, along the center of the carrier pipe only, for payment. Bends, fittings, risers, pipe and drainage structure connections will not be measured for payment and the cost for such shall be included in the linear foot cost bid.

Article 6.51.05 - Basis for Payment: Add the following:

4” Polyvinyl Chloride Pipe (Complete) and 6” Polyvinyl Chloride Pipe (Complete) will be paid for at the Contract unit price per linear foot.

<table>
<thead>
<tr>
<th>Description</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>4” Polyvinyl Chloride Pipe (Complete)</td>
<td>LF</td>
</tr>
<tr>
<td>6” Polyvinyl Chloride Pipe (Complete)</td>
<td>LF</td>
</tr>
</tbody>
</table>
ITEM #0905002A – REBUILD STONE WALL

Description: The work under this item shall consist of removal, stockpiling, and rebuilding of existing stone walls at locations as indicated on the Contract Drawings or as directed by the Engineer. The furnishing and installation of additional stone material necessary to complete the rebuilding of the stone wall and surveying and documenting the dimensions of the existing wall is also included under this item.

Material: Conform to Article 6.07.02 of the Standard Specifications as follows: Additional stones necessary for this work shall be of suitable size, shape, color, and type to match the existing stone. All existing stone shall be reused in the reconstruction of the walls.

Geotextile shall conform to article 7.55.02 and shall be non-woven.

Pervious structure backfill shall conform to article 2.16.02 of the standard specifications.

Construction Methods: Conform to article 6.07.03 of the Standard Specifications. Form 817 as supplemented as follows: Remove, stockpile, and protect existing stones until use. The Engineer shall approve the stockpile area. Size, height, and shape shall match existing stone wall.

Method of Measurement: The work will be measured for payment by the number of linear feet of completed and accepted rebuilt stone wall.

Basis of Payment: This work shall be paid for at the contract unit price per linear foot for "Rebuild Stone Wall" which shall include all work, materials, tools, equipment and labor incidental thereto. The work shall also include removal and stockpiling of all existing stone, all new stone material, loading, delivering and unloading of unused stone at the designated location, tools, equipment, all labor, and work incidental thereto; also all necessary excavation, rebuilding wall, refilling, surveying and documenting the dimensions of the existing wall, and disposal of surplus material shall be covered under this item.

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rebuild Stone Wall</td>
<td>l.f.</td>
</tr>
</tbody>
</table>
ITEM #0950019A – TURF ESTABLISHMENT - LAWN

All of the provisions of Section 9.50 of the Standard Specifications shall apply, except as amended and/or supplemented herein:

Materials:
Revise as follows:
The materials for this work shall conform to the requirements of Section M.13 except that the Seed Mixtures in M.13.04 shall be replaced with the following Seed Mixture:

<table>
<thead>
<tr>
<th>Percent by Weight</th>
<th>Common Name</th>
<th>Scientific Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>Abbey Kentucky Bluegrass</td>
<td>Poa pratensis</td>
</tr>
<tr>
<td>15</td>
<td>Envicta Kentucky Bluegrass</td>
<td>Poa pratensis</td>
</tr>
<tr>
<td>15</td>
<td>Ambrose Chewing Fescue</td>
<td>Festuca rubra</td>
</tr>
<tr>
<td>20</td>
<td>Manhattan Ryegrass</td>
<td>Lolium perenne</td>
</tr>
<tr>
<td>25</td>
<td>Pennlawn Red Fescue</td>
<td>Festuca rubra</td>
</tr>
</tbody>
</table>

Construction Methods:
Shall conform to Section 9.50.03 of the Standard Specifications. Rate of application shall be 225 lbs per acre.

Method of Measurement:
Add the following: Payment will be made for turf establishment beyond the limits of cut and fill lines as shown on the plans if the Engineer deems the area of disturbance caused by the contractor’s operations was excessive and/or unnecessary for completion of the work. This includes turf establishment for staging, any areas where the cost for restrictions shall be included in the cost for mobilization or for various other items comprising the work.

Basis of Payment:
Shall conform to Section 9.50.04 of the Standard Specifications.

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turf Establishment – Lawn</td>
<td>S.Y.</td>
</tr>
</tbody>
</table>
ITEM #0971001A – MAINTENANCE AND PROTECTION OF TRAFFIC

Article 9.71.01 – Description is supplemented by the following:

The work shall also include furnishing, placing, maintaining, and removing all signs, construction barricades, drums, cones, and concrete barriers necessary and as shown on plans to accomplish the work per the detour plan.

BASSETT ROAD

Bassett Road may be closed while the contractor is actively working and shall be open to two-way traffic when the contractor is not working.

Emergency services shall be notified at least 14 days in advance of any road closure. The contractor shall permit emergency vehicle access through the site at all times during construction.

The Roadway Detour Plan must be implemented prior to any construction activity. The Contractor shall provide a smooth transition between all disturbed and undisturbed areas.

The contractor shall furnish and maintain sufficient signage, barriers and other devices to ensure public safety at all times.

ALL OTHER ROADWAYS

The Contractor shall maintain and protect one lane of through traffic in each direction, each lane on a paved travel path not less than 11 feet in width.

Excepted therefrom will be those periods, during the allowable periods, when the Contractor is actively working, at which time the Contractor will be allowed to maintain and protect at least an alternating one-way traffic operation on a paved travel path not less than 12 feet in width. The length of the alternating one-way traffic operation shall not exceed 300 feet.

9.71.01 - Description: Add the following:
The cost for implementation of the detour, furnishing, installing and relocating Construction Signs, Temporary Precast Concrete Barrier Curb, Drums, Cones, Construction Barricades, Barricade Warning Lights, temporary construction fencing, etc., as necessary, to safely maintain traffic operations through and around the project site shall be included in this item.

The detour plan indicated minimum signing necessary for routing of traffic. Included in the lump sum item cost for this item shall be all other signage, barricades warning devices etc. necessary to protect the public and to protect open excavations, raised structures, etc.; such items not being measured for payment.
The cost for providing the services of Trafficpersons (Uniformed Flaggers) in accordance with Section 9.70 of the Standard Specifications, as approved by the Engineer, shall be included in this item.
Water, sweeping or calcium chloride for dust control that is required as a result of temporary gravel roadways, or as directed by the Engineer, shall be included in this item.

The Contractor shall maintain and protect traffic as follows and as limited in the Special Provision "Section 1.08 - Prosecution and Progress."

**All Project Roadways**

The Contractor shall be permitted to close the project roadways when actively working in the roadway. The contractor shall implement the detour in accordance with the contract documents.

The Contractor shall maintain and protect a minimum of one lane for alternating one way traffic on a paved or compacted gravel travel path not less than 10 feet in width or as approved by the Engineer. Gravel travel path shall be compacted reclaimed material or compacted processed aggregate base. Traffic shall be maintained in accordance with the Traffic Control Plans and details. Due to corridor constraints, 10 foot wide lanes are acceptable instead of 11 foot wide lanes shown in the Traffic Control Plans and details.

During AM Peak travel periods (7:30AM to 9AM) and PM Peak travel periods (3:30PM to 5PM) the Contractor shall make all necessary accommodations for school buses and other local traffic to safely navigate the project corridor. The Contractor shall coordinate with Emergency Personnel, Schools and the Bus Companies regarding actual school bus pick-up and drop-off in the AM and PM, and also accommodate school delays and early dismissals, as necessary.

For alternating one-way traffic operations the Contractor shall flag traffic for their own purposes with assistance from the police and shall have in place appropriate signage. The length of the alternating one-way traffic operation shall not exceed 500 feet (excluding tapers) unless otherwise approved by the Engineer.

Excepted therefrom will be those periods, during the allowable periods, when the Contractor will be allowed to halt traffic for a period of time approved by the Engineer in advance.

**Driveways**

The Contractor shall maintain access to and egress from all driveways throughout the project limits unless the Contractor has first negotiated alternate arrangements with the property owners or as otherwise noted on the plans. Driveway construction shall be coordinated with the property owners. At a minimum, temporary graded surfaces shall consist of subbase, processed aggregate base, granular fill, or other suitable materials approved by the Engineer. If a temporary closure of a residential driveway is necessary, the Contractor shall coordinate with the owner to determine the time period of the closure. The cost for installation and maintenance of all such temporary access measures shall be included in the Maintenance and Protection of Traffic item.

9.71.03 - Construction Method: Add the following:
Trafficperson (Uniformed Flagger) shall be implemented in accordance with Section 9.70.03 of the Standard Specifications.
Pavement Markings
During construction, the Contractor shall maintain all pavement markings on paved surfaces on all roadways throughout the limits of the project.

Final Pavement Markings
The Contractor shall install permanent Epoxy Resin Pavement Markings in accordance with Section 12.10 entitled “Epoxy Resin Pavement Markings, Symbols, and Legends” after such time as determined by the Engineer.

Use of Traffic Drums and Traffic Cones
Traffic drums or cones shall be used to delineate open trenches, raised catch basins and other hazards.

TRAFFIC CONTROL DURING CONSTRUCTION OPERATIONS (English Version)
The following guidelines shall assist field personnel in determining when and what type of traffic control patterns to use for various situations. These guidelines shall provide for the safe and efficient movement of traffic through work zones and enhance the safety of work forces in the work area.

Traffic Control Patterns:
Traffic control patterns shall be used when a work operation requires that all or part of any vehicle or work area protrudes onto any part of a travel lane or shoulder. For each situation, the installation of traffic control devices shall be based on the following:

- Speed and volume of traffic
- Duration of operation
- Exposure to hazards

Traffic control patterns shall be uniform, neat and orderly so as to command respect from the motorist.

In the case of a horizontal or vertical sight restriction in advance of the work area, the traffic control pattern shall be extended to provide adequate sight distance for approaching traffic.

Signing
The Contractor shall maintain all existing signs throughout the project limits during the duration of the project. The Contractor shall temporarily relocate existing signs and sign supports as many times as deemed necessary and install temporary sign supports and foundations if necessary and as directed by the Engineer. The temporary relocation of any existing signs and supports, the furnishing, installation and removal of any temporary supports and foundations,
and the installation and relocation of temporary signs shall be paid for under the item "Maintenance and Protection of Traffic."

When all work is completed, the Contractor shall remove and relocate existing signs to new posts at the permanent locations, as shown on the plans, which shall be paid for under "Clearing and Grubbing."
**Signing Patterns**

The Contractor shall erect and maintain all temporary signing patterns in accordance with the traffic control plans contained herein, unless directed or approved otherwise by the Engineer. Proper distances between advance warning signs and proper taper lengths are mandatory.

These signs shall be post-mounted on breakaway sign supports or installed on portable sign supports. These signs are to remain for two weeks, after which the signs and sign supports are to be removed.

**Placement of Signs:**

Signs must be placed in such a position to allow motorists the opportunity to reduce their speed prior to the work area. Signs shall be installed on the same side of the roadway as the work area.

**TABLE I – MINIMUM TAPER LENGTHS**

<table>
<thead>
<tr>
<th>POSTED SPEED LIMIT MILES PER HOUR</th>
<th>MINIMUM TAPER LENGTH IN FEET FOR A SINGLE LANE CLOSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 OR LESS</td>
<td>180</td>
</tr>
<tr>
<td>35</td>
<td>250</td>
</tr>
<tr>
<td>40</td>
<td>320</td>
</tr>
<tr>
<td>45</td>
<td>540</td>
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<tr>
<td>50</td>
<td>600</td>
</tr>
<tr>
<td>55</td>
<td>660</td>
</tr>
<tr>
<td>65</td>
<td>780</td>
</tr>
</tbody>
</table>

**SECTION 1. WORK ZONE SAFETY MEETINGS**

1.a) Prior to the commencement of work, a work zone safety meeting will be conducted with representatives of the Town Engineer, Municipal Police, the Contractor (Project Superintendent) and the Traffic Control Subcontractor (if different than the prime Contractor) to review the traffic operations, lines of responsibility, and operating guidelines which will be used on the project. Other work zone safety meetings during the course of the project should be scheduled as needed.

1.b) A Work Zone Safety Meeting Agenda shall be developed and used at the meeting to outline the anticipated traffic control issues during the construction of this project. The agenda should include:

- Review Project scope of work and time
- Review Section 1.08, Prosecution and Progress
- Review Section 9.70, Trafficpersons
- Review Section 9.71, Maintenance and Protection of Traffic
- Review Contractor’s schedule and method of operations.
• Review areas of special concern
• Open discussion of work zone questions and issues
• Discussion of review and approval process for changes in contract requirements as they relate to work zone areas
SECTION 2. GENERAL

2.a) If the required minimum number of signs and equipment are not available; the traffic control pattern shall not be installed.

2.b) The Contractor shall have back-up equipment (signs, cones/drums, etc.) available at all times in case of mechanical failures, etc. The only exception to this is in the case of sudden equipment breakdowns in which the pattern may be installed but the Contractor must provide replacement equipment within 24 hours.

2.c) Failure of the Contractor to have the required minimum number of signs, personnel and equipment, which results in the pattern not being installed, shall not be a reason for a time extension or claim for loss time.

2.d) In cases of legitimate differences of opinion between the Contractor and the Inspection staff, the Inspection staff shall err on the side of safety. The matter shall be brought to the District Office for resolution immediately or, in the case of work after regular business hours, on the next business day.

SECTION 3. INSTALLING AND REMOVING TRAFFIC CONTROL PATTERNS

3.a) Lane Closures shall be installed beginning with the advanced warning signs and proceeding forward toward the work area.

3.b) Lane Closures shall be removed in the reverse order, beginning at the work area, or end of the traffic control pattern, and proceeding back toward the advanced warning signs.

3.c) Stopping traffic may be allowed:

   • During paving, etc. where, in the middle of the operation, it is necessary to flip the pattern to complete the operation on the other half of the roadway and traffic should not travel across the longitudinal joint or difference in roadway elevation.
   • To move slow moving equipment across live traffic lanes into the work area.

3.d) Under certain situations when the safety of the traveling public and/or that of the workers may be compromised due to conditions such as traffic volume, speed, roadside obstructions, or sight line deficiencies, as determined by the Engineer and/or Police, traffic may be briefly impeded while installing and/or removing the advanced warning signs and the first ten traffic cones/drums only. Appropriate measures shall be taken to safely slow traffic.

3.e) The Contractor must adhere to using the proper signs, placing the signs correctly, and ensuring the proper spacing of signs.
3.f) Prior to installing a pattern, any conflicting existing signs shall be covered with an opaque material. Once the pattern is removed, the existing signs shall be uncovered.
SECTION 4. USE OF TRAFFIC DRUMS AND TRAFFIC CONES

4.a) Traffic drums shall be used for taper channelization on limited-access roadways, ramps, and turning roadways and to delineate raised catch basins and other hazards.

4.b) Traffic drums shall be used in place of traffic cones in traffic control patterns that are in effect for more than a 36-hour duration.

4.c) Traffic Cones less than 42 inches in height shall not be used on limited-access roadways or on non-limited access roadways with a posted speed limit of 45 mph and above.

4.d) Typical spacing of traffic drums and/or cones shown on the Traffic Control Plans in the Contract are maximum spacings and may be reduced to meet actual field conditions as required.
NOTES FOR TRAFFIC CONTROL PLANS

1. IF A TRAFFIC STOPPAGE OCCURS IN ADVANCE OF SIGN A, THEN AN ADDITIONAL SIGN A SHALL BE INSTALLED IN ADVANCE OF THE STOPPAGE.

2. SIGNS A, A, AND D SHOULD BE OMITTED WHEN THESE SIGNS HAVE ALREADY BEEN INSTALLED TO DESIGNATE A LARGER WORK ZONE THAN THE WORK ZONE THAT IS ENCOMPASSED ON THIS PLAN.

3. SEE TABLE 1 FOR ADJUSTMENT OF TAPERS IF NECESSARY.

4. IF THIS PLAN REMAINS IN CONTINUOUS OPERATION FOR MORE THAN 36 HOURS, THEN TRAFFIC DRUMS SHALL BE USED IN PLACE OF TRAFFIC CONES.

5. ANY LEGAL SPEED LIMIT SIGNS WITHIN THE LIMITS OF A ROADWAY / LANE CLOSURE AREA SHALL BE COVERED WITH AN OPAQUE MATERIAL WHILE THE CLOSURE IS IN EFFECT, AND UNCOVERED WHEN THE ROADWAY / LANE CLOSURE IS RE-OPENED TO ALL LANES OF TRAFFIC.

6. IF THIS PLAN REMAINS IN CONTINUOUS OPERATION FOR MORE THAN 36 HOURS, THEN ANY EXISTING CONFLICTING PAVEMENT MARKINGS SHALL BE ERADICATED OR COVERED, AND TEMPORARY PAVEMENT MARKINGS THAT DELINEATE THE PROPER TRAVELPATHS SHALL BE INSTALLED.

7. DISTANCES BETWEEN SIGNS IN THE ADVANCE WARNING AREA MAY BE REDUCED TO 100' ON LOW-SPEED URBAN ROADS (SPEED LIMIT < 40 MPH).

8. IF THIS PLAN IS TO REMAIN IN OPERATION DURING THE HOURS OF DARKNESS, INSTALL BARRICADE WARNING LIGHTS - HIGH INTENSITY ON ALL POST-MOUNTED DIAMOND SIGNS IN THE ADVANCE WARNING AREA.

9. A CHANGEABLE MESSAGE SIGN SHALL BE INSTALLED ONE HALF TO ONE MILE IN ADVANCE OF THE LANE CLOSURE TAPER.

10. SIGN P SHALL BE MOUNTED A MINIMUM OF 7 FEET FROM THE PAVEMENT SURFACE TO THE BOTTOM OF THE SIGN.

TABLE 1 - MINIMUM TAPER LENGTHS

<table>
<thead>
<tr>
<th>POSTED SPEED LIMIT</th>
<th>MINIMUM TAPER LENGTH FOR A SINGLE LANE CLOSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 OR LESS</td>
<td>180' (55m)</td>
</tr>
<tr>
<td>35</td>
<td>250' (75m)</td>
</tr>
<tr>
<td>40</td>
<td>320' (100m)</td>
</tr>
<tr>
<td>45</td>
<td>540' (165m)</td>
</tr>
<tr>
<td>50</td>
<td>600' (180m)</td>
</tr>
<tr>
<td>55</td>
<td>660' (200m)</td>
</tr>
<tr>
<td>65</td>
<td>780' (240m)</td>
</tr>
</tbody>
</table>

METRIC CONVERSION CHART (1" = 25mm)

<table>
<thead>
<tr>
<th>ENGLISH</th>
<th>METRIC</th>
<th>ENGLISH</th>
<th>METRIC</th>
<th>ENGLISH</th>
</tr>
</thead>
<tbody>
<tr>
<td>12&quot;</td>
<td>300mm</td>
<td>42&quot;</td>
<td>1050mm</td>
<td>72&quot;</td>
</tr>
<tr>
<td>18&quot;</td>
<td>450mm</td>
<td>48&quot;</td>
<td>1200mm</td>
<td>78&quot;</td>
</tr>
<tr>
<td>24&quot;</td>
<td>600mm</td>
<td>54&quot;</td>
<td>1350mm</td>
<td>84&quot;</td>
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<td>30&quot;</td>
<td>750mm</td>
<td>60&quot;</td>
<td>1500mm</td>
<td>90&quot;</td>
</tr>
<tr>
<td>36&quot;</td>
<td>900mm</td>
<td>66&quot;</td>
<td>1650mm</td>
<td>96&quot;</td>
</tr>
</tbody>
</table>

CONSTRUCTION TRAFFIC CONTROL PLAN

NOTES

CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

APPROVED 2012-06-26 1550-35-04/20
PRINCIPAL ENGINEER

Bassett Road
Reconstruction

TS-
WORK IN TRAVEL LANE AND SHOULDER
TWO LANE HIGHWAY
ALTERNATING ONE-WAY TRAFFIC OPERATIONS

HAND SIGNAL METHODS TO BE USED BY UNIFORMED FLAGGERS

THE FOLLOWING METHODS FROM SECTION 6B.07, FLAGGER PROCEDURES, IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES," SHALL BE USED BY UNIFORMED FLAGGERS WHEN DIRECTING TRAFFIC THROUGH A WORK AREA. THE STOP/SLOW SIGN PADDLE (SIGN NO. 80-9950) SHOWN ON THE TRAFFIC STANDARD SHEET TR-1220 01 ENTITLED, "SIGNS FOR CONSTRUCTION AND PERMIT OPERATIONS" SHALL BE USED.

A. TO STOP TRAFFIC

TO STOP ROAD USERS, THE FLAGGER SHALL FACE ROAD USERS AND AIM THE STOP PADDLE FACE TOWARD ROAD USERS IN A STATIONARY POSITION WITH THE ARM EXTENDED HORIZONTALLY AWAY FROM THE BODY. THE FREE ARM SHALL BE HELD WITH THE PALM OF THE HAND ABOVE SHOULDER LEVEL TOWARD APPEARING TRAFFIC.

B. TO DIRECT TRAFFIC TO PROCEED

TO DIRECT STOPPED ROAD USERS TO PROCEED, THE FLAGGER SHALL FACE ROAD USERS WITH THE SLOW PADDLE FACE AIMED TOWARD ROAD USERS IN A STATIONARY POSITION WITH THE ARM EXTENDED HORIZONTALLY AWAY FROM THE BODY. THE FLAGGER SHALL MOTION WITH THE FREE HAND FOR ROAD USERS TO PROCEED.

C. TO ALERT OR SLOW TRAFFIC

TO ALERT OR SLOW TRAFFIC, THE FLAGGER SHALL FACE ROAD USERS WITH THE SLOW PADDLE FACE AIMED TOWARD ROAD USERS IN A STATIONARY POSITION WITH THE ARM EXTENDED HORIZONTALLY AWAY FROM THE BODY. TO FURTHER ALERT OR SLOW TRAFFIC, THE FLAGGER HOLDING THE SLOW PADDLE FACE TOWARD ROAD USERS MAY MOTION UP AND DOWN WITH THE FREE HAND, PALM DOWN.
Article 9.71.05 – Basis of Payment is supplemented by the following:

9.71.05 – Basis of Payment: Add the following:
The contract lump sum price for "Maintenance and Protection of Traffic" shall also include furnishing, installing, and removing the material for the temporary traversable slope in those areas where a longitudinal dropdown exists.

If there is no method for payment for the temporary transition in those areas where a transverse dropdown exists, then the contract lump sum price for the "Maintenance and Protection of Traffic" shall also include furnishing, installing, and removing the material for the temporary transition.

The contract lump sum price for "Maintenance and Protection of Traffic" shall also include temporarily relocating existing signs and sign supports as many times as deemed necessary and furnishing, installing, and removing temporary sign supports and foundations if necessary during construction of the project.

The contract lump sum price for "Maintenance and Protection of Traffic" shall also include any temporary adjustments or modifications required to the permanent drainage structures, including but not limited to the resetting of catch basin and manhole tops as necessary, to facilitate temporary drainage measures prior to final paving.

The contract lump sum price for "Maintenance and Protection of Traffic" shall also include the cost for installation and maintenance of all temporary access to all residential properties, including but not limited to temporary graded surfaces consisting of subbase, processed aggregate base, granular fill, or other suitable materials approved by the Engineer.

The contract lump sum price for “Maintenance and Protection of Traffic” shall also include furnishing, installing and relocating Construction Signs, Temporary Precast Concrete Barrier Curb, Traffic Drums, Traffic Cones, Construction Barricades, Barricade Warning Lights, temporary construction fencing, and all other additional materials, means and methods to maintain public safety. All temporary traffic control items shall comply with the requirements of the Standard Specifications.

The contract lump sum price for “Maintenance and Protection of Traffic” shall also include Trafficperson (Uniformed Flagger). Trafficperson (Uniformed Flagger) will not be measured for payment.

The contract lump sum price for “Maintenance and Protection of Traffic” shall also include water, sweeping and calcium chloride for dust control that is required as a result of temporary gravel roadways or as directed by the Engineer.

The contract lump sum price for "Maintenance and Protection of Traffic" shall also include the cost for installation, maintenance and removal of all temporary pavement markings, as required by the specifications, throughout the duration of the project.

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintenance and Protection of Traffic</td>
<td>LS</td>
</tr>
</tbody>
</table>
ITEM NO. 1206023A - REMOVAL AND RELOCATION OF EXISTING SIGNS

Section 12.06 is supplemented as follows:

Article 12.06.01 – Description is supplemented with the following:
Work under this item shall consist of the removal and/or relocation of designated side-mounted extruded aluminum and sheet aluminum signs, sign posts, sign supports, and foundations where indicated on the plans or as directed by the Engineer. Work under this item shall also include furnishing and installing new sign posts and associated hardware for signs designated for relocation.

Article 12.06.03 – Construction Methods is supplemented with the following:
The Contractor shall take care during the removal and relocation of existing signs, sign posts, and sign supports that are to be relocated so that they are not damaged. Any material that is damaged shall be replaced by the Contractor at no cost to the State.

Foundations and other materials designated for removal shall be removed and disposed of by the Contractor as directed by the Engineer and in accordance with existing standards for Removal of Existing Signing.

Sheet aluminum signs designated for relocation are to be re-installed on new sign posts only where indicated on the plans.

Article 12.06.04 – Method of Measurement is supplemented with the following:
Payment under Removal and Relocation of Existing Signs shall be at the contract lump sum price which shall include all extruded aluminum and sheet aluminum signs, sign posts, and sign supports designated for relocation, all new sign posts and associated hardware for signs designated for relocation, all extruded aluminum signs, sheet aluminum signs, sign posts and sign supports designated for scrap, and foundations and other materials designated for removal and disposal, and all work and equipment required.

Article 12.06.05 – Basis of Payment is supplemented with the following:
This work will be paid for at the contract lump sum price for “Removal and Relocation of Existing Signs” which price shall include relocating designated extruded aluminum and sheet aluminum signs, sign posts, and sign supports, providing new posts and associated hardware for relocated signs, removing and disposing of foundations and other materials, and all equipment, material, tools and labor incidental thereto. This price shall also include removing, loading, transporting, and unloading of extruded aluminum signs, sheet aluminum signs, sign posts, and sign supports designated for scrap and all equipment, material, tools and labor incidental thereto.

<table>
<thead>
<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Removal and Relocation of Existing Signs</td>
<td>L.S.</td>
</tr>
</tbody>
</table>
PERMITS
Sent by certified mail

March 20, 2020

Roy Cavanaugh, Director
Department of Public Works
61 Echo Lake Road
Watertown Connecticut
06795

Re: Application #2020-3 of Town of Watertown Department of Public Works for reconstruction of Bassett Road, Watertown.

Dear Mr. Cavanaugh:

Pursuant to Section 12.1 of the Inland Wetlands and Watercourses Regulations of the Town of Watertown Connecticut your application to conduct regulated activities associated with the reconstruction of a section of Bassett Road, Watertown, CT has been approved subject to conditions.

Legal Notice of Approval will appear in the Town Times on March 26, 2020. Your permit is enclosed. Please feel free to contact me if you have any questions concerning this permit.

Sincerely,

Wetland Enforcement Officer

Cc: Anthony Ciriello, Jr.
Conservation Commission/Inland Wetland Agency Permit
#2020-3 For Reconstruction of Bassett Road, Watertown, Connecticut

This approval permit refers to your application to conduct regulated activities in the Town of Watertown.

Pursuant to Section 12.1 of the Inland Wetlands and Watercourses Regulations of the Town of Watertown the Wetland Enforcement Officer (Duly Authorized Agent) has considered application #2020-3 with due regard for the Inland Wetland and Watercourses Regulations of the Town of Watertown. The Duly Authorized Agent has found that the proposed activities as shown on a site plan entitled "Bassett Road Reconstruction Watertown, Connecticut MMI Project No. 1452-17 Final Design Plans February 7, 2020 Sheets 01-31 prepared by Milone & MacBroom" as specified and conditioned below conform to the purpose and provision of said section.

The regulated activities consist of the following:

1. Disturbance of approximately 8,300 Sq. Ft of upland review area by reconstruction of Bassett Road.

2. Installation of erosion and sediment control measures within regulated areas.

The permit is issued subject to the following conditions and/or modifications:

1. The permittee shall notify Wetlands Enforcement Officer, in writing at least three business days prior to the commencement of work onsite and upon its completion.

2. If the approved activities are not initiated on or before March 20, 2025, said activities shall cease and, if not previously revoked or specifically renewed or extended, this permit shall be null and void. Any request to renew or extend the expiration date of a permit should be filed in accordance with Section 11 of the Inland Wetlands and Watercourses Regulations of the Town of Watertown. Expired permits may not be renewed and the wetland agency may require a new application for regulated activities.

3. All work and all regulated activities conducted pursuant to this approval shall be consistent with the terms and conditions of this permit. Any structures,
excavation, fill, obstructions, encroachment, or regulated activities not
specifically identified and approved herein shall constitute a violation of this permit and may result in its modification, suspension, or revocation.

4. This permit is not transferable without the written consent of the Conservation Commission/Inland Wetland Agency.

5. In evaluating this application, the wetland agency has relied on information provided by the applicant. If such information is subsequently proved to be false, incomplete, or misleading, this permit may be modified, suspended, or revoked and the permittee may be subject to any other remedies or penalties provided by law.

6. No equipment or material including without limitation fill, construction materials, or debris, shall be deposited, placed or stored in any wetland or watercourse and upland review area on or off site unless specifically approved by this permit.

7. This permit is subject to and does not derogate any rights or powers of the Town of Watertown, conveys no property rights or exclusive privileges, and is subject to all public and private rights and to all applicable federal, state and local laws. In conducting and maintaining any activities approved herein, the permittee may not cause pollution, impairment, or destruction of the inland wetlands and watercourses of the Town of Watertown.

8. If the activity approved by the inland wetlands permit also involves activity or a project that requires State DEEP, zoning approval, special permit, variance, or special exception, no work pursuant to the wetlands permit may begin until such approval is obtained.

9. The permittee shall install and maintain erosion and sediment control measures at the site. in such an operable condition as to prevent the pollution of wetlands and watercourses. Said controls are to be inspected by the permittee for deficiencies at least once per week and immediately after rains. The permittee shall correct any such deficiencies within 24 hours of said deficiency being found.

This authorization constitutes the permit required by Section 22a-42 of the Connecticut General Statute, as amended.
PLEASE

IT IS A REQUIREMENT OF THIS BID THAT EACH PROPOSAL SUBMITTED MUST HAVE A DUPLICATE COPY ATTACHED.

YOUR COOPERATION IS APPRECIATED
TOWN OF WATERTOWN
WATERTOWN, CONNECTICUT 06795

BID PROPOSAL

Bassett Road Reconstruction
Watertown Public Works Department

BID OPENING: 11:00 a.m., Thursday, May 21st, 2020

TO: Jason Warner, Purchasing Agent
    Town of Watertown
    Town Hall Annex
    424 Main Street
    Watertown, CT 06795

The undersigned, as bidder, agrees to furnish all labor, equipment and materials as specified and declares that no person or persons, other than those named herein, are interested in this Proposal; that this Proposal is made without collusion with any person, firm, or corporation; that he has carefully examined the location of the proposed work herein referred to; that no person or persons acting in any official capacity for the Town is directly or indirectly interested therein or in any portion of the profit thereof; and that he proposes and agrees, if this Proposal is accepted, to provide all necessary equipment, tools, labor and deliver and to do all work and furnish all materials specified in the manner and time therein prescribed, and according to the requirements of the Town as therein set forth, and that he will take in full payment therefor, the following unit prices and lump sums, to wit:

FIRM ________________________________________________

                                Name

                                Street

                                City                State                Zip Code

NAME ________________________________________________

Please Print

TELEPHONE NUMBER ________________________________________________

FAX NUMBER ________________________________________________

EMAIL ADDRESS ________________________________________________

SIGNED __________________________________ DATE ________________
UNIT ADJUSTMENT PRICES

The following unit prices will be used to adjust the construction cost to compensate for modifications to the Work indicated by revisions to the Contract Documents. It is understood that these unit prices will be used for either deletions from or additions to the lump sum price. Each unit adjustment price shall include all costs (directs, indirects, overhead, and profit) for furnishing and installing the unit complete and shall apply only to the specific material designated. Unit adjustment prices are intended for use on items to be constructed in conjunction with this project only. This work shall be constructed complete, including restoration and per the Construction Details. Prices shall be held regardless of actual quantity. Prices shall be held for the duration of the contract (3 years).

1. Processed Aggregate Base \(^{(1)}\)  $______________/CY

\(^{(1)}\) Processed Aggregate Base shall be imported and placed in accordance with CTDOT Form 817 where directed by the Engineer to replace unsuitable material. The quantity to be imported shall be approved by the Owner and Engineer prior to import. Included in this Unit Adjustment Price shall be all work to excavate, remove and dispose of unsuitable soils material and replacing with compacted processed aggregate base. Processed aggregate base shall meet all requirements set forth in Form 817 and the Materials section for crusher run material.
The Contractor shall provide unit prices for the following items which may be associated with the **Base Bid**.

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>DESCRIPTION AND UNIT COST</th>
<th>ESTIMATED QUANTITY</th>
<th>TOTAL COST ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0202000</td>
<td>EARTH EXCAVATION at________dollars and________cents per lump sum.</td>
<td>1 l.s.</td>
<td></td>
</tr>
<tr>
<td>0202100</td>
<td>ROCK EXCAVATION at________dollars and________cents per lump sum.</td>
<td>1 l.s.</td>
<td></td>
</tr>
<tr>
<td>0202529</td>
<td>CUT BITUMINOUS CONCRETE PAVEMENT at________dollars and________cents per linear foot.</td>
<td>80 l.f.</td>
<td></td>
</tr>
<tr>
<td>0202531</td>
<td>REMOVAL OF BITUMINOUS CONCRETE at________dollars and________cents per square yard.</td>
<td>350 s.y.</td>
<td></td>
</tr>
<tr>
<td>0209001</td>
<td>FORMATION OF SUBGRADE at________dollars and________cents per square yard.</td>
<td>3550 s.y.</td>
<td></td>
</tr>
<tr>
<td>0212000</td>
<td>SUBBASE at________dollars and________cents per cubic yard.</td>
<td>160 c.y.</td>
<td></td>
</tr>
<tr>
<td>0213100</td>
<td>GRANULAR FILL at________dollars and________cents per cubic yard.</td>
<td>30 c.y.</td>
<td></td>
</tr>
<tr>
<td>0219001</td>
<td>SEDIMENTATION CONTROL SYSTEM at________dollars and________cents per linear foot.</td>
<td>400 l.f.</td>
<td></td>
</tr>
<tr>
<td>0219011</td>
<td>SEDIMENTATION CONTROL SYSTEM AT CATCH BASIN at________dollars and________cents each.</td>
<td>11 ea.</td>
<td></td>
</tr>
<tr>
<td>0286001.1</td>
<td>ROCK IN DRAINAGE TRENCH EXCAVATION 0'-10' DEEP at________dollars and________cents per cubic yard.</td>
<td>5 c.y.</td>
<td></td>
</tr>
<tr>
<td>0403869</td>
<td>COLD RECLAIMED ASPHALT PAVEMENT at________dollars and________cents per lump sum.</td>
<td>1 l.s.</td>
<td></td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Quantity</td>
<td>Unit</td>
</tr>
<tr>
<td>----------</td>
<td>-----------------------------------------------------------------------------</td>
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<td>------------</td>
</tr>
<tr>
<td>0406010-1</td>
<td>BITUMINOUS CONCRETE, CLASS 1 at dollars and cents per ton.</td>
<td>470</td>
<td>ton</td>
</tr>
<tr>
<td>0406010-2</td>
<td>BITUMINOUS CONCRETE, CLASS 2 at dollars and cents per ton.</td>
<td>470</td>
<td>ton</td>
</tr>
<tr>
<td>0406236</td>
<td>MATERIAL FOR TACK COAT at dollars and cents per gallon.</td>
<td>430</td>
<td>gal</td>
</tr>
<tr>
<td>0406999</td>
<td>ASPHALT ADJUSTMENT COST at dollars and cents per estimate.</td>
<td>1</td>
<td>est.</td>
</tr>
<tr>
<td>0586001.1</td>
<td>TYPE 'C' CATCH BASIN - 0' - 10' DEEP (COMPLETE) at dollars and cents per each.</td>
<td>10</td>
<td>ea.</td>
</tr>
<tr>
<td>0586790.1</td>
<td>REMOVE DRAINAGE STRUCTURE - 0' - 10' DEEP (COMPLETE) at dollars and cents per each.</td>
<td>1</td>
<td>ea.</td>
</tr>
<tr>
<td>0652009</td>
<td>12&quot; R.C. CULVERT END at dollars and cents per each.</td>
<td>1</td>
<td>ea.</td>
</tr>
<tr>
<td>0652010</td>
<td>15&quot; R.C. CULVERT END at dollars and cents per each.</td>
<td>1</td>
<td>ea.</td>
</tr>
<tr>
<td>0686000.12</td>
<td>12&quot; R.C. PIPE - 0' - 10' DEEP (COMPLETE) at dollars and cents per linear foot.</td>
<td>250</td>
<td>l.f.</td>
</tr>
<tr>
<td>0686000.15</td>
<td>15&quot; R.C. PIPE - 0' - 10' DEEP (COMPLETE) at dollars and cents per linear foot.</td>
<td>560</td>
<td>l.f.</td>
</tr>
<tr>
<td>0686200.4</td>
<td>4&quot; POLYVINYL CHLORIDE PIPE - 0' - 10' DEEP (COMPLETE) at dollars and cents per linear foot.</td>
<td>275</td>
<td>l.f.</td>
</tr>
<tr>
<td>0686200.6</td>
<td>6&quot; POLYVINYL CHLORIDE PIPE - 0' - 10' DEEP (COMPLETE) at dollars and cents per linear foot.</td>
<td>50</td>
<td>l.f.</td>
</tr>
<tr>
<td>0686950.1</td>
<td>REMOVE EXISTING PIPE - 0' - 10' DEEP (COMPLETE) at dollars and cents per linear foot.</td>
<td>150</td>
<td>l.f.</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Units</td>
<td>Quantity</td>
</tr>
<tr>
<td>----------</td>
<td>--------------------------------------------------------------------</td>
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</tr>
<tr>
<td>0703012</td>
<td>MODIFIED RIPRAP at dollars and cents per cubic yard.</td>
<td>60 c.y.</td>
<td></td>
</tr>
<tr>
<td>0751711</td>
<td>6&quot; UNDERDRAIN (IN STORM TRENCH) at dollars and cents per linear foot.</td>
<td>420 l.f.</td>
<td></td>
</tr>
<tr>
<td>0755009</td>
<td>GEOTEXTILE at dollars and cents per square yard.</td>
<td>180 s.y.</td>
<td></td>
</tr>
<tr>
<td>0815001</td>
<td>BITUMINOUS CONCRETE LIP CURBING at dollars and cents per linear foot.</td>
<td>1750 l.f.</td>
<td></td>
</tr>
<tr>
<td>0905002</td>
<td>REBUILD STONE WALL at dollars and cents per linear foot.</td>
<td>80 l.f.</td>
<td></td>
</tr>
<tr>
<td>0910170</td>
<td>METAL BEAM RAIL (TYPE R-B 350) at dollars and cents per lump sum.</td>
<td>1 l.s.</td>
<td></td>
</tr>
<tr>
<td>0922501</td>
<td>BITUMINOUS CONCRETE DRIVEWAY at dollars and cents per square yard.</td>
<td>300 s.y.</td>
<td></td>
</tr>
<tr>
<td>0944000</td>
<td>FURNISHING AND PLACING TOPSOIL at dollars and cents per square yard.</td>
<td>3000 s.y.</td>
<td></td>
</tr>
<tr>
<td>0950019</td>
<td>TURF ESTABLISHMENT - LAWN at dollars and cents per square yard.</td>
<td>3000 s.y.</td>
<td></td>
</tr>
<tr>
<td>0970006</td>
<td>TRAFFICPERSON (MUNICIPAL POLICE OFFICER) at dollars and cents per estimate.</td>
<td>1 est.</td>
<td></td>
</tr>
<tr>
<td>1206023</td>
<td>REMOVAL AND RELOCATION OF EXISTING SIGNS at dollars and cents per lump sum.</td>
<td>1 l.s.</td>
<td></td>
</tr>
<tr>
<td>1210102</td>
<td>4&quot; YELLOW EPOXY RESIN PAVEMENT MARKINGS at dollars and cents per linear foot.</td>
<td>3200 l.f.</td>
<td></td>
</tr>
<tr>
<td>0201001</td>
<td>CLEARING AND GRUBBING at dollars and cents per lump sum.</td>
<td>1 l.s.</td>
<td></td>
</tr>
<tr>
<td>0971001</td>
<td>MAINTENANCE AND PROTECTION OF TRAFFIC at dollars and cents per linear foot.</td>
<td>1 l.s.</td>
<td></td>
</tr>
<tr>
<td>0975004</td>
<td>MOBILIZATION AND PROJECT CLOSEOUT</td>
<td>1</td>
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<td></td>
<td>at ___________________________ dollars and ___________________________</td>
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<tr>
<th>0980001</th>
<th>CONSTRUCTION STAKING at</th>
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<tr>
<td></td>
<td>___________________________ dollars and ___________________________ cents</td>
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<td></td>
<td>per lump sum.</td>
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TOTAL OF ALL PROJECT BASE BID ITEMS: $______________________________

WRITTEN______________________________ DOLLARS

AND______________________________ CENTS

Contractor's Name____________________ Title____________________ Date____________

Signature________________________ Phone No._____________________ E-mail__________________

Have you taken any exceptions or have you deviated from our printed specification and if so, are such suggested changes clearly noted on the page provided for exceptions to specifications?

___ yes

___ no
EXCEPTIONS TAKEN TO SPECIFICATIONS:

______________________________________________________________________________

______________________________________________________________________________

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# RECEIPT OF ADDENDA

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NAME OF BIDDER: ____________________________________________________________

OFFICIAL ADDRESS: ______________________________________________________

PHONE NUMBER: ______________________________________________________

BY: ___________________________ TITLE: __________________________
    (Please Print)

DATE:________________________________________________________

SIGNATURE:________________________________________________________________
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TYPE OF WORK TO BE PERFORMED


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Please Print

TYPE OF WORK TO BE PERFORMED


REFERENCES
Please list a minimum of three references of similar work performed within the last three years.

FIRM __________________________

Name

__________________________

Street

________________________________________________________________________

City State Zip Code

CONTACT ______________________ TELEPHONE ______________________

Please Print

TYPE OF WORK TO BE PERFORMED ________________________________

____________________________________________________________________________

FIRM __________________________

Name

__________________________

Street

________________________________________________________________________

City State Zip Code

CONTACT ______________________ TELEPHONE ______________________

Please Print

TYPE OF WORK TO BE PERFORMED ________________________________

____________________________________________________________________________

FIRM __________________________

Name

__________________________

Street

________________________________________________________________________

City State Zip Code

CONTACT ______________________ TELEPHONE ______________________

Please Print

TYPE OF WORK TO BE PERFORMED ________________________________

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