TABLE OF CONTENTS OF SPECIAL PROVISIONS

Note: This Table of Contents has been prepared for the convenience of those using this contract with the sole express purpose of locating quickly the information contained herein; and no claims shall arise due to omissions, additions, deletions, etc., as this Table of Contents shall not be considered part of the contract.

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October 17, 2012
FEDERAL AID PROJECT NO. N/A
STATE PROJECT NO. 172-407

Rehabilitation of Salt Sheds

Towns of Preston, Putnam and Thompson
Federal Aid Project No. N/A

The State of Connecticut, Department of Transportation, Standard Specifications for Roads, Bridges and Incidental Construction, Form 816, 2004, as revised by the Supplemental Specifications dated July 2012 (otherwise referred to collectively as "ConnDOT Form 816") is hereby made part of this contract, as modified by the Special Provisions contained herein. . The State of Connecticut Department of Transportation's "Construction Contract Bidding and Award Manual" ("Manual"), May 14, 2010 edition or latest issue, is hereby made part of this contract. If the provisions of this Manual conflict with provisions of other Department documents (not including statutes or regulations), the provisions of the Manual will govern. The Manual is available upon request from the Transportation Manager of Contracts. The Special Provisions relate in particular to the Rehabilitation of Salt Sheds in the Towns of Preston, Putnam and Thompson.

CONTRACT TIME AND LIQUIDATED DAMAGES

Two Hundred Nineteen (219) calendar days will be allowed for completion of the work on this project and the liquidated damages charge to apply will be One Thousand Seven Hundred Dollars ($1,700.00) per calendar day.

NOTICE TO CONTRACTOR – BIDDER'S QUESTIONS

The Contractor is hereby notified that during the bidding period, bidder's questions shall be submitted by the Contractor in writing to the Transportation Manager of Contracts for the State of Connecticut Department of Transportation, according to the State of Connecticut "Construction Contract Bidding and Award Manual". Questions shall be E-mailed to the attention of the Manager of Contracts at DOTContracts@ct.gov, faxed questions will no longer be accepted.

The Department cannot ensure a response to inquiries received later than ten (10) days prior to the original scheduled opening of the related bid. ConnDOT will issue an addendum addressing all questions that are made part of the bidding documents.

Refer to Article 1.02.04 of the Standard Specifications for additional information.

NOTICE TO CONTRACTOR – STANDARD SPECIFICATIONS

Whenever and wherever "ConnDOT Form 816," "Form 816," "Standard Specifications" are referenced herein, this shall mean and refer to "State of Connecticut, Department of Transportation, Standard Specifications for Roads, Bridges, and Incidental Construction, Form 816", including the Supplemental Specifications.

NOTICE TO CONTRACTOR – GENERAL REQUIREMENTS AND COVENANTS OF THE CONTRACT

Division I of the document entitled "State of Connecticut, Department of Transportation, Standard Specifications for Roads, Bridges, and Incidental Construction, Form 816, 2004," including the Division I Supplemental Specifications, shall collectively be known as the "General Requirements and Covenants of the Contract."

The Contractor is hereby advised of the potential for conflicts between provisions contained within Section 1.20 of the Form 816 with other Division I Sections of the Form 816. Where the aforementioned conflicts occur, Section 1.20 shall govern.

NOTICE TO CONTRACTOR – MEASUREMENT AND PAYMENT

This Project is being bid with both lump sum and unit price items. The bid items include unit price and lump sum items which are IN ADDITION TO the Major Lump Sum Item (MLSI) of the Project, Item No. 0177150A titled "General Building Renovation." These separate items will be measured for payment on a unit price or lump sum basis (whichever is applicable) for which a separate bid price is required, at the quantities as indicated in the Bid Proposal Form. Each item to be measured is more specifically described in a corresponding Form 816 Standard Specification related to that item, or a special provision, as applicable.

Standard Form 816 Items are referenced by their standard item numbers. Refer to the applicable article of Form 816 for the requirements for this item. Special Provisions included in this Contract are referenced by their item number followed by an "A" suffix. Refer to the Special Provisions contained within this Contract for requirements for this item.

All work depicted on the Contract Plans and described in the Contract Specifications, including mobilization, is included in the MLSI of the Project, with the exception of the unit price or other lump sum items listed in the Bid Proposal Form. Any work incidental to an item which is not specifically described or included in the item, but which is required for performance and completion of the work required under the Contract, is included in the MLSI.

NOTICE TO CONTRACTOR – NOTICE OF INTENT TO CONSTRUCT

The Contractor is hereby advised that a Notice of Intent to Construct (NOIC) will be issued as the Building Permit for this Project in accordance with CGS. The Contractor will not be required to apply for a Building Permit from the local Building Official.

NOTICE TO CONTRACTOR – POTENTIAL FOR ASBESTOS CONTAINING MATERIALS

The Contractor is hereby advised that it is the expressed intent of the Department that no materials containing asbestos of any kind or amount be installed in Department facilities as a result of any work being performed under this Contract.

For all materials that have a probability of containing asbestos, the Contractor shall provide a certification letter on the manufacturer's letterhead along with the regular submittal package to prove that asbestos is not contained in the materials. These materials will not be approved without the required manufacturer certification letter. The manufacturer certification letter shall be formatted in the following manner:

[Addressed to:] Commissioner of Transportation
Department of Transportation
P.O. Box 317546
Newington, Connecticut 06131-7546

Project Title and Number

[We] hereby certify that all materials manufactured by [Insert Manufacturer Name] are asbestos-free.

[Signature:] [Name of authorized signatory]
[Title]

The Contractor shall submit manufacturer certification letters for all materials specified in the following Contract provisions (including CSI-formatted specifications contained within a particular special provision):

1. Division 07 Section 075419, "Polyvinyl-Chloride (PVC) Roofing."
2. Division 07 Section 079200, "Joint Sealants."

The above list may not be all-inclusive and does not relieve the Contractor from its responsibility to provide manufacturer certification letters that are required under other Contract provisions. Furthermore, the Department may at any time require the Contractor to submit manufacturer certification letters proving that other materials do not contain asbestos.

Failure of the Contractor to provide the required documentation will result in the immediate removal of the material from the Project by the Contractor at its expense. The Contractor shall be responsible for all costs incurred as a result of such required action, and replacements thereof, in order to complete the Project.

Any asbestos containing material that is found to have been installed as a result of work performed under this Contract will be required to be removed by the Contractor at its expense as soon as such determination is made. The Contractor shall also replace the removed material with appropriate material that is in compliance with the Contract. The Contractor is also responsible to pay for any asbestos testing charges the Department incurred in order to prove that the material contains asbestos fibers. This obligation will extend throughout the one-year warranty period after the issuance of the Certificate of Compliance.

The Contractor shall complete and sign the attached certification form assuring the Department that no asbestos-containing materials have been used in the construction of this Project. This form shall be submitted prior to the Semi-Final Inspection. The Certificate of Compliance will not be issued without this completed and signed certification form.

CONTRACTOR CERTIFICATION:
RE/ ASBESTOS CONTENT OF MATERIALS

State of Connecticut
Department of Transportation
PO Box 317546
Newington, CT 06131-7546

1. Project Number: _____

2. Project Name: _____

3. Contractor Name: _____

4. This is to certify that I have read, understood, and complied with the terms and conditions identified under the "NOTICE TO CONTRACTOR – POTENTIAL FOR ASBESTOS CONTAINING MATERIALS" included in this Contract.

   I fully understand that it is the requirement of the Connecticut Department of Transportation that only materials that do not contain asbestos of any kind or amount are to be utilized in the construction of this Project.

   I therefore certify that, to the best of my knowledge, all materials installed under this Contract are asbestos-free.

   For the one-year warranty period after the issuance of the Certificate of Compliance, I agree to remove any asbestos-containing material identified by the Connecticut Department of Transportation and reinstall an approved, non-asbestos-containing material that is in compliance with the original Contract at no additional cost to the State.

5. Date of Certificate of Compliance: _____

6. Date of the Asbestos Certification: _____

7. Signature of Authorized Party Agreeing to the Terms & Conditions Identified Herein & as Further Stated in the Contract:

_____	_____
Signature	Title
_____	_____
Printed Name	Date

NOTICE TO CONTRACTOR – PROJECT DESCRIPTION

The Project consists of the rehabilitation of three existing salt sheds located as shown on Contract Plans Title Sheet 2 and as described in the Contract.

The work includes selective demolition including the removal of the existing roof and personnel door, the installation of PVC roofing, joint sealants, wooden louvers, and exterior painting and coatings.

NOTICE TO CONTRACTOR – LIMITATION OF CONTRACTOR OPERATIONS

The Contractor shall repair at its own expense any and all damage caused by construction operations to existing buildings unless said damage is scheduled as part of the Project work. The Contractor shall take all precautions necessary to protect the buildings during the construction period.

The Contractor is hereby advised that the Department will empty the salt sheds of all sand/salt after the 2012-2013 Winter Storm Season. The Contractor will have access to the inside of the salt sheds from the "Notice to Proceed" until August 31, 2013 to perform all Contract work that must be performed from the inside. On September 1, 2013 the Department may begin to fill the salt sheds in anticipation of the 2013-2014 Winter Storm Season.

The Contractor shall bid the Project accordingly.

NOTICE TO CONTRACTOR – ENGINEER OCCUPANCY

The Engineer and the Department personnel will occupy the Project Site during the entire construction period.

The Engineer reserves the right to occupy and to place and install equipment in completed areas of the Facility, prior to Final Inspection and the issuance of the Certificate of Compliance provided that such occupancy does not interfere with completion of the Project. Such placing of equipment and partial occupancy shall not constitute acceptance of the total Project. The Contractor shall allow and cooperate with such occupancy at no additional cost to the State.

1. The Engineer shall obtain from the Contractor written approval of such occupancy. The Engineer shall determine whether such occupancy or use is possible and, if so, will make arrangements for holding a job inspection with representatives of the Department and the Contractor.
2. Based on the inspection, a "Punch List" of outstanding or unacceptable work shall be developed.
3. The Contractor shall prepare a letter to the Engineer granting occupancy. The letter granting such occupancy shall state the terms and conditions of occupancy and include the status of completion of "Punch List" items.
4. Subsequent to the receipt of the letter granting occupancy, the Engineer shall notify the Contractor in writing that fire insurance coverage has been requested, and the effective date the Contractor may cancel the fire insurance coverage normally carried on the building by it.
5. Prior to partial Engineer occupancy, mechanical and electrical systems shall be fully operational. Required inspections and tests shall have been successfully completed. Upon occupancy the Engineer will provide operation and maintenance of mechanical and electrical systems in occupied portions of the building.

NOTICE TO CONTRACTOR – SUBMITTALS

Transmittal of Submittals: Unless otherwise stipulated, all submittals requiring review for conformance with the Contract shall be transmitted by letter and hand delivered or sent by mail directly to Mr. Theodore H. Nezames, P.E., Transportation Principal Engineer, Facilities Design, Bureau of Engineering and Construction, Connecticut Department of Transportation, 2800 Berlin Turnpike, P.O. Box 317546, Newington, CT 06131-7546, Room 3405.

Copies of the transmittal letter shall be sent to the Office of Property and Facilities Services, Bureau of Finance and Administration, Connecticut Department of Transportation, 2800 Berlin review for conformance with the Contract shall be transmitted by letter and hand delivered or Turnpike, P.O. Box 317546, Newington, CT 06131-7546, Attention: Mr. Daniel J. Smachetti.

Copies of the transmittal letter shall be sent to the District 2 Administration Office, 171 Salem Turnpike, Norwich, CT 06360, Attention: Mr. Carl E. Nelson, District Engineer.

Submittals requiring review for conformance with the Contract that shall be submitted directly to the District Engineer in lieu of the Designer are listed below. Copies of the transmittal letters shall be sent to the Transportation Principal Engineer, Facilities Design.

Erosion Control Plan and Materials.
Demolition Plan.
Disposal Plan.
Certified Test Reports, Material Certificates, etc. from Form 816 Standard Items (non “A” Items from Bid List).

Submittal Preparation and Processing: The Contractor shall provide the Designer with complete submittal packages (Product Data, Shop Drawings, Samples, and Quality Assurance Submittals, as applicable) for individual elements of Project work for a concurrent review of all information. Incomplete submittal packages will be returned to the Contractor without being reviewed.

Except as otherwise noted, the Contractor shall submit 8 copies of each required submittal for the Designer’s review.

Shop Drawings: The Contractor shall submit 1 correctable translucent reproducible print and 7 blue- or black-line prints for the Designer's review. The Contractor shall add 1 blue- or black-line print for each of the above noted CSI Sections for outside agency review.

Samples: Where Samples are for selection of color, pattern, texture or similar characteristics from a range of choices, submit 2 full sets of the standard and custom choices for the material or product. Where Samples illustrate assembly details, workmanship, fabrication techniques, connections, operation and similar characteristics, submit 1 sample (or set, if applicable).

Designer's Action: The Designer will return 3 copies marked with action taken and corrections or modifications required.

Shop Drawings: The Designer will return the reproducible print. One of the prints returned shall be marked-up and maintained as a "Record Document."

Samples: The Designer will return one set of samples marked with the action taken. The set of samples shall be maintained at the Project site when returned.

Maintenance manuals and warranties will not be returned unless they are Rejected.

NOTICE TO CONTRACTOR – EARLY SUBMITTALS

The Contractor is hereby advised that the Department has identified the potential need to order certain materials and equipment, and thereby submit certain submittals for approval early in the construction process to ensure the Project is completed within the allowable Contract Time. Submittals shall be in accordance with Form 816 Article 1.20-1.05.02. The following items have been identified as possibly requiring early ordering thereby requiring early submission of shop drawings and product data, including color selection charts and samples:

Roof Materials

The following items have been identified as possibly requiring early submission for purposes of project coordination and project work scheduling:

Baseline Critical Path Schedule
Contractor's Submittal Schedule

The lists above are not intended to be all-inclusive and do not relieve the Contractor from coordinating the activities of its subcontractors and suppliers. The Contractor will not be permitted to perform any physical work on the Project without the approval of the required submittals. Failure to properly plan for long lead items within the Contract schedule will not be justification for additional construction time.

It is recommended that the Contractor identify early in the construction sequencing process the subcontractors and suppliers associated with long lead-time items and submit the appropriate shop drawings and supporting data, including color selection charts and samples, for review upon Notice to Proceed.

NOTICE TO CONTRACTOR – PRE-INSTALLATION MEETINGS

The Engineer will conduct a pre-installation meeting at the Project Site before each of the following construction activities:

1. Predemolition: Form 816 Article 1.20-1.08.03 – Prosecution of Work, subsection 4 – Selective Demolition.
2. Roofing: CSI Division 07 Section 075419, "Polyvinyl-Chloride (PVC) Roofing."

The above list may not be all-inclusive and does not relieve the Contractor from its responsibility to provide pre-installation meetings that are required under other Contract provisions.

NOTICE TO CONTRACTOR – CLOSEOUT DOCUMENTS

General: The list of special provisions (including CSI-formatted specifications) in the Table below may not be all-inclusive and does not relieve the Contractor from its responsibility to provide spare parts, operation and maintenance manuals, training, and warranties that are required under other Contract provisions.

This Table will be forwarded to Mr. David A. Hartley, Office of Property and Facilities Services, for concurrence prior to the Semi-Final Inspection.

Spare Parts: The Contractor shall deliver spare parts on products listed in the Table below to the Project Site.

Operation and Maintenance Manuals: Submit 4 copies of each manual to the Designer. The Designer and Mr. Hartley will review the manuals for conformance to the Contract. The manuals will be processed in accordance with Form 816 Article 1.20-1.05.02, with 3 copies being forwarded to Mr. Hartley and one copy being sent to the Engineer.

Materials and Finishes Maintenance Manual: The Contractor shall provide complete information in the materials and finishes manual on products listed in the Table below.

Equipment and Systems Maintenance Manuals: The Contractor shall provide complete information in the equipment and systems manual on products listed in the Table below.

Training: The Contractor shall provide training on products listed in the Table below.

Warranties: Submit 4 copies of written warranties, including special warranties to the Designer. The Designer and Mr. Hartley will review the warranties for conformance to the Contract. The warranties will be processed in accordance with Form 816 Article 1.20-1.05.02, with 3 copies being forwarded to Mr. Hartley and one copy being sent to the Engineer.

The Contractor shall provide special warranties on products and installations listed in the Table below.

TABLE

Special Provision (including CSI-formatted Specifications)	Warranties	Spare Parts	Training	Operation and Maintenance Manuals
CSI Section 075419, "Polyvinyl-Chloride (PVC) Roofing"	X			X

NOTICE TO CONTRACTOR – CADD FILES

The Contractor is hereby advised that the Department will provide CADD Files to the Contractor (upon request) in Microstation format for their use during the construction of the Project. The Contractor shall make such request to the Engineer, and the Designer will provide the CADD Files within 14 calendar days.

The Contractor shall bid the Project accordingly.

Welcome
to the
Connecticut Department of Transportation
File Library Information
provided by the
Office of Information Systems

File(s) From the Connecticut Department of Transportation (ConnDOT) Office of Information Systems (OIS)

The ConnDOT OIS is committed to providing electronic access to appropriate files. We make every reasonable effort to do so in a cross-platform and complex multi-protocol environment. We constantly test and retest our connectivity and solutions to ensure the greatest degree of ease of access and compatibility.

If the Receiver proceeds, the Receiver agrees to the following terms and conditions:

1. The State of Connecticut, Department of Transportation (hereinafter referred to as ConnDOT) makes no warranty of any kind, express or implied, with respect to the file(s) which are the subject of this agreement, and specifically makes no warranty that said file(s) shall be merchantable or fit for any particular purpose. Furthermore, any description of said file(s) shall not be deemed to create an express warranty that such files shall conform to said description. The exhibition of any sample or model shall not be regarded as part of the basis of this agreement and shall not create an express warranty that the whole of the file(s) provided hereunder shall conform to any sample or model.

2. Receiver assumes all risk and liability for any losses, damages, claims or expenses resulting from the use, possession or resale of any file(s) furnished by ConnDOT pursuant to this agreement.

3. Receiver agrees to indemnify, defend and hold harmless ConnDOT, its officers, agents, and employees from and against any and all claims, suits, losses, damages or costs, including reasonable attorney's fees, arising from or by reason of receivers' use, possession or resale with respect to any of the file(s) furnished by ConnDOT pursuant to this agreement, and such indemnification shall survive acceptance of said file(s) by receiver.

4. Receiver agrees that it will not advertise, order for resale, or sell the file(s) furnished hereunder.

5. Receiver agrees that the ConnDOT has made every reasonable effort to provide information in a file format which offers cross-platform solutions (for both application and file compression). Some ConnDOT files are compressed. Compressed files can be identified by a file extension, (e.g., .sit, .bin, .hqx, .zip or .arc).

6. Receiver agrees that ConnDOT cannot be held responsible for problems arising from files which have been converted for use in non-native applications (e.g. Microsoft Word documents read in WordPerfect, Microstation design files to Autocad).

7. Receiver agrees that ConnDOT cannot provide the files in other file or compression formats, and agrees to use the files in the format provided.

8. These terms and conditions constitute the complete and final agreement of the parties hereto.

Receiver <u>ACCEPTS</u> the aforementioned terms and conditions.

SIGNATURE:_____ DATE:_____

NOTICE TO CONTRACTOR – HAZARDOUS MATERIALS INVESTIGATIONS

Limited hazardous building materials site investigations have been conducted at the Preston, Putnam and Thompson Salt Sheds which are scheduled for renovation. The scope of inspection was limited to the areas of projected impact.

The results of these investigations indicated the presence of hazardous or otherwise regulated items (e.g. lamps, used electronics, misc. oils, guano, chloride tanks, etc.) at the facilities, HOWEVER NOT within the proposed construction areas scheduled for impact. Limited amounts of lead based paint (LBP) were also identified at the sites, but again NOT on components which are projected to be impacted. No asbestos containing materials (ACM) were identified within the project scope at the sites.

The Contractor is hereby notified that these hazardous building materials exist at the sites and shall not be disturbed. WORKER HEALTH AND SAFETY PROTOCOLS WHICH ADDRESS POTENTIAL AND/OR ACTUAL RISK OF EXPOSURE TO SITE SPECIFIC HAZARDS ARE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.

Information pertaining to the results of the limited hazardous building materials investigations discussed can be found in the documents listed below. These documents shall be available for review at the Office of Contracts, 2800 Berlin Turnpike, Newington, Connecticut.

> Pre-Renovation Investigative Survey for Hazardous Building Materials, Salt Shed Roof Replacements – Project 6, Preston, Putnam & Thompson, Connecticut, TRC Environmental Corporation. April 2012.

NOTICE TO CONTRACTOR – VOLUNTARY PARTNERING

The Connecticut Department of Transportation (ConnDOT) intends to encourage the foundation of a cohesive partnership with the Contractor and its principal subcontractors on this project. This partnership will be structured to draw on the strengths of each organization to identify and achieve reciprocal goals. The objectives are effective and efficient contract performance and completion within budget, on schedule, and in accordance with plans and specifications.

This partnership will be bilateral in makeup, and participation will be totally voluntary. Any cost associated with effectuating this partnering will be agreed to by both parties and will be shared equally.

To implement this partner initiative, the Contractor and ConnDOT will meet and plan a partnering development seminar/team building workshop. At this planning session arrangements will be made to determine attendees at the workshop, agenda of the workshop, duration and location. Persons required to be in attendance will be the ConnDOT District Engineer and key project personnel, the Contractor's on-site project manager and key supervision personnel of both the prime and principal subcontractors. The project design engineers and key local government personnel will also be required to have Regional/District and Corporate/State level managers on the project team.

Follow-up workshops will be held periodically throughout the duration of the Contract as agreed by the Contractor and ConnDOT.

The establishment of a partnership charter on a project will not change the legal relationship of the parties to the Contract nor relieve either party from any of the terms of the Contract.

ConnDOT and the Contractor will jointly select a facilitator to conduct the partnering workshops. The Contractor will obtain the services of the chosen facilitator and ConnDOT will reimburse the Contractor for fifty percent (50%) of the costs agreed to between ConnDOT and the Contractor.

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.

NOTICE TO CONTRACTOR – CONNECTICUT DEPARTMENT OF TRANSPORTATION DISCLAIMER

Connecticut Department of Transportation bidding and other information and documents which are obtained through the Internet, World Wide Web Sites or other sources are not to be construed to be official information for the purposes of bidding or conducting other business with the Department.

It is the responsibility of each bidder and all other interested parties to obtain all bidding related information and documents from official sources within the Department.

Persons and/or entities which reproduce and/or make such information available by any means are not authorized by the Department to do so and may be liable for claims resulting from the dissemination of unofficial, incomplete and/or inaccurate information.

NOTICE TO CONTRACTOR – GORE AREAS

Gore areas will no longer be available for disposal of surplus material.

NOTICE TO CONTRACTOR – TRAFFIC DRUMS AND TRAFFIC CONES

Traffic Drums and 42-inch (1 m) Traffic Cones shall have four six-inch (150 mm) wide stripes (two - white and two - orange) of flexible bright fluorescent sheeting.

The material for the stripes shall be one of the following, or approved equal:

- 3M Scotchlite Diamond Grade Flexible Work Zone Sheeting, Model 3910 for the white stripes and Model 3914 for the orange stripes,

- Avery Dennison WR-7100 Series Reboundable Prismatic Sheeting, Model WR-7100 for the white stripes and Model WR-7114 for the orange stripes.

NOTICE TO CONTRACTOR – NCHRP 350 REQ. FOR WORK ZONE TRAFFIC CONTROL DEVICES

CATEGORY 1 DEVICES (traffic cones, traffic drums, tubular markers, flexible delineator posts)

Prior to using the Category 1 Devices on the project, the Contractor shall submit to the Engineer a copy of the manufacturer's self-certification that the devices conform to NCHRP Report 350.

CATEGORY 2 DEVICES (construction barricades, construction signs and portable sign supports)

Prior to using Category 2 Devices on the project, the Contractor shall submit to the Engineer a copy of the Letter of Acceptance issued by the FHWA to the manufacturer documenting that the devices (both sign and portable support tested together) conform to NCHRP Report 350 (TL-3).

Specific requirements for these devices are included in the Special Provisions.

Information regarding NCHRP Report 350 devices may be found at the following web sites:

FHWA: http://safety.fhwa.dot.gov/roadway_dept/road_hardware/index.htm

ATSSA: http://www.atssa.com/resources/NCHRP350Crashtesting.asp

NOTE: The portable wooden sign supports that have been traditionally used by most contractors in the State of Connecticut do NOT meet NCHRP Report 350 criteria and shall not be utilized on any project advertised after October 01, 2000.

CATEGORY 3 DEVICES (Truck-Mounted Attenuators & Work Zone Crash Cushions)

Prior to using Category 3 Devices on the project, the Contractor shall submit to the Engineer a copy of the Letter of Acceptance issued by the FHWA to the manufacturer documenting that the devices conform to NCHRP Report 350.

SECTION 1.01 – DEFINITIONS OF TERMS AND PERMISSIBLE ABBREVIATIONS

1.01.01--Definitions:

Delete the following term:

"**SHOP DRAWINGS:** Drawings, including . . . in the Contract."

SECTION 1.02 – PROPOSAL REQUIREMENTS AND CONDITIONS

Article 1.02.04 – Examination of Plans, Specifications, Special Provisions and Site of Work:

Replace the third sentence of the last paragraph with:

The Department cannot ensure a response to inquiries received later than ten (10) days prior to the original scheduled opening of the related bid.

SECTION 1.03 – AWARD AND EXECUTION OF CONTRACT

1.03.07--Insurance:

Delete the Article in its entirety and replace with the following:

"Coverage shall be on a primary basis.

The Contractor shall carry and maintain at all times during the term of the Contract the insurance coverages required by this Article and any additional coverage(s) or higher minimum insurance coverage amount(s) required by the Special Provisions of the Contract. To the extent there is a conflict between this Article and the Special Provisions for the Contract, the Contractor shall comply with the more stringent requirement(s).

1. **Worker's Compensation Insurance:** With respect to all operations the Contractor performs and all those performed for it by subcontractors, the Contractor shall carry, and require each subcontractor to carry, Workers' Compensation insurance as required by the laws of the State of Connecticut.

Employer's Liability insurance shall be provided in amounts not less than $100,000 per accident for bodily injury by accident; $100,000 policy limit by disease and $100,000 per employee for bodily injury by disease. Each Workers' Compensation policy shall contain the U.S. Longshoreman's and Harbor Workers' Act endorsement when work is to be performed over or adjacent to navigable water.

2. **Commercial General Liability Insurance:** With respect to the operations the Contractor performs and also those performed for it by subcontractors, the Contractor shall carry, and require each subcontractor to carry, Commercial General Liability insurance, including Contractual Liability, Products and Completed Operations, Broad Form Property Damage and Independent Contractors.

Products and completed operations insurance for ongoing and completed operations shall be maintained for a period of one (1) year after the acceptance of the project by the Department in accordance with Article 1.08.14. See chart below for applicable minimum coverage amounts.

In case of Vertical construction projects, if underground work is to be undertaken, each policy shall have coverage for and exclusions removed for "Explosion, Collapse and Underground" ("XCU").

3. **Automobile Liability Insurance:** The Contractor shall obtain automobile liability insurance covering the operation of all motor vehicles, including those hired or borrowed, that are used in connection with the Project for all damages arising out of: (1) bodily injury to or death of all persons and/or (2) injury to or destruction of property; in any one accident or occurrence. This

policy shall not be subject to an annual aggregate limitation. See chart below for applicable minimum coverage amounts.

4. **Owner's and Contractor's Protective Liability Insurance for and in the Name of the State:** With respect to the Contractor's Project operations and also those of its subcontractors, the Contractor shall carry, for and on behalf of the State for each accident or occurrence resulting in damages from (1) bodily injury to or death of persons and/or (2) injury to or destruction of property. See chart below for applicable minimum coverage amounts.

Contract Amount ($)	Minimum Single Occurrence Amount ($)	Minimum Annual Aggregate Amount ($)
0 - 20 Million	1,000,000	1,000,000
20 Million - 50 Million	2,000,000	2,000,000
> 50 Million	4,000,000	4,000,000

5. **Railroad Protective Liability Insurance:** When the Contract involves work within fifty (50) feet of the railroad right-of-way or State-owned rail property, with respect to Project operations and also those of its subcontractors, the Contractor shall carry, and require each subcontractor to carry, Railroad Protective Liability Insurance providing coverage of at least $2,000,000 for each accident or occurrence resulting in damages from (1) bodily injury to or death of all persons and/or (2) injury to or destruction of property, and subject to that limit per accident or occurrence, an aggregate coverage of at least $6,000,000 for all damages during the policy period, and with all entities falling within any of the following listed categories named as insured parties: (i) the owner of the railroad right-of-way, (ii) the owner of any railcar licensed or permitted to travel within that affected portion of railroad right-of-way, and (iii) the operator of any railcar licensed or permitted to travel within that affected portion of the railroad right-of-way, and with the State, if not falling within any of the above-listed categories, also named as an insured party.

For additional insurance requirements for work in Metro-North Territory, see Paragraph 2.0 of "Special Requirements Regarding Work in Metro-North Territory" in Article 1.05.06.

For additional insurance requirements for work in AMTRAK Territory, is applicable, see the 'Temporary Permit to Enter Upon Property' in the NOTICE TO CONTRACTOR – WORK ON RAILROAD PROPERTY.

6. **Blasting:** When explosives are to be used in the Project, the Commercial General Liability insurance policy shall include XCU coverage, in the same limits as the per occurrence policy limits.

7. **Protection and Indemnity Insurance for Marine Construction Operations in Navigable Waters:** If a vessel of any kind will be involved in Project work, the Contractor shall obtain the following additional insurance coverage:

A. Protection and Indemnity Coverage of at least $500,000 per vessel or equal to at least the value of hull and machinery, whichever is greater.

B. If there is any limitation or exclusion with regard to crew and employees under the protection and indemnity form, the Contractor must obtain and keep in effect throughout the Project a worker's compensation policy, including coverage for operations under admiralty jurisdiction, with a limit of liability of at least $500,000 per accident or a limit equal to at least the value of the hull and machinery, whichever is greater, or for any amount otherwise required by statute.

8. **Builder's Risk Insurance:** The Contractors shall maintain comprehensive replacement cost builder's risk (completed value) insurance providing coverage for the entire work at the Project site, including all fixtures, machinery and equipment, any heating, cooling and constituting a permanent part of the building and shall cover portions of work located away from the site, but intended for use at the site. If it is determined that all or a portion of the project is located with an area designated as a Special Flood Hazard Area, the Contractor shall maintain flood insurance (no less than $10,000,000 sublimit). The State of Connecticut shall be named as Loss Payee. Equipment breakdown coverage may be sub limited to 50% of the project cost.

9. **Architects and Engineer's Professional Liability Insurance:** When the Contractor is specifically required to make submittals to the Department which require the stamp of a Professional Engineer licensed in the State of Connecticut, these submittals shall include a copy of the liability insurance policy for the Professional Engineer. The Professional Liability Insurance shall have a minimum of $1,000,000 coverage and shall be provided and maintained at no direct cost to the State. The policy shall be maintained for a period of the lesser of (1) a period of 3 years from the date of the acceptance of the Project by the Commissioner, as evidenced by the State of Connecticut, Department of Transportation form entitled "Certificate of Acceptance of Work and Acceptance of Project" issued to the Contractor; or (2) a period of 3 years after the termination of the Contract, subject to the continued commercial availability of such insurance.

10. **Umbrella Liability Insurance:** Contractor may satisfy the minimum limits required for Commercial General Liability and Automobile Liability Insurance using Umbrella Liability Insurance. In the event that the Contractor obtains Umbrella Liability Insurance to meet the minimum coverage requirements for Commercial General Liability or Automobile Liability Insurance coverage, the Umbrella Liability Insurance policy shall have an annual aggregate at a limit not less than twice the single occurrence and must specifically endorse the State of Connecticut as an additional insured. Specifically for Bridge Projects with a low bid equal to or higher than $80,000,000, the Umbrella Liability Insurance policy must have a minimum limit of at least $25,000,000.

11**. Certificate of Insurance.** Before the Contract is executed, the Contractor must provide to the Department a certificate of insurance acceptable to the Commissioner and executed by an insurance company or companies satisfactory to the State of Connecticut for the insurance coverage(s) required by this Article and the Special Provisions of the Contract. The Contractor shall maintain the required insurance coverage during the entire term of the Contract. The

certificate of insurance must clearly include the name of the insured and identify the project for which it is being issued.

12. **Copies of Policies**. The Contractor shall provide, within five (5) business days, a copy or copies of all applicable insurance policies when requested by the State. In providing said policies, the Municipality may redact provisions of the policy that are proprietary. This provision shall survive the expiration or termination of the Contract.

13. **Sovereign Immunity.** The Contractor may not assert the defense of sovereign immunity in the adjustment of claims or in the defense of any claim or suit brought against the Contractor or the State, unless the State, in writing, requests that the Contractor do so or consents to its doing.

14. **Contractor Assumes Costs**. The Contractor shall assume and pay all costs and billings for premiums, deductibles, self-insured retentions and audit charges earned and payable under the required insurance.

15. **State Named as Additional Insured**. The State must be named as an additional insured party for the Commercial General Liability and Automobile Liability insurance policies required by this Article and the Special Provisions to the Contract, and any Umbrella Liability Insurance, as applicable, obtained in accordance with this Article. Each policy shall waive right of recovery (waiver of subrogation) against the State of Connecticut.

16. **Minimum Required Coverages**. With respect to Commercial General Liability, and Automobile Liability, the minimum required coverage, per occurrence and in the annual aggregate, are determined according to the Contract amount, according to the following chart:

Contract Amount ($)	Minimum Single Occurrence Amount ($)	Minimum Annual Aggregate Amount ($)
0-2,000,000	1,000,000	2,000,000
2,000,001-10,000,000	2,000,000	4,000,000
>10,000,000	4,000,000	8,000,000

17. **Termination or Change of Insurance:**

A. The Contractor shall notify the Department of any cancelation of insurance carrier or change to the required insurance coverage by submitting a new insurance certificate to the Department immediately following said cancelation or change in required coverage.

B. It is the responsibility of the Contractor to maintain evidence of a current insurance coverage with the Department for the duration of contract. It is the responsibility of the Contractor to file with the Department all renewals and new certificates of insurance issued due to changes in policy terms or changes in insurance carries prior to the expiration dates on the forms already on file with the Department.

18. **Duration of Coverage**. The Contractor shall keep all the required insurance in continuous effect until the date that the Department designates for the termination of the Contractor's responsibility, as defined by Article 1.08.14.

19. **Compensation:** There shall be no direct compensation allowed the Contractor on account of any premium or other charge necessary to obtain and keep in effect any insurance or bonds in connection with the Project, but the cost thereof shall be considered included in the general cost of the Project work.

20. **Protection and Indemnity Insurance for Marine Construction Operations in Navigable Waters:**

If a vessel of any kind will be involved in Project work, the Contractor shall obtain the following additional insurance coverage:

A. Protection and Indemnity Coverage of at least $300,000 per vessel or equal to at least the value of hull and machinery, whichever is greater.

B. If there is any limitation or exclusion with regard to crew and employees under the protection and indemnity form, the Contractor must obtain and keep in effect throughout the Project a workers' compensation policy, including coverage for operations under admiralty jurisdiction, with a limit of liability of at least $300,000 per accident or a limit equal to at least the value of the hull and machinery, whichever is greater, or for any amount otherwise required by statute."

1.03.08--Notice to Proceed and Commencement of Work:

Delete the first paragraph and replace with the following:

"The Contractor shall commence and proceed with the Contract work on the date specified in a written Notice to Proceed issued by the Engineer to the Contractor. The date specified will be no later than 45 calendar days after the date of the execution of the Contract by the Department."

SECTION 1.05 – CONTROL OF THE WORK

1.05.02--Plans, Working Drawings, and Shop Drawings:

Delete the entire subsection entitled "2. Working Drawings:"

Delete the entire subsection entitled "3. Shop Drawings:"

SECTION 1.06 – CONTROL OF MATERIALS

1.06.01--Source of Supply and Quality:

Delete the last paragraph: "When one manufacturer's product . . . and Materials Certificate."

1.06.08--Warranties, Guarantees and Instruction Sheets:

Delete the entire Article.

SECTION 1.07 – LEGAL RELATIONS AND RESPONSIBILITIES

Article 1.07.05 - Load Restrictions:

Delete all three paragraphs and replace them with the following:

"(a) Vehicle Weights: This sub article will apply to travel both on existing pavements and pavements under construction. The Contractor shall comply with all legal load restrictions as to vehicle size, the gross weight of vehicles, and the axle weight of vehicles while hauling materials. Throughout the duration of the contract, the Contractor shall take precautions to ensure existing and newly installed roadway structures and appurtenances are not damaged by construction vehicles or operations.

Unless otherwise noted in contract specifications or plans, on and off road equipment of the Contractor, either loaded or unloaded, will not be allowed to travel across any bridge or on any highway when such a vehicle exceeds the statutory limit or posted limit of such bridge or highway. Should such movement of equipment become necessary the Contractor shall apply for a permit from the Department for such travel, as provided in the Connecticut General Statutes (CGS). The movement of any such vehicles within the project limits or detour routes shall be submitted to the Engineer for project record. Such permit or submittal will not excuse the Contractor from liability for damage to the highway caused by its equipment.

The Contractor is subject to fines, assessments and other penalties that may be levied as a result of violations by its employees or agents of the legal restrictions as to vehicle size and weight.

(b) Storage of Construction Materials/Equipment on Structures: Storage is determined to be non-operating equipment or material. The Contractor shall not exceed the statutory limit or posted limit for either an existing or new structure when storing materials and/or construction equipment. When a structure is not posted, then the maximum weight of equipment or material stored in each 12 foot wide travel lane of any given span shall be limited to 750 pounds per linear foot combined with a 20,000 pound concentrated load located anywhere within the subject lane. If anticipated storage of equipment or material exceeds the above provision, then the Contractor shall submit his proposal of storage supported by calculations stamped by a Professional Engineer registered in the State of Connecticut, to the Engineer for approval 14 days prior to the storage operation. Operations related to structural steel demolition or erection shall follow the guidelines under Section 6.03. All other submittals shall include a detailed description of the material/equipment to be stored, the quantity of storage if it is stockpiled materials, the storage location, gross weight with supporting calculations if applicable, anticipated duration of storage, and any environmental safety, or traffic protection that may be required. Storage location on the structure shall be clearly defined in the field. If structures are in a state of staged construction or demolition, additional structural analysis may be required prior to authorization of storage."

Article 1.07.10 - Contractor's Duty to Indemnify the State against Claims for Injury or Damage:

Add the following after the only paragraph:

"It is further understood and agreed by the parties hereto, that the Contractor shall not use the defense of Sovereign Immunity in the adjustment of claims or in the defense of any suit, including any suit between the State and the Contractor, unless requested to do so by the State."

SECTION 1.08 – PROSECUTION AND PROGRESS

Article 1.08.01--Transfer of Work or Contract:

In the first sentence of the first paragraph which reads: "The Contractor shall perform . . . total Contract value.", change "50%" to "25%."

Add the following after the last paragraph:

The Contractor shall pay the subcontractor for work performed within thirty (30) days after the Contractor receives payment for the work performed by the subcontractor. Also, any retained monies on a subcontractor's work shall be paid to the subcontractor within thirty (30) days after satisfactory completion of all the subcontractor's work.

For the purpose of this Item, satisfactory completion shall have been accomplished when:

(1) The subcontractor has fulfilled the contract requirements of both the Department and the subcontract for the subcontracted work, including the completion of any specified material and equipment testing requirement or plant establishment period and the submission of all submittals (i.e.: certified payrolls, material samples and certifications, required state and federal submissions, etc.) required by the specifications and the Department, and
(2) The work done by the subcontractor has been inspected and approved by the Department and the final quantities of the subcontractor's work have been determined and agreed upon.

If the Contractor determines that a subcontractor's work is not complete, the Contractor shall notify the subcontractor and the Engineer, in writing, of the reasons why the subcontractor's work is not complete. This written notification shall be provided to the subcontractor and the Engineer within twenty-one (21) days of the subcontractor's request for release of retainage.

The Engineer will institute administrative procedures to expedite the determination of final quantities for the subcontractor's satisfactorily completed work.

The inspection and approval of a subcontractor's work does not eliminate the Contractor's responsibilities for all the work as defined in Article 1.07.12, "Contractor's Responsibility for Work."

The inspection and approval of the subcontractor's work does not release the subcontractor from its responsibility for maintenance and other periods of subcontractor responsibility specified for the subcontractor's items of work. Failure of a subcontractor to meet its maintenance, warranty and/or defective work responsibilities may result in a finding that the subcontractor is non-responsible on future subcontract assignments.

For any dispute regarding prompt payment or release of retainage, the alternate dispute resolution provisions of this article shall apply.

The above requirements are also applicable to all sub-tier subcontractors and the above provisions shall be made a part of all subcontract agreements.

Failure of the Contractor to comply with the provisions of this section may result in a finding that the Contractor is non-responsible on future projects.

Article 1.08.07 - Determination of Contract Time:

Delete the second, third, and fourth paragraphs and replace with the following:

"When the Contract time is stated on a calendar-day basis, that time shall be the number of consecutive calendar days contained in the Contract period designated in the Contract, INCLUDING the time period from each December 1 through the following March 31. The Contract time will begin to run on the date designated in the Engineer's "Notice to Proceed" as the date for commencement of the Project, and the time will be computed as herein provided on a consecutive-day basis, including all Saturdays, Sundays, holidays, and non-work days."

Article 1.08.08--Extension of Time:

Delete the last paragraph ("If an approved extension . . . until the following April 1.").

Article 1.08.09--Failure to Complete Work on Time:

Delete the second paragraph ("If the last day of the initial . . . the Project is completed"), and replace with the following:

"Liquidated damages as specified in the Contract shall be assessed against the Contractor per calendar day from that day until the date on which the Project is substantially completed."

SECTION 1.20 – GENERAL CLAUSES FOR FACILITIES CONSTRUCTION

1.20-1.02.13—Knowledge of Applicable Laws:

Delete Item 5 and replace with the following:

"5. The 2009 International Energy Conservation Code, including the 2011 Connecticut Amendments."

SECTION M.04 - BITUMINOUS CONCRETE

M.04.01—Bituminous Concrete Materials and Facilities
M.04.02—Mix Design and Job Mix Formula (JMF)
M.04.03—Production Quality Control (QC) Testing and Control of Mixture

M.04.01—Bituminous Concrete Materials and Facilities: Each source of material, and facility used to produce and test bituminous concrete (HMA) must be qualified on an annual basis by the Engineer. The basis of approval for plant machinery, material processing & controls, and field laboratory requirements are available from 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.04.03-6.

The Contractor shall submit to the Engineer all sources of coarse aggregate, fine aggregate, mineral filler and PG binder. The Contractor shall submit a Material Safety Data Sheet (MSDS) for each grade of binder to be used on the Project. The Contractor shall not change material sources without prior approval of the Engineer.

An adequate quantity of each size aggregate, mineral filler and bitumen shall be maintained at the HMA 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, but shall never be less than one day's production capacity. 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 Pw_a 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 HMA 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 or elongated shall be determined in accordance with ASTM D 4791 and shall not exceed 10% by weight when tested to a 3:1 ratio, as shown in Tables M.04.02-2 thru M.04.02-4.

2. Fine Aggregate:

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 an HMA plant.

a. 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.

For Superpave mixtures, in addition to the above requirements, the fine aggregate angularity shall be determined by testing the materials passing the #8 sieve in accordance with AASHTO T 304, Method A. Qualification shall be based on the criteria listed in Tables M.04.02-2 thru M.04.02-4. The fine aggregate shall also be tested for clay content as a percentage contained in materials finer than the #8 sieve in accordance with AASHTO T 176.

Table M.04.01-1: Fine Aggregate Criteria by Pit/Quarry Source

Item	Title	AASHTO Protocol	Criteria
1	Grading	T 27 and T 11	100% Passing the 3/8 inch 95% Passing the #4 minimum
2	Absorption	T 84	3% maximum
3	Plasticity limits	T 90	0 or not detectable
4	L.A. Wear	T 96	50% maximum(fine aggregate particle size # 8 and above)
5	Soundness by Magnesium Sulfate	T 104	20% maximum @ 5 cycles
6	Clay Lumps and Friable Particles	T 112	3% maximum
7	Deleterious Criteria	As determined by the Engineer	Deleterious substances include: 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.

If Fine aggregate is tested by the CTDOT twice and does not meet above criteria.			
8	Pit/source Petrographic Analysis	C 295 (ASTM)	• Required to be performed by the Contractor at no expense to the Department. • Report assignable cause(s), corrective action taken to mitigate source and written request for resample. • If fine aggregate fails upon retest, Contractor may be permitted to request trial use on roadway for evaluation using the subject fine aggregate in HMA, to be monitored for no more than 48 months. • Evaluation location(s); mix size & level; terms and costs related to this application; determination of performance, and approval will be established at the sole discretion of the Engineer.

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 mixtures.

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 Pw_a 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 fails again, the use of the material will not be permitted without additional testing.

The Contractor may solicit additional testing by a third party acceptable to the Engineer to perform a Petrographic analysis (ASTM C 295), at its 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.

Upon review of the Petrographic analysis report and identified items that were corrected, the source may be re-sampled and tested by the Engineer.

c. The Contractor may request that the use of such material not meeting the requirements be considered on select project(s) for certain applications. HMA pavement incorporating such material will be monitored and evaluated for a period not to exceed 48 months, at the direction of the Department and at the expense of the Contractor. Terms of any evaluation and suitable application will be predetermined by the Engineer.

If the Engineer determines, upon evaluation, that the fine aggregate performance is adequate and not harmful to the pavement's serviceability, the Department may approve the material for use in HMA mixtures in similar applications.

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. Liquid Bituminous Materials:

a. Performance grade (PG) binder Requirements:

i. Binders shall contain uniformly mixed and blended liquid bituminous materials that are free of contaminants such as fuel oils and other solvents. Such binders shall be properly heated and stored to prevent damage or separation. A 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 asphalts free from modification with: fillers, extenders, reinforcing agents, adhesion promoters, thermoplastic polymers, acid modification and other additives, and shall indicate such information on each bill of lading and certified test report.

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 asphalt binder shall be Performance Grade 64-22 Neat asphalt. The binder shall meet the requirements of AASHTO M-320(M) and AASHTO R-29(M). 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. Cut-backs (medium cure type)

i. Requirements: The liquid petroleum materials shall be produced by fluxing an asphalt base with appropriate petroleum distillates to produce the grade specified.

ii. Basis of Approval: The request for approval of the source of supply shall be submitted at least seven days prior to its use listing the location where the materials will be produced, and manufacturing, processing, handling and storage methods. The Contractor shall submit a Certified Test Report in accordance with Section 1.06 and a Material Safety Data Sheet (MSDS) for the grade to be used on the Project. The liquid asphalt shall be MC-250 conforming to AASHTO M-82.

c. Emulsions

i. Requirements: The emulsified asphalt shall be homogeneous and not be used if exposed to freezing temperatures.

ii. Basis of Approval**:** The request for approval of the source of supply must include the location where the materials will be produced, and manufacturing, processing, handling and storage methods.

1. Emulsified asphalts shall conform to the requirements of AASHTO M-140. Materials used for tack coat shall not be diluted and meet grade RS-1. When ambient temperatures are 80˚F and rising, grade SS-1 or SS-lh may be substituted if accepted by the Engineer. Each shipment shall be accompanied with a Certified Test Report listing Saybolt viscosity, residue by evaporation, penetration of residue, and weight per gallon.

2. Cationic emulsified asphalt shall conform to the requirements of AASHTO M-208(M). 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-lh may be substituted if accepted by the Engineer. Each shipment shall be accompanied with a Certified Test Report listing Saybolt viscosity, residue by evaporation, penetration of residue, and weight per gallon.

5. 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 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 subarticles 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. After recovery of binder from the RAP by AASHTO T 170(M), the viscosity test results shall be reported when tested at 140°F by AASHTO T 202 or T 316.
4. 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.

6. 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:

CRCG Grading Requirements	
Sieve Size	Percent Passing
3/8-inch	100
No. 4	35-100
No. 200	0.0-10.0

7. Joint Seal Material:

Requirements: Joint seal material shall be a hot-poured rubber compound intended for use in sealing joints and cracks in Asphalt Concrete Pavements. Joint seal material must meet the requirements of AASHTO M-324 – Type 2.

8. Plant production requirements

a. Storage Silos:

i. The Contractor may use silos for short-term storage of Superpave 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	To be determined by the Engineer

ii. For all classes of mixture sampled from hauling vehicles at the plant after storage in silos (virgin or mixture containing RAP) except 5, 5A, and 5B, the binder properties of the recovered asphalt shall meet the PG binder grade specified when recovered by AASHTO T 170(M) and tested in accordance with AASHTO R-29 and M-320(M).

iii. If mixture coming out of a silo continuously does not meet the requirements of M.04.03, or the binder does not meet the PG requirements, the Engineer shall deem that silo unacceptable for use.

b. 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 a minimum of twice daily, prior to production and half way through production. The Contractor shall perform cold feed gradation analysis (AASHTO T 27(M) & T 11) for each component aggregate to ensure values remain

within the tolerances stated in Table M.04.02 when compared to the latest JMF for that class.

c. 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 bituminous concrete mixtures are free from moisture throughout. 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.

d. 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 truck 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.

e. 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 truck ticket, as specified herein. Tolerance controls shall be automatically or manually adjustable to provide proportions within these tolerances for any batch size. The automatic proportioning system shall be capable of consistently delivering mixtures within these limits for the full range of batch sizes.

An asterisk (*) shall be automatically printed next to any individual batch weight(s) exceeding these tolerances. 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.

Each Aggregate Component:	±1.0 % total target batch weight
Mineral Filler	±0.5 % of the total batch
Bituminous Material	±0.1 % of the total batch
Zero Return (Aggregate)	±0.5 % of the total batch
Zero Return (Bituminous Material)	±0.1 % of the total batch

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 truck ticket.

f. Field Laboratory:
The Contractor shall furnish the Engineer an acceptable field laboratory, to test bituminous mixtures during production and the Engineer shall have priority to use it for testing. The HMA plant production 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, 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, the laboratory temperature shall not exceed ambient 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 field laboratory testing apparatus, supplies, and safety equipment shall be capable of performing all tests in their entirety that are referenced in AASHTO R 35(M), *Standard Practice for Superpave Volumetric Design for Hot-Mix Asphalt (HMA)* and AASHTO M 323, *Standard Specification for Superpave Volumetric Mix Design*. In addition, 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 plant 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.

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

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

1. 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.

2. 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 subarticles 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(M) 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

CLASS	1	2	3	4	12	5 (e)(j)	5A (e)(j)	5B (e)(j)	JMF % Tol. (±)
Grade of PG Binder content %	PG 64-22 5.0 – 6.5	PG 64-22 5.0 – 8.0	PG 64-22 6.5 - 9.0	PG 64-22 4.0 - 6.0	PG 64-22 7.5 - 10.0	MC-250 (d) 6.0 - 7.5	MC-250 (d) 6.0 - 7.5	MC-250 (d) 6.0 - 7.5	0.4
Sieve Size	Percent Passing (%)								
# 200	3.0 – 8.0 (g)	3.0 – 8.0 (g)	3.0 – 8.0 (g)	0.0 – 5.0 (g)	3.0 – 10.0 (g)	0.0 - 2.5	0 .0- 2.5	0.0 - 2.5	2.0
# 50	6 – 26	8 – 26	10 - 30	5 - 18	10 - 40				4
# 30	10 - 32	16 - 36	20 - 40		20 - 60	2 - 15	2 – 15	2 - 15	5
# 8	28 - 50	40 - 64	40 - 70	20 - 40	60 - 95	10 - 45	10 – 45	10 - 45	6
# 4	40 - 65	55 - 80	65 - 87	30 - 55	80 - 95	40 - 100	40 – 100	40 - 100	7
¼"									
3/8 "	60 - 82	90 - 100	95 - 100	42 - 66	98 - 100	100	100	100	8
½ "	70 - 100	100	100		100				8
¾"	90 - 100			60 - 80					8
1"	100								
2"				100					
Additionally, the fraction of material retained between any two consecutive sieves shall not be less than 4%									
Mixture Temperature									
Binder	325°F maximum					140-185° F			
Aggregate	280-350° F					100-175° F			
Mixtures	265-325° F				275-325°F	120-175° F			25 °F
Mixture Properties									
VOIDS - %	3.0 – 6.0 (a)	2.0 – 5.0 (b)	0 – 4.0		0 - 5.0 (a)				
Stability (f) lbs. min.	1200 (c)	1000	1000		1000				
FLOW (f) in.	.08 - .15	.08 - .15	.08 - .18		.08 - .15				
VMA % - min.	15(h) :16 (i)								

3. Superpave Design Method – S0.25, S0.375, S0.5, and S1

a. Requirements: The Contractor or its representative shall design and submit Superpave mix designs annually for approval. The design laboratory developing the mixes shall be approved by the Engineer. The mix design shall contain the nominal maximum aggregate size and include a JMF consisting of target values for gradation and bitumen content for each HMA mix type designated for the project, as specified in Tables M.04.02-2 thru Table M.04.02-5 and in accordance with the latest requirements of AASHTO M 323(M) and AASHTO R 35(M).

The contractor shall provide a certified test report with supporting documentation from an accredited AASHTO Materials Reference Laboratory (AMRL) with the use of NETTCP Certified Technicians for aggregate consensus properties for each type & level, as specified in Table M.04.02-3. In addition the Gsa, Gsb, Pw_a shall also be provided for each component aggregate. New mixes shall be tested in accordance with AASHTO T 283(M) *Standard Method of Test for Resistance of Compacted Hot Mix Asphalt (HMA) to Moisture-Induced Damage.* The AASHTO T 283(M) test results and specimens shall be submitted by the Contractor for review. The tensile strength ratio must be greater than 80 percent, and the specimen shall not show more than minimal evidence of stripping as determined by the Engineer. The mix design shall conform to all criteria applicable to the selected traffic level equivalent single-axle loads (ESAL) as specified in this contract. Each HMA mix type must meet the requirements shown in Tables M.04.02-2 thru Table M.04.02-5.

In addition, minimum binder content values apply to all types of HMA mixtures, as stated in Table M.04.02-5. For mixtures containing RAP, the virgin production and the anticipated proportion of binder contributed by the RAP cannot be less than the total permitted binder content value for that type nor the JMF minimum binder content.

Superpave Mixture (virgin): For HMA mixtures that contain no recycled material, the limits prescribed in Tables M.04.02-2 thru Table M.04.02-5 apply. The Contractor shall submit a JMF, on a form provided by the Engineer, with the individual fractions of the aggregate expressed as percentages of the total weight of the mix and the source(s) of all materials to the Engineer for approval. The JMF shall indicate the corrected target binder content and applicable binder correction factor (ignition oven or extractor) for each mix type by total weight of mix. The mineral filler (dust) shall be defined as that portion of blended mix that passes the #200 sieve by weight when tested in accordance with AASHTO T 30(M). The dust-to-effective asphalt (D/Pbe) ratio shall be between 0.6 and 1.2 by weight. The dry/wet mix times and hot bin proportions (batch plants only) for each type shall be included in the JMF.

The percentage of aggregate passing each sieve shall be plotted on a 0.45 power gradation chart and shall be submitted for all HMA mixtures. This chart shall delineate the percentage of material passing each test sieve size as defined by the JMF. The percentage of aggregate passing each standard sieve shall fall within the specified control

points, but outside the restricted zone limits as shown in Tables M.04.02-2 thru Table M.04.02-5. Mixes with documented performance history which pass through the restricted zone may be permitted for use as long as all other physical and volumetric criteria meets specifications as specified in Tables M.04.02-2 thru Table M.04.02-5 and with prior approval from the Engineer. A change in the JMF requires that a new chart be submitted.

Superpave Mixtures with RAP: In addition to subarticles M.04.02 – 3 a through c, for HMA that contains RAP, the Contractor shall submit a materials certificate to the Engineer stating that the RAP complies with requirements stated in Article M.04.01. Upon approval of the Engineer, the use of RAP will be allowed with the following conditions:

- RAP amounts up to 15% may be used with no binder grade modification.

- RAP amounts up to 20% may be used provided a new JMF is approved by the Engineer. The JMF submittal shall include the grade of virgin binder added and test results that show the combined binder (recovered binder from the RAP and virgin binder at the mix design proportions) meets the requirements of the specified binder grade.

The RAP shall be crushed after milling or other removal method so that 100 % passes the 0.5 inch sieve. Also, under no circumstances shall the top-size aggregate in the RAP exceed the nominal maximum aggregate size allowed by the job mix formula for that mix. The Contractor shall assure that the RAP is free from contaminating substances such as joint seal compound. The aggregate type used, either gravel, trap rock or a blend of the two, shall be maintained and consistent throughout the entire roadway. The final Superpave mixture shall conform to specifications as amended herein. RAP material shall not be used with any other recycling option.

b. Basis of Approval: On an annual basis the Contractor shall submit to the Engineer a request for approval of the HMA mixture, the mix design, and JMF in accordance with one of the methods described herein. Prior to the start of any paving operations, the JMF must be approved by the Engineer, and the Contractor must demonstrate the ability to meet the accepted JMF and production percentage of bitumen for each type of mixture. HMA mixture supplied to the project without an approved mix design, JMF and approved facility will be rejected. 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. Additionally, the fraction of material retained between any two consecutive sieves shall not be less than 4%.

HMA Plant Trials: Upon submittal and approval of the mix design by the Engineer, the Contractor shall test and evaluate plant-produced mixture (PPT) in accordance with these specifications when required.

The JMF shall be accepted if the HMA Plant mixture and materials meet all criteria as specified in Tables M.04.02-2 thru Table M.04.02-5. If the mixture does not meet the requirements, the contractor shall adjust the JMF within the ranges shown in Tables M.04.02-2 thru Table M.04.02-5 until an acceptable mixture is produced. All equipment, tests, and computations shall conform to the latest AASHTO R-35(M) and AASHTO M-323(M).

Any JMF, once approved, shall only be acceptable for use when it is produced by the designated HMA plant, it utilizes the same component aggregates and binder source, and it continues to meet all criteria as specified herein, and component aggregates are maintained within the tolerances shown in Table M.04.02-2.

The Contractor shall not change any component source of supply including consensus properties after a JMF has been accepted. Before a new source of materials is used, a revised JMF shall be submitted to the Engineer for approval. Any approved JMF applies only to the plant for which it was submitted. Only one mix with one JMF will be approved for production at any one time. Switching between approved JMF mixes with different component percentages or sources of supply is prohibited.

The following information must be included in the mix design submittal:

a. Gradation, specific gravities and asphalt content of the RAP,
b. Material Certificate stating that all RAP inventory conforms to all material specifications,
c. Percentage of RAP to be used.

Superpave mixture with CRCG: In addition to subarticles M.04.02 – 3 a through c, for HMA mixtures that contain CRCG, the Contractor shall submit a materials certificate to the Engineer stating that the CRCG complies with requirements stated in Article M.04.01, as applicable. 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.

c. Mix Status: Each Plant will have each type of HMA mixture evaluated based on previous years production compliance, for the next construction paving season, as determined by the Engineer. Based on the rating a type receives it will determine whether the mixture can be produced without the prior completion of a PPT. Ratings will be provided to each HMA producer annually at the beginning of the paving season.

1) Rating Procedure: Ratings for each type are as follows:

"A" – Approved:
Rating assigned to a mixture type from a producer with a current rating of 70% or better based on specification compliance based on binder content (Pb), air voids (Va), maximum theoretical gravity (G_{mm}), and Voids in Mineral Aggregate (VMA).

"PPT" – Pre-Production Trial:
Rating assigned to a type of mixture when there is no production history from the previous year, has a change in one or more aggregate components from the JMF on record, a change in RAP percentage, or is a new JMF not previously on record.

HMA mixtures rated with a "PPT" cannot be shipped or used on Department projects. A passing "PPT" test shall be performed with NETTCP certified personnel on that type of mixture by the HMA producer and meet all specifications (Table M.04.02-2 thru Table M.04.02-5) before production shipment may be resumed. At no time shall mixture rated "PPT" be shipped to Department projects.

Contractors that have mix types rated a "PPT" may use one of the following methods to change the rating to an "A."

Option A: Schedule a day when a Department inspector can be at the HMA facility to witness a passing "PPT" test or,

Option B: When the Contractor or their representative performs a "PPT" test without being witnessed by an inspector, the Contractor shall submit the test results and a split sample including 2 gyratory molds, 5,000 grams of boxed HMA for binder and gradation determination, and 5,000 grams of cooled loose HMA for Gmm determination for verification testing and approval. Passing verifications will designate the HMA type to be on an "A" status. Failing verifications will require the contractor to submit additional trials.

Option C: When the Contractor or their representative performs a "PPT" test without being witnessed by a Department inspector, the Engineer may verify the mix in the Contractor's laboratory. Passing verifications will designate the HMA type to be an "A" status. Failing verifications will require the Contractor to submit additional trials.

When Option (A) is used and the "PPT" test meets all specifications, the "PPT" test is considered a passing test and the rating for that mix is changed to "A". When the "PPT" test is not witnessed, the "PPT" Option (B) procedure must be followed and the mixtures along with the test results delivered to the Materials Testing Lab. The test results must meet the "B" tolerances established by the Engineer.

"U" – No Acceptable Mix Design on File:

Rating assigned to a type of mixture that does not have a JMF submitted, or the JMF submitted has not been approved, or is incomplete. A mix design or JMF must be submitted annually seven (7) days prior in order to obtain an "A," or "PPT" status for that mix. A "U" will be used only to designate the mix status until the mix design has been approved, and is accompanied with all supporting data as specified. HMA mixtures rated with a "U" cannot be used on Department projects.

TABLE M.04.02– 2: SUPERPAVE MASTER RANGE FOR MIXTURE DESIGN CRITERIA

Notes: (1) Minimum Pb as specified in Table M.04.02-5. (2) Voids in Mineral Aggregates shall be computed as specified herein. (3) Control point range is also defined as the master range for that mix. (4) Dust is considered to be the percent of materials passing the #200 sieve.

	S0.25				**S0.375**				**S0.5**				**S1**			
Sieve	CONTROL POINTS (3)		*RESTRICTED ZONE*		CONTROL POINTS(3)		*RESTRICTED ZONE*		CONTROL POINTS(3)		*RESTRICTED ZONE*		CONTROL POINTS(3)		*RESTRICTED ZONE*	
inches	Min (%)	Max (%)	*Max (%)*	*Min (%)*	Min (%)	Max (%)	*Min (%)*	*Max (%)*	Min (%)	Max (%)	*Min (%)*	*Max (%)*	Min (%)	Max (%)	*Min (%)*	*Max (%)*
2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.5	-	-	-	-	-	-	-	-	-	-	-	-	100	-	-	-
1.0	-	-	-	-	-	-	-	-	-	-	-	-	90	100	-	-
3/4	-	-	-	-	-	-	-	-	100	-	-	-	-	90	-	-
1/2	100	-	-	-	100	-	-	-	90	100	-	-	-	-	-	-
3/8	97	100	-	-	90	100	-	-	-	90	-	-	-	-	-	-
#4	-	90	-	-	-	90	-	-	-	-	-	-	-	-	*39.5*	*39.5*
#8	32	67	*47.2*	*47.2*	32	67	*47.2*	*47.2*	28	58	*39.1*	*39.1*	19	45	*26.8*	*30.8*
#16	-	-	*31.6*	*37.6*	-	-	*31.6*	*37.6*	-	-	*25.6*	*31.6*	-	-	*18.1*	*24.1*
#30	-	-	*23.5*	*27.5*	-	-	*23.5*	*27.5*	-	-	*19.1*	*23.1*	-	-	*13.6*	*17.6*
#50	-	-	*18.7*	*18.7*	-	-	*18.7*	*18.7*	-	-	*15.5*	*15.5*	-	-	*11.4*	*11.4*
#100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
#200	2.0	10.0	-	-	2.0	10.0	-	-	2.0	10.0	-	-	1.0	7.0	-	-
Pb (1)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VMA (2) (%)	16.0 ± 1				16.0 ± 1				15.0 ± 1				13.0 ± 1			
VA (%)	4.0 ± 1				4.0 ± 1				4.0 ± 1				4.0 ± 1			
Gse	JMF value				JMF value				JMF value				JMF value			
Gmm	JMF ± 0.030				JMF ± 0.030				JMF ± 0.030				JMF ± 0.030			
Dust/Pbe(4)	0.6 – 1.2				0.6 – 1.2				0.6 – 1.2				0.6 – 1.2			
Agg. Temp	280 – 350F				280 – 350F				280 – 350F				280 – 350F			
Mix Temp	265 – 325 F				265 – 325 F				265 – 325 F				265 – 325 F			

TABLE M.04.02–3
SUPERPAVE MASTER RANGE FOR CONSENSUS PROPERTIES OF COMBINED AGGREGATE STRUCTURES

Notes: (1) If less than 25 % of a given layer is within 4 inches of the anticipated top surface, the layer may be considered to be below 4 inches for mixture design purposes.

Traffic Level	Design ESALs (80 kN)	Coarse Aggregate Angularity (1) ASTM D 5821	Fine Aggregate Angularity (7) AASHTO T 304	Flat or Elongated Particles ASTM D 4791	Sand Equivalent AASHTO T 176
-----	(million)			>#4	-----
1*	< 0.3	55/- -	40	10	40
2	0.3 to < 3.0	75/- -	40	10	40
3	≥ 3.0	95/90	45	10	45
	Design ESALs are the anticipated project traffic level expected on the design lane, projected over a 20 year period, regardless of the actual expected design life of the roadway.	Criteria presented as minimum values. 95/90 denotes that a minimum of 95% of the coarse aggregate, by mass, shall have one fractured face and that a minimum of 90% shall have two fractured faces.	Criteria presented as minimum percent air voids in loosely compacted fine aggregate passing the #8 sieve.	Criteria presented as maximum Percent by mass of flat or elongated particles of materials retained on the #4 sieve, determined at 3:1 ratio.	Criteria presented as minimum values for fine aggregate passing the #8 sieve.

*** NOTE: Level 1 for use by Towns and Municipalities ONLY.**

TABLE M.04.02– 4: SUPERPAVE MASTER RANGE FOR TRAFFIC LEVELS AND DESIGN VOLUMETRIC PROPERTIES.

Traffic Level	Design ESALs	Number of Gyrations by Superpave Gyratory Compactor			Percent Density of Gmm from HMA specimen			Voids Filled with Asphalt (VFA) Based on Nominal mix size – inch			
	(million)	Nini	Ndes	Nmax	Nini	Ndes	Nmax	0.25	0.375	0.5	1
1*	< 0.3	6	50	75	≤ 91.5	96.0	≤ 98.0	70 - 80	70 - 80	70 - 80	67 - 80
2	0.3 to < 3.0	7	75	115	≤ 90.5	96.0	≤ 98.0	65 - 78	65 - 78	65 - 78	65 - 78
3	≥ 3.0	8	100	160	≤ 90.0	96.0	≤ 98.0	73 – 76	73 - 76	65 - 75	65 - 75

*** NOTE: Level 1 for use by Towns and Municipalities ONLY.**

TABLE M.04.02– 5: SUPERPAVE MINIMUM BINDER CONTENT BY MIX TYPE & LEVEL.

Mix Type	Level	Binder Content Minimum (1)
S0.25	1*	5.6
S0.25	2	5.5
S0.25	3	5.4
S0.375	1*	5.6
S0.375	2	5.5
S0.375	3	5.4
S0.5	1*	5.0
S0.5	2	4.9
S0.5	3	4.8
S1	1*	4.6
S1	2	4.5
S1	3	4.4

*** NOTE: Level 1 for use by Towns and Municipalities ONLY.**

M.04.03—Production Quality Control (QC) Testing, Approval and Control of Mixture: The Contractor shall submit a Quality Control plan for HMA production specifically for the plant producing the HMA mixture in accordance with subarticle 4.06.03-9 for review and approval of the Engineer. The plan must also include a list of sampling & testing methods and frequencies used during production, and the names of all Quality Control plant personnel and their duties. In addition;

i. All plant personnel involved with sampling and testing for Quality Control purposes must have a current certification as an NETTCP HMA Plant Technician or Interim HMA Plant Technician and be in good standing. Technicians found by the Engineer to be non-compliant with NETTCP and Department policies may be suspended by the Engineer from participating in the production of mixtures for Department projects until their actions can be reviewed by NETTCP.

ii. The Contractor shall maintain a list of laboratory equipment used in their quality control 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.

In addition, based on the mix design method the following also applies.

1. **Materials Sampling & Testing Methods for Marshall Mixes:** The Contractor shall furnish the Engineer a field laboratory accepted by the Engineer to test bituminous mixtures during production. Material samples will be obtained from the hauling vehicles by the Engineer at the plant during each day's production as indicated in the Department's "Schedule of

Minimum Requirements for Sampling Materials for Test." The following test procedures will be used:

AASHTO T 30(M)	Mechanical Analysis of Extracted Aggregate
AASHTO T 40(M)	Sampling Bituminous Materials
AASHTO T 164(M)/ AASHTO T 308(M)	Quantitative Extraction/Ignition Oven of Bitumen from Bituminous Paving Mixtures
AASHTO T 245(M)	Resistance to Plastic Flow of Bituminous Mixtures Using Marshall Apparatus
AASHTO T 209(M)	Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
AASHTO T 269(M)	Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures
AASHTO T 329	Moisture Content of Hot-Mix Asphalt (HMA) by Oven Method

a. Cessation of Supply: Marshall Mix Production shall cease for the Project from any plant 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(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 HMA 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.

2. Material Sampling & Testing Methods for Superpave Mixes:

a. Samples of mixtures will be obtained from the hauling vehicles at the plant during each day's production, as indicated in Table M.04.03– 1. The Contractor shall perform necessary moisture susceptibility testing annually or when material component sources change, and for all levels of HMA S0.5 plant produced mixtures, as specified in the latest version of AASHTO T 283(M). The AASHTO T 283(M) test results and specimens shall be submitted by the Contractor for approval. The tensile strength ratio must be greater than 80 percent, and the specimen shall not show more than minimal evidence of stripping as determined by the Engineer. This shall be completed within 30 days of beginning of production. Superpave mixtures that require anti-strip additives (either liquid or mineral) shall continue to meet all requirements specified herein for binder and HMA. The Contractor shall submit the name, manufacturer, percent used, and MSDS sheet for the anti-strip additive (if applicable) to the Engineer. In addition;

   i. The Contractor shall maintain all testing equipment within a field laboratory in good working order.
   ii. The Contractor shall not modify or use the equipment within the field laboratory without the consent of the Engineer. Any such action by the Contractor may be cause for the Engineer to re-inspect equipment, check calibrations, which could delay production at that facility until such checks are completed.
   iii. The Contractor shall take immediate action to replace, repair, and/or recalibrate any piece of equipment that is deemed by the Engineer to be out of calibration, malfunctioning, or not in operation. If an acceptance test was performed using such

equipment, split test samples may be retrieved for verification at the discretion of the Engineer.

iv. Production without the use of required testing equipment will be permitted for only 1 hour. Additional production beyond the first hour may be considered by the Engineer. If permitted to continue production, box samples will be taken, tested, and incorporated as stated in Article M.04.03 and subarticle 4.06.04-1b. No production shall be permitted beyond that day until the subject equipment is repaired or replaced to the satisfaction of the Engineer.

v. Compaction of samples shall be accomplished utilizing an accepted Superpave Gyratory Compactor (SGC), supplied by the Contractor. The SGC shall be located at the HMA plant supplying mixture to the project.

vi. The Engineer is responsible for determining the acceptance of HMA and will perform verification testing on QC production samples in accordance with the Department's QA Program for Materials..

b. Additional QC plan Requirements for Plants producing Superpave Mix Design mixture:

i. The Contractor shall perform all listed component aggregates and Superpave mixture Quality Control testing in accordance with the test procedures and schedule listed in Table M.04.03-1, as a minimum, any day that Superpave mixtures are produced.

ii. The Contractor shall propose a QC test frequency for AASHTO T 27(M) on the cold feed material and AASHTO T 308 for RAP binder content.

iii. All process control (PC) test data shall be kept on file for the duration of the project for review by the Engineer.

c. Determination of Off-Test status:

i. Off Test Status: Superpave mixes shall be considered *"off test"* when any Control Point Sieve, VA, VMA, and Gmm values are outside of the limits specified in Table M.04.03-3 and the computed binder content (Pb) established by AASHTO T308(M) or as documented on the vehicle delivery ticket is below the minimum binder content stated in subarticle M.04.03-5. Note that further testing of samples or portions of samples not initially tested for this purpose cannot be used to change the status.

ii. Any time the HMA mixture is considered Off-test:

1. The Contractor shall notify the Engineer (and project staff) when the plant is *"off test"* for a type of mixture. 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"* determination.

2. The Contractor must take immediate actions to correct the deficiency, minimize *"off test"* production to the project, and obtain an additional Process Control (PC) test after any corrective action to verify production is in conformance to the

specifications. A PC test will not be used for acceptance and is solely for the use of the Contractor in its quality control process.

d. Test Section:
The test section, as specified in Section 4.06, shall be considered acceptable if payment for HMA mixture tested at the plant is no less than 100% and the field density meets the specified requirements.

Table M.04.03– 1: Contractor Quality Control Testing Procedures & Minimum Frequency of Test

Protocol	Reference	Description	Frequency (min)
1	AASHTO T 27	Sieve Analysis of Fine and Coarse Aggregate	Determined by Contractor
2	AASHTO T 329	Moisture content of RAP (before start and halfway thru production - when used)	2/day
3	AASHTO T 255(M)	Moisture content of each cold feed aggregate (before start and halfway thru production - drum plants only)	2/day
4	AASHTO T 308(M)	Binder content of RAP by Ignition Oven method (before start of production when used)	Determined by Contractor
5	AASHTO T 168(M)	Sampling of HMA	See Note (3)
6	AASHTO T 308(M)	Binder content by Ignition Oven method (adjusted for aggregate correction factor)	See Note (3) & Note (4)
7	AASHTO T 30(M)	Gradation of extracted aggregate for HMA mixture	See Note (3)
8	AASHTO T 312(M)	(1)Superpave Gyratory molds compacted to N_{des}	See Note (3)
9	AASHTO T 166(M)	(2)Bulk specific gravity of HMA	See Note (3)
10	AASHTO R 35(M)	(2)Air voids, VMA	See Note (3)
11	AASHTO T 209(M)	Maximum specific gravity of HMA (average of two tests)	See Note (3)
12	AASHTO T 329	Moisture content of Production HMA	See Note (3)

Notes: **(1)** One set equals two six-inch molds. Molds to be compacted to N_{max} for PPTs and N_{des} for production testing
(2) Average value of one set of six-inch molds.
(3) Test frequency shall be based on HMA quantity produced per day. Table M.04.03-2 denotes the number of tests required for daily QC by the Contractor.
(4) The aggregate correction factor will be determined by the Engineer.

Table M.04.03 – 2: Contractor Acceptance Testing Required Based on Daily Production per Type/Level/Plant(1)

Daily quantity produced in tons	Minimum number of tests required(2)
0 to 150	No testing required (if mix already accepted) (3)
151 to 600	1 test
601 to 1,200	2 tests
1,201 to 1,800	3 tests
1,801 and greater (4)	4 tests

Notes:
(1) For the purpose of the Contractor complying with the number of tests stated in Table M.04.03-2, tons of the same type/level per plant shall be combined from multiple state projects. A minimum of one (1) acceptance test shall be performed for every four days of production for every same type/level mix (days of production may or may not be consecutive days). An acceptance test shall not be performed within 150 tons of production from a previous acceptance test unless approved by the Engineer.
(2) All testing shall be selected using stratified – random sampling of total estimated daily tons in accordance with ASTM D 3665, except that the first test shall be randomly taken from the first round of trucks, the first 151 tons sublot, or as otherwise ordered by the Engineer. QC samples shall be saved and stored at the HMA facility for 7 days for Engineer retrieval, after which they may be disposed of.
(3) When directed by the Engineer, a minimum of 1 test is required for bridge and critical areas.
(4) An additional random test shall be taken by the Contractor for each additional 600 tons.

e. Cessation of Supply for Superpave mixtures with no payment adjustment: Production of HMA shall cease for the Project from any plant that consistently fails to produce mixture that meets the JMF and volumetric properties. The quantity of Superpave mixtures shipped to the project that is "off-test" will not be adjusted for deficient mixtures.

An HMA production plant will be required to cease supplying mixtures to the project when:

1. HMA mixture is "off test" on three (3) consecutive tests for VMA or Gmm, regardless of date of production due to inconsistency (i.e., small production requires 1 test per day for multiple days).

2. HMA mixture is "off test" on two (2) consecutive tests for the Control Point sieves in one day's production.

3. Following cessation, the Contractor shall immediately make necessary material or HMA plant corrections and run a Pre-Production Trial (PPT) for that type of mixture. Use of that type of mixture from that plant will be prohibited to the Project until the plant has demonstrated the ability to consistently produce acceptable mixture. When the Contractor has a passing test and has received approval from the Engineer, the use of that mixture to the Project shall resume.

f. Cessation of Supply for Superpave mixtures with payment adjustment:
Production of HMA shall cease for the Project from any plant that consistently fails to produce mixture that meets the Superpave minimum binder content by mix type and level listed in Table M.04.02-5. The quantity of Superpave mixtures shipped to the project that is "off-test" will be adjusted for deficient mixtures in accordance with Section 4.06.

An HMA production plant will be required to cease supplying mixtures to the project when:

1. The binder content (Pb) is below the requirements of Table M.04.03-5 on the ignition oven test result after two (2) consecutive tests, regardless of date of production.
2. Following cessation, the Contractor shall immediately make necessary material or HMA plant corrections and run a Pre-Production Trial (PPT) for that type of mixture. Use of that type of mixture from that plant will be prohibited to the Project until the plant has demonstrated the ability to consistently produce acceptable mixture. When the Contractor has a passing test and has received approval from the Engineer, the use of that mixture to the Project shall resume.

3. JMF Changes for Superpave mixtures production: It is understood that a JMF change is effective from the time it was submitted forward and is not retroactive to the previous test or tests. JMF changes are permitted to allow for trends in aggregate and mix properties but every effort shall be employed by the Contractor to minimize this to ensure a uniform and dense pavement.

a. JMF changes to the G_{mm} or mix Absorption Correction Factor (A_{cf}) are only permitted prior to or after a production shift for all HMA types of mixtures and only when they:
   i. Are requested in writing and pre-approved by the Engineer;
   ii. Are based on a minimum of a two test trend;
   iii. Are documented with a promptly submitted revised JMF on form provided by the Engineer.
   iv. A revised JMF submittal shall include the date and name of the Engineer that allowed it.

TABLE M.04.03– 3: SUPERPAVE MASTER RANGE FOR HMA MIXTURE PRODUCTION

Notes: (1) 300°F minimum after October 15. (2) Minimum Pb as specified in Table M.04.03-5 (3) Control point range is also defined as the master range for that mix. (4) JMF tolerances shall be defined as the limits for production compliance. VA & Pb payment is subject to adjustments, as defined in sub-article 4.06.04 - 2.

	S0.25		**S0.375**		**S0.5**		**S1**		**Tolerances**
Sieve	CONTROL POINTS (4)		CONTROL POINTS (4)		CONTROL POINTS (4)		CONTROL POINTS (4)		**JMF Limits** (4)
inches	Min (%)	Max (%)	Min (%)	Max (%)	Min (%)	Max (%)	Min (%)	Max (%)	±Tol
2.0	-	-	-	-	-	-	-	-	
1.5	-	-	-	-	-	-	100	-	
1.0	-	-	-	-	-	-	90	100	
3/4	-	-	-	-	100	-	-	90	
1/2	100	-	100	-	90	100	-	-	
3/8	97	100	90	100	-	90	-	-	
#4	-	90	-	90	-	-	-	-	
#8	32	67	32	67	28	58	19	45	
#16	-	-	-	-	-	-	-	-	
#200	2.0	10.0	2.0	10.0	2.0	10.0	1.0	7.0	
Pb(2)	-	-	-	-	-	-	-	-	note (2)
VMA (%)	16.0		16.0		15.0		13.0		1.0
VA (%)	4.0		4.0		4.0		4.0		1.0
Gmm	JMF value		JMF value		JMF value		JMF value		0.030
Agg. Temp	280 – 350F		280 – 350F		280 – 350F		280 – 350F		
Mix Temp	265 – 325 F (1)		265 – 325 F (1)		265 – 325 F (1)		265 – 325 F (1)		

TABLE M.04.03– 4: SUPERPAVE MASTER RANGE FOR TRAFFIC LEVELS AND DESIGN VOLUMETRIC PROPERTIES.

Traffic Level	Design ESALs (million)	Number of Gyrations by Superpave Gyratory Compactor	
		Nini	Ndes
1*	< 0.3	6	50
2	0.3 to < 3.0	7	75
3	≥3.0	8	100

*** NOTE: Level 1 for use by Towns and Municipalities ONLY.**

TABLE M.04.03– 5: SUPERPAVE MINIMUM BINDER CONTENT BY MIX TYPE & LEVEL.

Mix Type	Level	Binder Content Minimum (1)
S0.25	1*	5.6
S0.25	2	5.5
S0.25	3	5.4
S0.375	1*	5.6
S0.375	2	5.5
S0.375	3	5.4
S0.5	1*	5.0
S0.5	2	4.9
S0.5	3	4.8
S1	1*	4.6
S1	2	4.5
S1	3	4.4

*** NOTE: Level 1 for use by Towns and Municipalities ONLY.**

Table M.04.03-6:
Modifications to Standard AASHTO and ASTM Test Specifications and Procedures.

AASHTO Standard Specification	
Reference	**Modification**
AASHTO 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 Methods of Test	
Reference	**Modification**
AASHTO T 27	Section 7.7 Samples are not washed
AASHTO T 30	Section 6.2 thru 6.5 Samples are not routinely washed
AASHTO M-156 /ASTM D 995	Section 8.7.3 *Accuracy: Batch Plants* The automation proportioning system shall be capable of consistently delivering mixtures within the full range of batch sizes within the following tolerances: *Total Batch Weight Of Paving Mix. %* *Batch aggregate component* ± 1.0% Note: AASHTO T 40 is modified as follows: Section 9.1.1 Sampling valve is located on bottom third of storage tank.
AASHTO T 164	Method A **APPARATUS:** Section 6. ConnDOT in addition to AASHTO apparatus includes infrared lamp and substitutes graduated cylinder with a 1000 ml flask. Section 7. Reagent. Must be Conn D.O.T. approved ******* Article 9.2.1 all classes of HMA except Class 4 are scooped from the sample container. Section 10.1 and 10.2 Moisture content is periodically determined on production samples as plant conditions require. Section 12.1 See Section 10 Section 12.5 Filter paper is dried and weighed in field using heat lamp or oven when an ash test is performed. Article 12.6.1 Extract is collected if an ash test is to be performed Article 12.6.2 Performed on selected samples only

	Article 12.6.3 A three test running average is used to correct for total binder in HMA.
AASHTO T 168	Samples are taken at one point in the pile. All types of bituminous concrete except Class 4 are scooped from the sample container instead of remixing and quartering. (Method verified by laboratory study). 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 be determine conformance to material specifications and to prioritize inspections by laboratory personnel.
AASHTO T 170	Recovery of Asphalt from Solution by Abson Method Delete the referenced section and replace with the language shown: 5.0 Apparatus 5.1 Centrifuge- batch unit capable of exerting a minimum centrifugal force of 770 times gravity or a continuous unit capable of exerting a minimum force of 3000 times gravity. 5.2. Centrifuge tubes- a 250mL wide mouth bottles 5.3.1. Extraction Flasks- a 500mL three angle necks and joints flask with 24/40 side necks. 5.3.2. Glass Tubing- Heat resistant glass tubing, having 10mm inside diameter and a gooseneck shaped delivery tube, for connecting the flask to the condenser. 5.3.3. Inlet Aeration Tube- 180mm in length having a 6mm outside diameter with a 10-mm bulb carrying six staggered holes approximately 1.5 mm in diameter. 5.3.4. Electric Heating Mantle- Variable transformer to fit a 500 mL flask. 5.3.5 Water-jacketed Condenser- Allihn type, with 200 mm minimum jacket length. 5.3.6. Thermometer- an ASTM low distillation thermometer having a range of –2 to 300°C (30 to 580°F), respectively, and conforming to the requirements in ASTM specification E 1 5.3.7. Gas Flow Meter- A type capable of indicating a gas flow of up to 1000 mL per minute. 5.3.8. Corks- No. 20 5.3.9. Flexible Elastomeric Tubing 5.3.10. Separatory Funnel-500 ml capacity or larger 6.0. Reagents and Materials 6.1. Carbon Dioxide Gas- A pressurized tank, with pressure-reducing valve. The solvent for extracting the asphalt from the mixtures should be reagent grade

	trichloroethylene or methylene chloride. Other solvents may affect the bitumen to change its properties significantly from that as it exists in the mixture. 8. Sample 8.1. The sample shall consist of the solution from previous extraction of a sample of sufficient mass to result in approximately 105 to 110 g of recovered bitumen. 9. Procedure 9.1. The entire procedure, form the start of the extraction to the final recovery, must be completed within 8 hours. 9.2 Centrifuge the solution from the previous extraction for a minimum of 30 minutes at 770 times gravity (approx. 2700rpm) in 250 mL wide mouth bottles. Assemble the apparatus as shown in Figure 1 with the separatory funnel in the thermometer hole in the cork. Lower the aeration tube so that the bulb is in contact with the bottom of the flask. Fill the separatory funnel with the centrifuged solution and open the stopcock to fill the flask approximately one-half full of solvent mixture. Apply low heat to the flask and start distillation. Introduce carbon dioxide gas at a low rate (approx. 100mL/minute) to provide agitation and prevent foaming. Adjust the funnel stopcock to introduce fresh solvent at a rate that will keep the flask approximately one half full during distillation, adding additional solvent mixture to the funnel into all solvent has been introduced into the distillation flask. When the temperature reaches 157 to 160°C (315 to 320°F), increase the carbon dioxide gas flow to approximately 900mL/minute. Maintain this gas flow rate for 20 minutes while also maintaining the temperature of the residue in the flask at 160 to 166°C (320 to 330°F).
AASHTO T 195	Section 4.3 only one truck load of mixture is sampled. Samples are taken from opposite sides of the load.
AASHTO T 209	Article 9.5.1 Bowl is suspended 2 minutes prior to reading rather than 10 minutes. This makes no significant difference in results. Section 7.2 The average of two bowls is used proportionally in order to satisfy minimum mass requirements. 8.3 Omit Pycnometer method.
AASHTO T 245	Article 3.3.2 A compacting temperature of 140 to 146°C (284 to 295°F) is used Article 3.5.2 Seventy-five (75) blows per side are used on Classes 1 and 12, per ConnDOT design requirements Section 3.1 for production testing: one specimen is molded for each extraction test for production over 275 metric tons/day (300 tons/day). Other mixtures: two specimens per extraction test.

AASHTO T 283	This protocol shall be performed at the HMA plant in accordance with section 7 on HMA S0.5 (all design levels) by the Contractor or their representative at a time designated by the Division Chief. TSR testing is required on all classes and design levels during the design phase and on all HMA S0.5 design levels during the production phase.
AASHTO 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 (**C**omposite **A**ggregate **C**orrection **F**actor **M**ethod **(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 Omit 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 Omit. A2.7 Omit 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 Omit 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 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.) 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.

AASHTO T 331	6.1 Cores are dried to a constant mass prior to testing using a core-dry machine.
AASHTO Standard Recommended Practices	
Reference	**Modification**
AASHTO R 35	**<u>Volumetric Calculations of VMA and Correction Factor</u>** VMA_a - Voids in Mineral Aggregate from (Va + Vbe) 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_a when the Pb_a x (100-Pb_t) / 100 is known and substituted for A_{cf}, as shown in *Formula 5.16.1A (ii)*. Test results from VMA_a shall therefore be required to meet all contract specifications. Values of VMA_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_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 HMA by the mix or air voids & effective binder method: $$VMA_a = V_a + \left[\frac{(Gmb_d \times (Pb_t - A_{cf})}{G_b}\right]$$ Where: VMA_a = VMA calculated from plant production mix(V_a + Vb_e) Gmb_d = Bulk specific gravity as determined by AASHTO T 166(M) Pb_t = Total Binder Content (corrected) by AASHTO T 308(M) A_{cf} = Absorption correction factor provided by Contractor (refer to B. i and ii) B. Determining the HMA mix binder correction factor for each class by use of percent absorption of water by AASHTO T 84/85, AASHTO M 323 and D_f 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 A_{cf} 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.* $A_{cf} = Df \times Pwa \times (100 - Pb_t) / 100$ *ii.* $A_{cf} = (Pb_a$ *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_a = as determined by AASHTO M 323 (from annual JMF submittal) D_f (Density Factor): The Contractor shall calculate the HMA 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*. *Formula 5.16.1B*. Determining the Density Factor *(D_f)* of mix design HMA: $$D_f = \left(\frac{Gse - Gsb}{Gsa - Gsb}\right)$$ Where: D_f = Density Factor or multiplier determined by AASHTO R-35(M) Gse = Effective Specific Gravity determined by AASHTO M-323 at plant Gsa = Apparent Specific Gravity determined by AASHTO T 84/85 of mix design Gsb = Bulk Specific Gravity determined by AASHTO T 84/85 of mix design
AASHTO R 26	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." 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. A copy of the Manual of Practice for testing asphalt binders in accordance with the Superpave PG Grading system shall be in the testing laboratory. 4. All laboratories testing binders for the Department are required to be accredited by the AASHTO Materials Reference Laboratory (AMRL). 5. 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. 6. 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. Suppliers shall provide AASHTO M-320 Table 2 testing at a minimum of once per month on one sample of material. Each supplier shall rotate the PG grade each month (including PMA), so that data can be collected for all the grades produced.

ON-THE-JOB TRAINING (OJT) WORKFORCE DEVELOPMENT PILOT

Description

To provide construction industry related job opportunities to minorities, women and economically disadvantaged individuals; and to increase the likelihood of a diverse and inclusive workforce on Connecticut Department of Transportation (ConnDOT) projects.

All contractors (existing and newcomers) will be automatically placed in the Workforce Development Pilot. Standard OJT requirements typically associated with individual projects will no longer be applied at the project level for new projects. Instead, these requirements will be applicable on an annual basis for each contractor performing work on ConnDOT projects.

The OJT Workforce Development Pilot will allow a contractor to train employees on Federal, State and privately funded projects located in Connecticut. However, contractors should give priority to training employees on ConnDOT Federal-Aid funded projects.

Funding

The Department will establish an OJT fund annually from which contractors may bill the Department directly for eligible trainee hours. The funds for payment of trainee hours on federal-aid projects will be allocated from the ½ of 1% provided for OJT funding, and will be based on hours trained, not to exceed a maximum of $25,000.00 per year; per contractor.

Minorities and Women

Developing, training and upgrading of minorities, women and economically disadvantaged individuals toward journeyperson level status is the primary objective of this special training provision. Accordingly, the Contractor shall make every effort to enroll minority, women and economically disadvantaged individuals as trainees to the extent that such persons are available within a reasonable area of recruitment. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training whether a member of a minority group or not.

Assigning Training Goals

The Department, through the OJT Program Coordinator, will assign training goals for a calendar year based on the contractor's past two year's activities and the contractor's anticipated upcoming year's activity with the Department. At the beginning of each year, all contractors eligible will be contacted by the Department to determine the number of trainees that will be assigned for the upcoming calendar year. At that time, the Contractor shall enter into an agreement with the Department to provide a self-imposed on-the-job training program for the calendar year. This agreement will include a specific number of annual training goals agreed to by both parties. The number of training assignments may range from one (1) to six (6) per

contractor per calendar year. Each January, a summary of the trainees required and the OJT Workforce Development Pilot package will be sent to participating contractors. The number of trainees assigned to each contractor in the summary will increase proportionately not to exceed 6, as shown in the following table. This package will also be provided to contractors as they become newly eligible for the OJT Workforce Development Pilot throughout the remainder of the year. Projects awarded after September 30 will be included in the following year's Program.

The dollar thresholds for training assignments are as follows:

$4.5 – 8 million=	1 trainee
$ 9 – 15 million=	2 trainees
$16 – 23 million=	3 trainees
$24 – 30 million=	4 trainees
$31 – 40 million=	5 trainees
$41 – and above=	6 trainees

Training Classifications

Preference shall be given to providing training in the following skilled work classifications. However, the classifications established are not all-inclusive:

Equipment Operators	Electricians
Laborers	Painters
Carpenters	Iron / Reinforcing Steel Workers
Concrete Finishers	Mechanics
Pipe Layers	Welders

The Department has on file common training classifications and their respective training requirements; that may be used by the contractors. Contractors shall submit new classifications for specific job functions that their employees are performing. The Department will review and recommend for acceptance the new classifications proposed by contractors, if applicable. New classifications shall meet the following requirements:

Proposed training classifications are reasonable and realistic based on the job skill classification needs, and the number of training hours specified in the training classification is consistent with common practices and provides enough time for the trainee to obtain journeyman level status.

Where feasible, 25% percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. The number of trainees shall be distributed among the work classifications on the basis of the contractor's needs and the availability of journeymen in the various classifications within a reasonable area of recruitment.

No employee shall be employed as a trainee in any classification in which they have successfully completed a training course leading to journeyman level status or in which they have been employed as a journeyman.

Records and Reports

The Contractor shall maintain enrollment in the program and submit all required reports documenting company compliance under these contract requirements. These documents and any other information shall be submitted to the OJT Program Coordinator as requested.

Upon the trainee's completion and graduation from the program, the Contractor shall provide each trainee with a certification Certificate showing the type and length of training satisfactorily completed.

Trainee Interviews

In order to determine the continued effectiveness of the OJT Program in Connecticut, the department will periodically conduct personal interviews with current trainees and may survey recent graduates of the program. This enables the OJT Program Coordinator to modify and improve the program as necessary. Trainee interviews are generally conducted at the job site to ensure that the trainees' work and training is consistent with the approved training program.

Trainee Wages

Contractors shall compensate trainees on a graduating pay scale based upon a percentage of the prevailing minimum journeyman wages (Davis-Bacon Act). Minimum pay shall be as follows:

60 percent	of the journeyman wage for the first half of the training period
75 percent	of the journeyman wage for the third quarter of the training period
90 percent	of the journeyman wage for the last quarter of the training period

In no case, will the trainee be paid less than the prevailing rate for general laborer as shown in the contract wage decision (must be approved by the Department of Labor).

Achieving or Failing to Meet Training Goals

The Contractor will be credited for each trainee currently enrolled or who becomes enrolled in the approved training program and providing they receive the required training under the specific training program. Trainees will be allowed to be transferred between projects if required by the Contractor's schedule and workload. The OJT Program Coordinator must be notified of transfers within five (5) days of the transfer or reassignments by e-mail (Phylisha.Coles@ct.gov).

Where a contractor does not or cannot achieve its annual training goal with female or minority trainees, they must produce adequate Good Faith Efforts documentation. Good Faith Efforts are those designed to achieve equal opportunity through positive, aggressive, and continuous result-oriented measures. 23 CFR § 230.409(g) (4). Contractors should request minorities and females from unions when minorities and females are under-represented in the contractor's workforce.

Whenever a contractor requests ConnDOT approval of someone other than a minority or female, the contractor must submit documented evidence of its Good Faith Efforts to fill that position with a minority or female. When a non-minority male is accepted, a contractor must continue to attempt to meet its remaining annual training goals with females and minorities.

Where a contractor has neither attained its goal nor submitted adequate Good Faith Efforts documentation, ConnDOT will issue a letter of non-compliance. Within thirty (30) days of receiving the letter of non-compliance, the contractor must submit a written Corrective Action Plan (CAP) outlining the steps that it will take to remedy the non-compliance. The CAP must be approved by ConnDOT. Failure to comply with the CAP may result in your firm being found non-responsive for future projects.

Measurement and Payment

Optional reimbursement will be made to the contractor for providing the required training under this special provision on ConnDOT Federal-Aid funded projects only.

Contractor will be reimbursed at $0.80 for each hour of training given to an employee in accordance with an approved training or apprenticeship program. This reimbursement will be made even though the Contractor receives additional training program funds from other sources, provided such other source does not specifically prohibit the contractor from receiving other reimbursement.

Reimbursement for training is made annually or upon the trainees completion and not on a monthly basis. No payment shall be made to the Contractor if either the failure to provide the required training, or the failure to hire the trainee as a journeyperson, is caused by the Contractor.

Program reimbursements will be made directly to the prime contractor on an annual basis. To request reimbursement, prime contractors must complete the Voucher for OJT Workforce Development Pilot Hourly Reimbursement for each trainee in the OJT Program. This form is included in the OJT Workforce Development Pilot package and is available on the Department's web site at:

www.ct.gov/dot

The completed form must be submitted to the Office of Contract Compliance for approval. The form is due on the 15th day of January for each trainee currently enrolled and for hours worked on ConnDOT Federal-Aid funded projects only.

SMALL CONTRACTOR AND SMALL CONTRACTOR MINORITY BUSINESS ENTERPRISES (SET-ASIDE)

March, 2001

NOTE: Certain of the requirements and procedures stated in this "Special Provision" are applicable prior to the execution of the Contract.

I. GENERAL

A. The Contractor shall cooperate with the Connecticut Department of Transportation (CONNDOT) in implementing the required contract obligations concerning "Small Contractor" and "Small Contractor Minority Business Enterprise" use on this Contract in accordance with Section 4a-60g of the Connecticut General Statutes as revised. References, throughout this "Special Provision", to "Small Contractors" are also implied references to "Small Contractor Minority Business Enterprises" as both relate to Section IIA of these provisions. The Contractor shall also cooperate with CONNDOT in reviewing the Contractor's activities relating to this provision. This "Special Provision" is in addition to all other equal opportunity employment requirements of this Contract.

B. For the purpose of this "Special Provision", the "Small Contractor(s)" and "Minority Business Enterprise(s)" named to satisfy the set-aside requirement must be certified by the Department of Administrative Services, Business Connections/ Set-Aside Unit [(860) 713-5236 www.das.state.ct.us/busopp.htm] as a "Small Contractor" and "Minority Business Enterprises" as defined by Section 4a-60g Subsections (1) and (3) of the Connecticut General Statutes as revised and is subject to approval by CONNDOT to do the work for which it is nominated pursuant to the criteria stipulated in Section IIC-3.

C. Contractors who allow work which they have designated for "Small Contractor" participation in the pre-award submission required under Section IIC to be performed by other than the approved "Small Contractor" organization and prior to concurrence by CONNDOT, will not be paid for the value of the work performed by organizations other than the "Small Contractor" designated.

D. If the Contractor is unable to achieve the specified contract goals for "Small Contractor" participation, the Contractor shall submit written documentation to CONNDOT's Manager of Construction Operations indicating his/her good faith efforts to satisfy goal requirements. Documentation is to include but not be limited to the following:

1. A detailed statement of the efforts made to select additional subcontract opportunities for work to be performed by each "Small Contractor" in order to increase the likelihood of achieving the stated goal.

2. A detailed statement, including documentation of the efforts made to contact and solicit contracts with each "Small Contractor", including the names, addresses, dates and telephone numbers of each "Small Contractor" contacted, and a description of the information provided to each "Small Contractor" regarding the scope of services and anticipated time schedule of items proposed to be subcontracted and the nature of response from firms contacted.

3. For each "Small Contractor" that placed a subcontract quotation which the Contractor considered not to be acceptable, provide a detailed statement of the reasons for this conclusion.

4. Documents to support contacts made with CONNDOT requesting assistance in satisfying the contract specified or adjusted "Small Contractor" dollar requirements.

5. Document other special efforts undertaken by the Contractor to meet the defined goal.

E. Failure of the Contractor to have at least the specified dollar amount of this contract performed by "Small Contractor" as required in Section IIA of this "Special Provision" will result in the reduction in contract payment to the Contractor by an amount equivalent to that determined by subtracting from the specific dollar amount required in Section IIA, the dollar payments for the work actually performed by each "Small Contractor". The deficiency in "Small Contractor" achievement, will therefore, be deducted from the final contract payment. However, in instances where the Contractor can adequately document or substantiate its good faith efforts made to meet the specified or adjusted dollar amount to the satisfaction of CONNDOT, no reduction in payments will be imposed.

F. All records must be retained for a period of three (3) years following completion of the contract and shall be available at reasonable times and places for inspection by authorized representatives of CONNDOT.

G. Nothing contained herein, is intended to relieve any contractor or subcontractor or material supplier or manufacturer from compliance with all applicable Federal and State legislation or provisions concerning equal employment opportunity, affirmative action, nondiscrimination and related subjects during the term of this Contract.

II. **SPECIFIC REQUIREMENTS**

In order to increase the participation of "Small Contractors", CONNDOT requires the following:

A. Not less than ____0.0____ (%) percent of the **final** value of this Contract shall be subcontracted to and performed by, and/or supplied by, manufactured by and paid to "Small Contractors" and/or "Small Contractors Minority Business Enterprises".

If the above percentage is zero (0%) AND an asterisk (*) has been entered in the adjacent brackets [ ], this Contract is 100% solely set-aside for participation by "Small Contractors" and/or "Small Contractors Minority Business Enterprises".

B. The Contractor shall assure that each "Small Contractor" will have an equitable opportunity to compete under this "Special Provision", particularly by arranging solicitations, time for the preparation of Quotes, Scope of Work, and Delivery Schedules so as to facilitate the participation of each "Small Contractor".

C. The Contractor shall provide to CONNDOT's Manager of Contracts within Seven (7) days after the bid opening the following items:

1. An affidavit (Exhibit I) completed by each named "Small Contractor" subcontractor listing a description of the work and indicating the dollar amount of all contract(s) and/or subcontract(s) that have been awarded to him/her for the current State Fiscal Year (July 1 - June 30) does not exceed the Fiscal Year limit of $10,000,000.00.

2. A certification of work to be subcontracted (Exhibit II) signed by both the Contractor and the "Small Contractor" listing the work items and the dollar value of the items that the nominated "Small Contractor" is to perform on the project to achieve the minimum percentage indicated in Section IIA above.

3. A certification of past experience (Exhibit III) indicating the scope of work the nominated "Small Contractor" has performed on all projects, public and private, for the past two (2) years.

4. In instances where a change from the originally approved named "Small Contractor" (see Section IB) is proposed, the Contractor is required to submit, in a reasonable and expeditious manner, a revised submission, comprised of the documentation required in Section IIC, Paragraphs 1, 2 and 3 and Section E together with documentation to substantiate and

justify the change, (i.e., documentation to provide a basis for the change) to CONNDOT's Manager of Construction Operations for its review and approval prior to the implementation of the change. The Contractor must demonstrate that the originally named "Small Contractor" is unable to perform in conformity to specifications, or unwilling to perform, or is in default of its contract, or is overextended on other jobs. The Contractor's ability to negotiate a more advantageous contract with another "Small Contractor" is not a valid basis for change. Documentation shall include a letter of release from the originally named "Small Contractor" indicating the reason(s) for the release.

D. After the Contractor signs the Contract, the Contractor will be required to meet with CONNDOT's Manager of Construction Operations or his/her designee to review the following:

1. What is expected with respect to the "Small Contractor" set aside requirements.

2. Failure to comply with and meet the requirement can and will result in monetary deductions from payment.

3. Each quarter after the start of the "Small Contractor" the Contractor shall submit a report to CONNDOT's Manager of Construction Operations indicating the work done by, and the dollars paid to each "Small Contractor" to date.

4. What is required when a request to sublet to a "Small Contractor" is submitted.

E. The Contractor shall submit to CONNDOT's Manager of Construction Operations all requests for subcontractor approvals on standard forms provided by the Department.

If the request for approval is for a "Small Contractor" subcontractor for the purpose of meeting the contract required "Small Contractor" percentage stipulated in Section IIA, a copy of the legal contract between the Contractor and the "Small Contractor" subcontractor must also be submitted at the same time. Any subsequent amendments or modifications of the contract between the Contractor and the "Small Contractor" subcontractor must also be submitted to CONNDOT's Manager of Construction Operations with an explanation of the change(s). The contract must show items of work to be performed, unit prices and, if a partial item, the work involved by both parties.

In addition, the following documents are to be attached:

(1) A statement explaining any method or arrangement for renting equipment. If rental is from a Contractor, a copy of Rental Agreement must be submitted.

(2) A statement addressing any special arrangements for manpower.

(3) A statement addressing who will purchase material.

F. Contractors subcontracting with a "Small Contractor" to perform work or services as required by this "Special Provision" shall not terminate such firms without advising CONNDOT, in writing, and providing adequate documentation to substantiate the reasons for termination if the designated "Small Contractor" firm has not started or completed the work or the services for which it has been contracted to perform.

G. Material Suppliers or Manufacturers

If the Contractor elects to utilize a "Small Contractor" supplier or manufacturer to satisfy a portion or all of the specified dollar requirements, the Contractor must provide the Department with:

1. An executed Affidavit Small Contractor (Set-Aside) Connecticut Department of Transportation Affidavit Supplier or Manufacturer (sample attached), and

2. Substantiation of payments made to the supplier or manufacturer for materials used on the project.

Brokers and packagers shall not be regarded as material Suppliers or manufacturer.

H. Non-Manufacturing or Non-Supplier "Small Contractor" Credit

Contractors may count towards its "Small Contractor" goals the following expenditures with "Small Contractor" firms that are not manufacturers or suppliers:

1. Reasonable fees or commissions charged for providing a bona fide service such as professional, technical, consultant or managerial services and assistance in the procurement of essential personnel, facilities, equipment, material or supplies necessary for the performance of the contract provided that the fee or commission is determined by the Department of Transportation to be reasonable and consistent with fees customarily allowed for similar services.

2. The fees charged for delivery of materials and supplies required on a job site (but not the cost of the materials and supplies themselves) when the hauler, trucker, or delivery service is not also the manufacturer of or a regular dealer in the materials and supplies, provided that the fee is determined by the Department of Transportation to be reasonable and not excessive as compared with fees customarily allowed for similar services.

3. The fees or commissions charged for providing any bonds or insurance specifically required for the performance of the Contract, provided that the fee or commission is determined by the Department of Transportation to be reasonable and not excessive as compared with fees customarily allowed for similar services.

III. BROKERING

For the purpose of this "Special Provision", a "Broker" is one who acts as an agent for others in negotiating contracts, purchases, sales, etc., in return for a fee or commission. Brokering of work by a "Small Contractor" is not allowed and is a contract violation.

IV. PRE-AWARD WAIVERS:

If the Contractor's submission of the "Small Contractor" listing, as required by Section IIC indicates that it is unable, by subcontracting to obtain commitments which at least equal the amount required by Section IIA, it may request, in writing, a waiver of up to 50% of the amount required by Section IIA. To obtain such a waiver, the Contractor must submit a completed "Application for Waiver of Small Contractor Minority Business Enterprise Goals" to CONNDOT's Manager of Contracts which must also contain the following documentation:

1. Information described in Section ID.

2. For each "Small Contractor" contacted but unavailable, a statement from each "Small Contractor" confirming its unavailability.

Upon receipt of the submission requesting a waiver, the CONNDOT's Manager of Contracts shall submit the documentation to the Director of the Office of Contract Compliance who shall review it for completeness. After completion of the Director of Contract Compliance's review, she/he should write a narrative of his/her findings of the application for a waiver, which is to include his/her recommendation. The Director of Contract Compliance shall submit the written narrative to the Chairperson of the DBE Screening Committee at least five (5) working days before the scheduled meeting. The Contractor shall be invited to attend the meeting and present his/her position. The DBE Screening Committee shall render a decision on the waiver request within five (5)

working days after the meeting. The DBE Screening Committee's decision shall be final. Waiver applications are available from the CONNDOT Manager of Contracts.

EXHIBIT I Mar. 01

SMALL CONTRACTOR/*MINORITY BUSINESS ENTERPRISE
(* Delete if not Applicable)
SET-ASIDE PROGRAM
(QUALIFICATION AFFIDAVIT)

PROJECT(s) _____
(INCLUDING TOWN & DESCRIPTION)

STATE OF _____CONNECTICUT_____

COUNTY OF_____

I_____,ACTING IN BEHALF
NAME OF PARTY SIGNING AFFIDAVIT
OF_____,DO HEREBY CERTIFY
PERSON FIRM OR ORGANIZATION
AND AFFIRM THAT THE INFORMATION SET FORTH BELOW IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE. AS OF THIS DATE_____THE LIST OF SMALL CONTRACTOR SET-ASIDE PROGRAM - CONTRACTS AND/OR SUBCONTRACTS AWARDED DURING THE CURRENT FISCAL YEAR (JULY 1 - JUNE 30) 20_____ IS AS FOLLOWS:

Col. 1 TOWN AND PROJECT NUMBER	Col. 2 STATE AGENCY WHICH AWARDED CONTRACT	Col. 3 CONTRACT AMOUNT AWARDED UNDER THIS PROGRAM	Col. 4 AMOUNT OF WORK SUBCONTRACTED FROM OTHER FIRMS UNDER THIS PROGRAM	Col. 5 TOTAL AMOUNT OF ALL WORK UNDER THIS PROGRAM Col. 3 Plus Col. 4
	TOTALS	$	$	$

_____
NAME OF PERSON, FIRM OR ORGANIZATION

(FIRM SEAL)

_____
SIGNATURE & TITLE OF OFFICIAL

SWORN TO AND SUBSCRIBED BEFORE ME BY_____

WHO IS PERSONALLY KNOWN TO ME, THIS_____DAY OF_____, 20_____

_____
(NOTARY PUBLIC)

MY COMMISSION EXPIRES_____SEAL

PLEASE NOTE THAT ALL THE WORK AWARDED OR SUBCONTRACTED TO YOUR FIRM UNDER THE SET-ASIDE PROGRAM IN A FISCAL YEAR (JULY 1-JUNE 30) INCLUDING THIS PROJECT, CANNOT BE MORE THAN $10,000,000.00

Mar.01

EXHIBIT II

DEPARTMENT OF TRANSPORTATION
CONTRACT DIVISION
2800 BERLIN TURNPIKE
NEWINGTON, CT 06111

CERTIFICATION OF WORK TO BE SUBCONTRACTED
NOMINATED SMALL CONTRACTOR/*MINORITY BUSINESS ENTERPRISE

* Delete if not applicable

PLEASE INCLUDE A COPY OF CERTIFICATION LETTER

CONTRACTOR_____

ADDRESS_____

TOWN_____PROJECT NO._____

DESCRIPTION OF PROJECT_____

_____

CONTRACT BID AMOUNT $_____

DATE_____

Listed below is the Nominated Small Contractor/Minority Business Enterprise for the above project and the requested data:

Name, Address & Tel No. of the Nominated Firm	ITEM(s)NUMBER(s) and Description of the Item(s) to be performed by and paid to the Subcontractor	Quantities (indicate if partial)	Prime's Bid Amount For Item	Dollar Amount Subcontracted	Small Business Set-Aside Dollar Requirement

Signed By _____
Small Contractor/*Minority Business Enterprise
(Subcontractor)

Signed By_____
Contractor

Title_____

EXHIBIT III

Mar.01

CERTIFICATION
PAST CONSTRUCTION EXPERIENCE

SMALL CONTRACTOR / * MINORITY BUSINESS ENTERPRISES

* Delete if not applicable

PLEASE LIST ALL CONSTRUCTION PROJECTS YOUR ORGANIZATION HAS WORKED ON IN THE PAST TWO FISCAL YEARS

PROJECT LOCATION NUMBER AND DESCRIPTION APPLICABLE	CONTRACT AMOUNT	IF WORK PERFORMED AS PRIME GIVE OWNERS NAME IF WORK PERFORMED AS SUBCONTRACTOR GIVE CONTRACTORS NAME	START DATE	ACTUAL OR ESTIMATED COMPLETION DATE	NAME AND PHONE OF OWNER OR PRIME CONTRACTOR AS

SIGNED BY: _____

SMALL BUSINESS CONTRACTOR
*MINORITY BUSINESS ENTERPRISES

D.O.T. PROJECT NO. _____

* Delete if not applicable

MARCH, 2001

SMALL CONTRACTOR/SMALL CONTRACTOR MINORITY BUSINESS ENTERPRISE (MBE) (SET-ASIDE) CONNECTICUT DEPARTMENT OF TRANSPORTATION AFFIDAVIT – SUPPLIER OR MANUFACTURER

This affidavit must be completed by the State Contractor's designated Small Contractor/ Small Contractor Minority Business Enterprise (MBE), notarized and attached to the contractor's request to utilize a Small Contractor/Small Contractor Minority Business Enterprise (MBE) supplier or manufacturer as a credit towards its Small Contractor/Small Contractor Minority Business Enterprise (MBE) contract requirement; failure to do so will result in not receiving credit towards the contract Small Contractor/Small Contractor Minority Business Enterprise (MBE) requirement.

State Project No. _____
Federal Aid Project No. _____
Description of Project _____

I, _____, acting in behalf of _____
(Name of person signing Affidavit) (Small Contractor/Small Contractor MBE contractor person,
_____ of which I am the_____ affirm that _____
firm, association or certify and corporation) (Title of Person) (Small
_____is a certified Small Contractor/Small
Contractor/Small Contractor MBE person, firm, association or corporation)
Contractor Minority Business Enterprise, as defined by Section 4a-60g of the Connecticut General Statutes, as revised.

I further certify and affirm that _____
(Small Contractor/Small Contractor MBE person, firm, association or corporation)
will assume the actual and contractual responsibility for the provision of the materials and/or supplies sought by _____. If a manufacturer, I produce goods from raw
(State Contractor)
materials or substantially alter them before resale, or if a supplier, I perform a commercially useful function in the supply process.

I understand that false statements made herein are punishable at Law (Sec. 53a-157, CGS, as revised).

_____
(Name of Small Contractor/Small Contractor MBE person, firm, association or corporation)

_____
(Signature and Title of Official making the Affidavit)

Subscribed and sworn to before me, the _____ day of _____ 200____.

_____
Notary Public (Commissioner of the Superior Court)

My Commission Expires _____

CERTIFICATE OF CORPORATION

I, _____, certify that I am the _____ (Official) of the Corporation named in the foregoing instrument; that I have been duly authorized to affix the seal of the Corporation to such papers as require the seal; that _____, who signed said instrument on behalf of the Corporation, was then _____ of said corporation; that said instrument was duly signed for and in behalf of said Corporation by authority of its governing body and is within the scope of its corporation powers.

_____

(Signature of Person Certifying) (Date)

(Corporate Seal)

ITEM #0177150A – GENERAL BUILDING RENOVATION

Description: Under this item, the Contractor shall complete all work depicted on the Contract Plans and described in the CSI-formatted Specifications that make up this Major Lump Sum Item (MLSI). Refer to Form 816 Article 1.20-1.02.04 for additional information in this regard.

Any work incidental to another bid item which is not specifically described or included in the bid item, but which is required for performance and completion of the work required under the Contract, shall be considered to be included under this item.

Materials: All materials shall be as required by the Contract Plans and as described in the CSI-formatted Specifications that make up this MLSI.

Construction Methods: All methods of construction shall conform to the requirements as stipulated in the CSI-formatted Specifications that make up this MLSI.

Method of Measurement: This item will be paid for at the contract lump sum price for "General Building Renovation" complete.

Basis of Payment: This item will be paid for at the contract lump sum price for "General Building Renovation", which price shall include all administrative and procedural requirements, material, equipment, labor, and work incidental thereto.

PAY ITEM	PAY UNIT
General Building Renovation	LS

ITEM #0603169A – PROGRESS PHOTOGRAPHS

Description: Under this item, the Contractor shall engage a qualified commercial photographer to take photographs during construction. The photographer shall be a firm or an individual of established reputation that has been regularly engaged as a professional photographer for not less than 3 years.

At the Preconstruction Meeting, submit to the Designer for approval the name of the photographer whom will be responsible for taking the photographs during construction.

Submit photos of each view within seven (7) calendar days of taking photographs. Three (3) photographic sets of photos shall be submitted. ALL photos shall be submitted in IBM-PC compatible digital format on compact disc (CD). Other than the photo thumbnail index and the photo key plan required for submission with each CD, no other hardcopy photos shall be required for the project. One (1) set of photos (on CD) of each submittal shall be sent directly to each of the following offices:

1. Office of Facilities Design, Connecticut Department of Transportation, 2800 Berlin Turnpike, P.O. Box 317546, Newington, CT 06131-7546, Attention: Mr. Theodore H. Nezames, Room 3405NW.
2. District 2 Construction, Connecticut Department of Transportation, Project Chief Inspector.
3. Bureau of Finance and Administration, Property and Facilities Services, Connecticut Department of Transportation, 2800 Berlin Turnpike, P.O. Box 317546, Newington, CT 06131-7546, Attention: Mr. Daniel J. Smachetti, Room 2448SW.

Each CD and CD jewel case shall be labeled with the name of the project, State project number, name of the Contractor, date of submission, and name and address of the photographer.

Materials:

Provide digital images in IBM-PC compatible JPEG format, with uncompressed (open) image size equal to or greater than the following dimensions: Pixel Dimensions = 1596 x 2000; Resolution = 200 pixels/inch. JPEG compression for each image shall equal "Quality 7" (High). Images shall be color (RGB mode).

Digital Cameras used for the purpose of creating the above noted image files shall have a minimum sensor size of 7 million pixels.

Image files shall be named and a photo thumbnail index created with the following file naming convention: *Project number_date of submission_photo number.jpg*

For example: If the first set of photos on CD for project number 172-407, is submitted on 12/13/01, the first photo of the submission shall be file named: 172407_121301_1.jpg and the

tenth photo of the set shall be file named: 172407_121301_10.jpg. In the second set of photos on CD, submitted 1/12/02, the first photo of the set shall be file named: 172407_011202_1.jpg

A hardcopy "Photo Thumbnail" index shall be provided with each CD submission. The photo thumbnails shall be printed on 8 ½" x 11" "glossy photo quality" ink jet paper with a minimum 720 dot-per-inch ink jet printer. The thumbnail images shall be a minimum 200 x 250 pixels at 200 pixel per inch resolution. The file names shall be located under each image. The thumbnail images shall be arranged so that they can all be contained on a single 8 ½-in by 11-in inkjet print. *For example*, 35 images would be arranged in five (5) columns and seven (7) rows. The CD shall also contain the digital file of the photo thumbnail index in jpeg format. The file shall share the same format as the above noted photo file format but the word "index" shall be placed in the location of the photo number. *For example*: 172407_121301_index1.jpg

Photos shall be numbered and referenced by number on a "Photo Key Plan." A hardcopy of the photo key plan shall be provided with each CD submission. The photo key plan shall be printed on 8 1/2"x 11" "glossy photo quality" ink jet paper with a minimum 720 dot-per-inch ink jet printer. The key plan shall be made on digital images of the projects overall site plans and/or the overall building plans, as appropriate for the photos being submitted, and shall include an arrow pointing in the direction of the photo with the associated photo number. The CD shall also contain the digital file of the photo key plan in jpeg format. The file shall share the same format as the above noted photo file format but the word "key plan" shall be placed in the location of the photo number. 172407_121301_keyplan1.jpg.

In lieu of using a digital camera to provide the above noted image files, standard 35 mm cameras and 35 mm color negative film may be used to take the images, and the images may then be captured as a digital file through the use of a designated 35mm film scanner. The 35mm scanner must have the following minimum specifications: 2700 dot per inch optical resolution; 3.4 Dmax; 36 bit color depth. The use of flatbed scanners shall not be permitted for this purpose.

Project progress photos shall be submitted as digital files on write-once CD-ROM in a jewel case on a monthly basis. **All subsequent CD submissions shall include the image files of the previous submissions and an updated hardcopy of the photo thumbnail index that contains all current and previous photos.**

Construction Methods:

Where used herein, one set of photographs will be defined as twenty-four (24) photographs.

Before starting construction, take one set of color photographs of the site and surrounding properties from different points of view as selected by the Engineer. Take photographs to show existing conditions to the property before starting Work. Take photographs of existing buildings either on or adjoining the property in sufficient detail to record accurately the physical conditions at the start of construction.

Take one set of color photographs at no greater than monthly intervals, coinciding as closely as possible with the completion of a major construction phase. The photographer shall select the vantage points for each shot each month to best show the status of construction and progress since the last photographs were taken. Prior to taking any photographs, review the proposed vantage points for each shot with the Engineer. Photographs are for a record of the progress of work. Therefore, they shall be taken at a maximum interval of one month, whether or not they show any completion of work performed during the preceding month.

Take one set of color photographs upon notification by the Engineer of Final Inspection of the Project. Prior to taking any photographs, review the proposed vantage points for each shot with the Engineer. Take photographs from opposing views of the site in an effort to display various characteristics of the new construction.

Method of Measurement: This work will be measured for payment by the number of photographic sets submitted to the Engineer. "Each" photographic set shall be defined as twenty-four (24) photographs. For purposes of bidding, the pay unit for a photographic set shall be "Each."

Basis of Payment: This work will be paid for at the Contract unit price each for "Progress Photographs" which price shall include all material, equipment, and labor incidental thereto. Where any submission's image files do not conform to the requirements herein, the Contractor shall not receive any payment for the item.

Pay Item	Pay Unit
Progress Photographs	EA

ITEM #0701051A – TIMBER DECK

Description: Under this item, the Contractor shall remove and replace timber deck (plywood) on the roof that has been damaged. The limits of the plywood replacement will be determined at the Pre-Installation Meeting for the PVC roofing system by the PVC roofing system's manufacturer representative, the roof installer, the Contractor, the Designer, and the Engineer. Additionally, under this item the Contractor shall remove and replace plywood elsewhere on the shed as required or as directed by the Engineer.

Materials:

Plywood Roof/Wall Sheathing: Exterior, Structural 1, 5/8" nominal thickness or match existing

Construction Methods:

Do not use materials with defects that impair quality of sheathing or pieces that are too small to use with minimum number of joints or optimum joint arrangement.

Cut panels at penetrations, edges, and other obstructions of work; fit tightly against abutting construction, unless otherwise indicated.

Securely attach to substrate by fastening as indicated, complying with Table 2304.9.1, "Fastening Schedule," in ICC's "International Building Code."

Use common wire nails, unless otherwise indicated. Make tight connections. Install fasteners without splitting wood.

Coordinate sheathing installation with flashing and joint-sealant installation so these materials are installed in sequence and manner that prevent exterior moisture from passing through completed assembly.

Coordinate sheathing installation with installation of materials installed over sheathing so sheathing is not exposed to precipitation or left exposed at end of the workday when rain is forecast.

Method of Measurement: This work will be measured for payment by the actual number of square feet of timber decking installed.

Basis of Payment: This work will be paid for at the Contract unit price square foot for "Timber Deck" which price shall include all material, equipment, and labor incidental thereto.

Pay Item	Pay Unit
Timber Deck	SF

ITEM #0969070A – CONSTRUCTION FIELD OFFICE FURNISHINGS AND EQUIPMENT

Description: This item requires that all equipment, labor, materials, service contracts, maintenance, replacements, and incidental work necessary to maintain said equipment, be provided by the Contractor, for the duration of the work, and if necessary, for a maximum of ninety days thereafter. The equipment will be supplied for the exclusive use of ConnDOT forces and others who may be engaged to augment ConnDOT forces with relation to the contract. Ownership and liability of the equipment shall remain with the Contractor.

Materials/Supplies/Equipment: Materials, supplies and equipment shall be in like new condition as approved by the Engineer.

General Requirements: This item does not include an office, but does include the equipment indicated below.

The Contractor shall provide the additional equipment and/or services described in this specification to the satisfaction of the Engineer.

The following equipment shall be provided:

QTY	Description:
1	Digital Camera as specified below under Computer Hardware and Software. All supplies and maintenance shall be provided by the Contractor.
1	Cellular Phone as specified below under Computer Hardware and Software. All supplies, maintenance and service plans shall be provided by the Contractor.
1	Laptop computer as specified below under Computer Hardware and Software. All supplies and maintenance shall be provided by the Contractor.

The equipment required herein shall remain the property of the Contractor. Any supplies required to maintain or operate the equipment above listed above shall be provided by the Contractor for the duration of the project at no additional charge.

Computer Hardware and Software:

The ConnDOT Project Engineer will provide the Contractor with a copy of the current PC specifications as soon as possible after the contract is awarded.

Before ordering the computer hardware and software, the Contractor must submit a copy of their proposed PC specifications to the ConnDOT Project Engineer for review by the ConnDOT Data Center. If the specification meets or exceeds the minimum specifications listed below, then the Contractor will be notified that the order may be placed.

Arrangements must be made a minimum of 24 hours in advance of delivery of equipment to the Data Center. Arrangements should be made by calling 860-594-3500 and following the

instructions. All software, hardware and licenses listed below shall be clearly labeled, specifying the (1) Project No., (2) Contractor Name, (3) Project Engineer's Name and (4) Project Engineer's Phone No., and shall be delivered to the ConnDOT Data Center, 2710 Berlin Turnpike, Newington, CT, where it will be configured and prepared for field use. Installation if necessary will then be coordinated with ConnDOT field personnel.

The computer system furnished shall have all software and hardware necessary for the complete installation of the latest versions of the software listed, and therefore supplements the minimum specifications below. The Engineer reserves the right to expand or relax the specification to adapt to the software and hardware limitations and availability, the compatibility with current agency systems, and to provide the Department with a computer system that can handle the needs of the project. This requirement is to ensure that the rapid changing environment that computer systems have experienced does not leave the needs of the project orphan to what has been specified. **Price adjustment due to the change in the minimum system requirements will not be entertained.**

The Contractor shall provide the Engineer with a licensed copy registered in the Department's name of the latest versions of the software listed and maintain customer support services offered by each software producer for the duration of the Contract. The Contractor shall deliver to the Engineer all supporting documentation for the software and hardware including any instructions or manuals. The Contractor shall provide original backup media for the software.

The Contractor shall provide the computer system with all required supplies, maintenance and repairs (including labor and parts) throughout the Contract life.

Once the Contract has been completed, the computer will remain the property of the Contractor. Prior to the return of any computer(s) to the Contractor, field personnel will coordinate with the Data Center personnel for the removal of Department owned equipment, software, data, and associated equipment.

A) Digital Camera – Minimum Specification:

Optical – 5 mega pixel, with 3x optical zoom.
Memory – 16 GB.
Features – Date/time stamp feature.
Connectivity – USB cable or memory card reader.
Software – Must be compatible with Windows 7 Professional 64-Bit.
Power – Rechargeable battery and charger.

B) Laptop Computer – Minimum Specification:

Processor – Intel® Core i5 Processor (2.50 GHz, 1333 MHz FSB, 3M Cache)
Memory – 4 GB DIMM DDR3 1333MHz.
Screen – 14.0 inch LED anti-glare.
Graphics – Intel Graphics Media Accelerator 3000. or equivalent.
Hard Drive – 250 GB 7200 rpm hard drive (Western Digital, IBM or Seagate).

USB ports – Four (4).
Optical Drive – CD-RW/DVD-RW Combo.
Multimedia Package – Integrated microphone and speakers.
Integrated Network Adapter – comparable to 3COM PCI 10/100/1000 twisted pair Ethernet.
Wireless Network Adapter – Intel® Centrino a/b/g/n.
Card Reader – multi-card reader including SD.
Battery – Two (2) 9-cell batteries: 1-primary and 1-spare.
Power adapters – One (1) AC wall adapter and One (1) 12 Volt DC Auto adapter.
Mouse – Cordless laser 2-button mouse with scroll wheel.
Operating System – Windows 7 Professional 64-Bit Service Pack 1.
Application Software – MS Office 2010 Professional Edition.
Additional Software (Latest Releases, including subscription services for the life of the Contract.–

- Norton Anti-Virus,
- CD/DVD burning software (ROXIO or NERO),
- Adobe Acrobat Standard

Resource or Driver CD/DVD – CD/DVD with all drivers and resource information so that computer can be restored to original prior to shipment back to the contractor.
Carrying Case – Carrying case sized to carry laptop and accessories.

The Contractor is responsible for service and repairs to all computer hardware. All repairs must be performed with-in 48 hours. If the repairs require more than a 48 hours then a replacement must be provided. All supplies and maintenance for the computers, laptops, shall be provided by the Contractor.

Repair(s) or replacement(s) of equipment for any reason shall be provided at no additional cost to the State excluding the case stated below.

Major repair or replacement of equipment due to physical damage, shall be limited to not more than two (2) occurrences per unit.

If the number of occurrences of major repair or replacement of computer equipment exceed two (2) occurrences per unit, due to physical damage, the cost of the repair or replacement, excluding the Contractor's labor and equipment costs, shall be compensated on a Cost Plus basis under a separate item.

Communications:

The Contractor shall provide rugged cell phones with unlimited nation-wide calling plan that operates on the Verizon, ATT or Sprint networks. The phones should be capable of sending and receiving text messaging and shall also include voice mail. Additional features beyond those described shall be at no additional cost to the Department. Accessories for each cell phone shall include holster, AC wall charger, DC auto charger, and extended life battery.

Method of Measurement: The furnishing and maintenance of the construction field office furnishings and equipment will be measured for payment by the number of calendar months that the equipment is in place and in operation, measured to the nearest month.

There will not be a price adjustment due to a change in the minimum computer system requirements.

Basis of Payment: The furnishing and maintenance of the construction field office furnishings and equipment will be paid at the listed unit price per month for the respective item "Construction Field Office Furnishings and Equipment", which price shall include all material, equipment, labor, service contracts, licenses, repair or replacement of hardware and software, and work incidental thereto, as outlined in the various sections of this specification.

The State will be responsible for payment of data communication user fees and for toll calls by State personnel.

Pay Item	Pay Unit
Construction Field Office Furnishings and Equipment	Month

CSI SPECIFICATIONS

INDEX OF CSI-FORMATTED SPECIFICATION AND
CORRESPONDING FORM 816 ITEM NUMBER
REHABILITATION OF SALT SHEDS IN THE TOWNS OF PRESTON, PUTNAM AND THOMPSON, CONNECTICUT
STATE PROJECT NO. 172-407

Item #	CSI Sect.	Description of Item
		DIVISION 6 – WOOD, PLASTICS, AND COMPOSITES
0177150A	061053	MISCELLANEOUS ROUGH CARPENTRY
		DIVISION 7 - THERMAL AND MOISTURE PROTECTION
0177150A	075419	POLYVINYL-CHLORIDE (PVC) ROOFING
0177150A	079200	JOINT SEALANTS
		DIVISION 8 - OPENINGS
0177150A	089000	LOUVERS AND VENTS
		DIVISION 9 - FINISHES
0177150A	099113	EXTERIOR PAINTING

SECTION 061053 - MISCELLANEOUS ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY:

A. This Section includes the following:

1. Framing with dimension lumber.
2. Wood blocking, wood furring, and nailers.
3. Pressure Treated Plywood.

1.2 DEFINITIONS:

A. Dimension Lumber: Lumber of 2 inches nominal (38 mm actual) or greater but less than 5 inches nominal (114 mm actual) in least dimension.

B. Lumber grading agencies, and the abbreviations used to reference them, include the following:

1. NeLMA: Northeastern Lumber Manufacturers' Association.
2. WCLIB: West Coast Lumber Inspection Bureau.
3. WWPA: Western Wood Products Association.

1.3 SUBMITTALS:

A. Submit the following in accordance with form 816 Article 1.20- 1.05.02 and NOTICE TO CONTRACTOR- SUBMITTALS.

B. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.

1.4 DELIVERY, STORAGE, AND HANDLING:

A. Stack lumber flat with spacers between each bundle to provide air circulation. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL:

A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.

1. Factory mark each piece of lumber with grade stamp of grading agency.

2.2 WOOD-PRESERVATIVE-TREATED MATERIALS:

A. Preservative Treatment by Pressure Process: AWPA U1; Use Category UC3b or approved equal.

1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.

B. Maximum Moisture Content: 19 percent.

C. Application: Treat all plywood unless otherwise indicated.

2.3 SHEATHING

A. Plywood Sheathing: Exterior sheathing.

2.4 DIMENSION LUMBER FRAMING:

A. Maximum Moisture Content: 19 percent.

B. Other Framing: Construction or No. 2 grade and any of the following species:

1. NeLMA: Northeastern Lumber Manufacturers' Association.
2. WCLIB: West Coast Lumber Inspection Bureau.
3. WWPA: Western Wood Products Association.

2.5 MISCELLANEOUS LUMBER:

A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:

1. Blocking.

2. Nailers.
3. Furring.

B. For items of dimension lumber size, provide Construction or No. 2 grade lumber with 19 percent maximum moisture content and any of the following species:

1. NeLMA: Northeastern Lumber Manufacturers' Association.
2. WCLIB: West Coast Lumber Inspection Bureau.
3. WWPA: Western Wood Products Association.

C. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.

D. For furring strips for installing plywood select boards with no knots capable of producing bent-over nails and damage to sheeting

2.6 FASTENERS:

A. General: Provide fasteners of size and type indicated that comply with requirements specified herein for material and manufacture.

1. Where carpentry is exposed to weather or in an area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.

B. Nails: ASTM F 1667.

C. Power-Driven Fasteners: NES NER-272.

D. Wood Screws: ASME B18.6.1.

E. Lag Bolts: ASME B18.2.1 (ASME B18.2.3.8M).

F. Bolts: Steel bolts complying with ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6); with ASTM A 563 (ASTM A 563M) hex nuts and, where indicated, flat washers.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL:

A. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry to other construction; scribe and cope as needed for accurate fit. Locate furring, nailers, blocking, and similar supports to comply with requirements for attaching other construction.

B. Framing Standard: Comply with AF&PA's "Details for Conventional Wood Frame Construction," unless otherwise indicated.

C. Provide blocking and framing as indicated and as required to support facing materials, specialty items, roofing components, trim, and the snow retention system.

D. Sort and select lumber so that natural characteristics will not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.

E. Securely attach carpentry work to substrate by anchoring and fastening as indicated, complying with the following:

1. NES NER-272 for power-driven fasteners.
2. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.

F. Make tight connections between members. Install fasteners without splitting wood make nail heads flush with finished wood surfaces, unless countersinking is required.

3.2 BLOCKING AND NAILER INSTALLATION:

A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.

3.3 WOOD FURRING INSTALLATION:

A. Install level and plumb with closure strips at edges and openings. Shim with wood as required for tolerance of finish work.

3.4 PROTECTION:

A. Protect rough carpentry from weather. If, despite protection, rough carpentry becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION 061053

SECTION 075419 - POLYVINYL-CHLORIDE (PVC) ROOFING

PART 1 - GENERAL

1.1 SUMMARY:

A. Section Includes:

1. Fully-Adhered polyvinyl-chloride (PVC) “Décor Profile” membrane roofing system.
2. Substrate/roof board.
3. Vapor retarder.
4. Snow guards/retention system.
5. Roof warranty sign.

B. Related Requirements:

1. Section 061053 "Miscellaneous Rough Carpentry" for wood nailers, curbs, and blocking.
2. Section 079200 "Joint Sealants" for joint sealants, joint fillers, and joint preparation.

1.2 DEFINITIONS:

A. Roofing Terminology: Definitions in ASTM D 1079 and glossary in NRCA's "The NRCA Roofing and Waterproofing Manual" apply to work of this Section.

B. The “Décor Profile” membrane roofing system is known for its aesthetically appealing appearance which is essential in this application as the steep sloped roof is visible from the ground. This system shall have the appearance and characteristics (such as flatness) of a standing seam metal roof.

1.3 PREINSTALLATION MEETINGS:

A. Before starting roof replacement, conduct a Preinstallation Meeting at the Project Site in compliance with the requirements of Form 816 Article 1.20-1.05.24 subsection 2.

1. Meet with Owner, Designer, Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, and installers whose work interfaces with or affects roofing.
2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.

3. Review and finalize construction schedule, and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
4. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
5. Review structural loading limitations of roof deck during and after roofing.
6. Review flashings, special roofing details, roof drainage (water shield), and condition of other construction that affects roofing system.
7. Review temporary protection requirements for roofing system during and after installation.
8. Review roof observation and repair procedures after roofing installation.

1.4 SUBMITTALS:

A. Submit the following in accordance with Form 816 Article 1.20-1.05.02 and NOTICE TO CONTRACTOR – SUBMITTALS.

B. Product Data: For each type of product.

C. Shop Drawings: For roofing system. Include plans, elevations, sections, details, and attachments to other work, including:

1. Flashings and membrane terminations.
2. Roof plan showing orientation of roof deck and orientation of membrane roofing with Décor Profile spacing.
3. Water shield and end cap terminations.

D. Samples for Verification: For the following products:

1. Sheet roofing, of color required.
2. Substrate/ roof board.
3. Water shield profile with water shield end cap (1’ long).

E. Manufacturer Certification Letter in accordance with NOTICE TO CONTRACTOR – POTENTIAL FOR ASBESTOS CONTAINING MATERIALS.

F. Qualification Data: For Installer and manufacturer.

G. Manufacturer Certificates: Signed by roofing manufacturer certifying that roofing system complies with requirements specified in Part 2.2, "Performance Requirements."

1. Submit evidence of compliance with performance requirements.

H. Product Test Reports: For components of roofing system, for tests performed by manufacturer and witnessed by a qualified testing agency.

I. Sample Warranties: For manufacturer's special warranties.

J. Maintenance Data: For roofing system to include in the operation and maintenance manuals specified in Form 816 Article 1.20-1.08.14 subsection 2 and described in NOTICE TO CONTRACTOR – CLOSEOUT DOCUMENTS.

1.5 QUALITY ASSURANCE:

A. Manufacturer Qualifications: A qualified manufacturer that is FM Global approved for roofing system identical to that used for this Project.

B. Installer Qualifications: A qualified firm that is approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.

1.6 DELIVERY, STORAGE, AND HANDLING:

A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.

B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.

1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.

C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with roof board manufacturer's written instructions for handling, storing, and protecting during installation.

D. Handle and store roofing materials, and place equipment in a manner to avoid permanent deflection of deck.

1.7 FIELD CONDITIONS:

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.

1.8 WARRANTY:

A. Refer to Form 816 Article 1.20-1.06.08 and NOTICE TO CONTRACTOR – CLOSEOUT DOCUMENTS for additional information.

B. Roofing Manufacturer's Warranty: Submit a written warranty without monetary limitation (no-dollar-limit), signed by the roofing system manufacturer agreeing to promptly repair leaks resulting from defects in factory materials or site workmanship. Warranty shall cover the entire roofing system and shall be an all-inclusive "edge-to-edge" warranty. All roofing work performed under this Section shall be warranted by the roofing manufacturer for the following warranty period: 20 years from the issuance of the Certificate of Compliance.

C. Special Project Warranty: All roofing work performed under this Section shall be warranted by the Contractor for the following warranty period: 2 years from the issuance of the Certificate of Compliance.

PART 2 - PRODUCTS

2.1 MANUFACTURERS:

A. Source Limitations: Obtain components including fasteners for roofing system from same manufacturer as membrane roofing or manufacturer approved by membrane roofing manufacturer.

2.2 PERFORMANCE REQUIREMENTS:

A. General Performance: Installed roofing and flashings shall withstand specified wind speeds, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Roofing and flashings shall remain watertight.

B. Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roofing manufacturer based on testing and field experience.

C. Roofing System Design:

1. Basic Wind Speed: 115 mph (Preston); all other locations 100 mph.

D. FM Global Listing: Roofing, flashings, and component materials shall comply with requirements in FM Global 4470, as applicable. Identify materials with FM Global markings.

1. Fire/Windstorm Classification: Class 1A-90.
2. Hail-Resistance Rating: MH.

2.3 PVC MEMBRANE ROOFING:

A. PVC Sheet: ASTM D 4434/D 4434M, Type II, Grade I, glass-fiber reinforced, felt backed.

1. Basis of Design Product: Subject to compliance with requirements, provide products manufactured by Sarnafil Inc., or an approved equal.
2. Thickness: 80 mil, minimum.
3. Exposed Face Color: Custom color equal to “Mansard Brown” as selected from Pac-Clad Petersen Aluminum, or an approved equal.

B. PVC Extrusion: Manufacturer’s standard height, base, profile and length.

1. Basis of Design Product: Subject to compliance with requirements, provide “Décor Profile” by Sarnafil Inc., or an approved equal.
2. Exposed Face Color: Match PVC Sheet.

C. Refer to Part 3.6C to ensure the proper quantity of PVC Sheet is ordered.

2.4 AUXILIARY ROOFING MATERIALS:

A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with roofing.

1. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.

B. Sheet Flashing: Manufacturer's standard sheet flashing of same material, type, reinforcement, thickness, and color as PVC sheet.

C. Water Shield: 0.050-inch aluminum with Kynar 500 finish, “Mansard Brown” as selected from Pac-Clad Petersen Aluminum, or an approved equal.

D. Bonding Adhesive: Manufacturer's standard.

E. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Global 4470, designed for fastening roofing to substrate, and acceptable to roofing system manufacturer.

F. Miscellaneous Accessories: Provide sealers and other required accessories.

2.5 SUBSTRATE/ROOF BOARDS:

A. Basis of Design Manufacturer: Subject to compliance with requirements, provide product manufactured by Georgia-Pacific Corporation or an approved equal.

1. Substrate/Roof Board: ASTM C 1177/C 1177M, gypsum hardboard with glass-mat facers and a pre-primed surface on one side, 1/2 inch thick by 4-ft high by 8-ft long. Smaller sheet sizes shall not be permitted.

B. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Global 4470, designed for fastening substrate board to roof deck.

2.6 VAPOR RETARDER:

A. Polyethylene Film: ASTM D 4397, 10 mils thick, minimum

1. Tape: Pressure-sensitive tape of type recommended by vapor-retarder manufacturer for sealing joints and penetrations in vapor retarder.

2.7 SNOW-GUARDS/RETENTION SYSTEM:

A. Snow Guards, General: Prefabricated, non-corrosive units designed to be installed to PVC sheet roofing, complete with manufacturer-specific anchoring system.

1. Basis of Design Product: Subject to compliance with requirements, provide "Colorgard" products manufactured by Alpine Snow Guard, or an approved equal.
2. Brackets: 6000 Series Aluminum.
3. Base Plate: 304 Stainless Steel.
4. Aluminum Bar: Receptacle in face to receive color- matched insert strips.
5. Color Strips: 2" wide, match PVC sheet exposed face color.
6. Fasteners: Provide fasteners to penetrate the roofing assemble.

2.8 ROOF WARRANTY SIGN:

A. Materials: Provide cast (not extruded or continuous cast) methyl methacrylate monomer plastic sheet, in sizes and thickness indicated, with a minimum flexural strength of 16,000 psi when tested according to ASTM D 790, with a minimum allowable continuous service temperature of 176 deg F and of the following general types:

1. Engraved Copy: Engrave copy characters through the first background layer to expose the contrasting color of the inner core of the engraving stock.

a. Panel Size: 18"x20", long side horizontal.
b. Engraving Stock Thickness: 1/8-inch minimum.
c. Engraved Letter proportion: Letters and Numbers on signs shall have a width-to-height ratio between 3:5 and 1:1 and a stroke-width-to-height ratio between 1:5 and 1:10.
d. Engraved Letter Size: Characters shall be 5/8 inch high.

e. Background or first layer of engraving stock: Black
f. Inner core of engraving stock: White
g. Engraved letter style: Helvetica Medium with all upper case letters.
h. Mounting Methods: Mechanical.

PART 3 - EXECUTION

3.1 EXAMINATION:

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work:

1. Verify that the deck substrate is flat.

2. Verify that wood blocking and nailers are securely anchored to roof deck.

3. Verify that substrate is visibly dry.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION:

A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.

3.3 ROOFING INSTALLATION, GENERAL:

A. Install roofing system according to roofing system manufacturer's written instructions.

B. Refer to Part 1.2B. The Designer and the Engineer shall be the final arbiters of all matters related to Contractor’s workmanship as it relates to aesthetic matters. Aesthetic concerns include, but are not limited to, the following: telegraphing of the low profile plates and roof boards through the membrane, visible bubbles in the membrane, and plumb Décor Profile. If aesthetic concerns arise, the Engineer will suspend roofing work in accordance with Form 816 Article 1.08.06.

C. Complete terminations and flashings and provide temporary seals to prevent water from entering completed sections of roofing system at end of workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.

3.4 SUBSTRATE/ROOF BOARD INSTALLATION:

A. Install substrate board with long joints in continuous straight lines, perpendicular to roof slopes with end joints staggered between rows. Tightly butt substrate boards together.

1. Fasten substrate board to deck according to recommendations in FM Global Loss Prevention Data Sheet 1-29 for specified Windstorm Resistance Classification.

2. Stagger the installation of the substrate board by ½ sheets over the existing plywood to ensure that the substrate board and plywood seams do not align.

3. Embed the concave portion of the substrate board fastener plate into the substrate board to ensure flatness.

4. Install additional fasteners at perimeter of each substrate board as required by misalignment of adjacent substrate boards.

3.5 VAPOR-RETARDER INSTALLATION:

A. Polyethylene Film: Loosely lay polyethylene-film vapor retarder in a single layer over area to receive vapor retarder, side and end lapping each sheet a minimum of 2 inches (50 mm) and 6 inches (150 mm), respectively. Continuously seal side and end laps with tape.

B. Completely seal vapor retarder at terminations, obstructions, and penetrations to prevent air movement into roofing system.

3.6 FULLY-ADHERED MEMBRANE ROOFING INSTALLATION:

A. Adhere roofing over area to receive roofing according to roofing system manufacturer's written instructions. Unroll roofing and allow to relax before retaining.

1. Install sheet according to ASTM D 5036.

B. Start installation of roofing in presence of roofing system manufacturer's technical personnel.

C. PVC sheets shall be installed continuous with no end joints as shown on the plans.

D. Accurately align roofing, and maintain uniform side and end laps of minimum dimensions required by manufacturer.

E. Bonding Adhesive: Apply according to manufacturer’s recommendations.

F. In addition to adhering, mechanically fasten roofing securely at terminations and perimeter of roofing.

G. Seams: Clean seam areas, overlap roofing, and hot-air weld side and end laps of roofing and sheet flashings according to manufacturer's written instructions, to ensure a watertight seam installation.

1. Test lap edges with probe to verify seam weld continuity. Apply lap sealant to seal cut edges of sheet.
2. Verify field strength of seams a minimum of twice daily, and repair seam sample areas.
3. Repair tears, voids, and lapped seams in roofing that do not comply with requirements.

H. In the event of a puncture in the PVC membrane, the Contractor shall install a full-width PVC sheet between the “Décor Profile” continuous for the full length of the roof field.

3.7 FLASHING INSTALLATION:

A. Install sheet flashings and preformed flashing accessories, and adhere to substrates according to roofing system manufacturer's written instructions.

B. Apply bonding adhesive to substrate and underside of sheet flashing at required rate, and allow to partially dry. Do not apply to seam area of flashing.

C. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.

D. Clean seam areas, overlap, and firmly roll sheet flashings into the adhesive. Hot-air weld side and end laps to ensure a watertight seam installation.

E. Terminate and seal top of sheet flashings.

3.8 PVC EXTRUSION “DÉCOR PROFILE” INSTALLATION:

A. Install “Décor Profile” according to roofing system manufacturer's written instructions unless otherwise noted.

B. Installation of “Décor Profile” shall begin at the water shield with full-length strips. This ensures that partial strips, if any, are installed higher on the roof.

C. “Décor Profile” is installed for aesthetics. Ensure that “Décor profile” is installed straight.

3.9 FIELD QUALITY CONTROL:

A. In-Process Roof Inspections: Arrange for roofing system manufacturer’s technical personnel to inspect roofing system while installation is ongoing. Notify Engineer 7 calendar days in advance of date and time of inspections.

B. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion. Notify Engineer 7 calendar days in advance of date and time of inspection.

C. Repair or remove and replace components of roofing system where inspections indicate that they do not comply with specified requirements.

D. Additional testing and inspecting, at Contractor's expense, will be performed to determine if replaced or additional work complies with specified requirements.

3.10 PROTECTING AND CLEANING:

A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction does not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to the Engineer.

B. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of the issuance of the Certificate of Compliance and according to requirements.

C. Clean overspray and spillage using cleaning agents and procedures recommended by manufacturer of affected construction.

3.11 INSTALLATION OF ROOF WARRANTY SIGN:

A. The roof warranty sign shall be permanently anchored to the facility adjacent to the electrical panel, unless otherwise directed by the Engineer. Anchor sign with stainless steel fasteners.

B. Panel sign shall include the following information:

NEW ROOF INSTALLATION WARANTY

CTDOT Project No. 172-407: _____ Salt Shed

WARRANTY START DATE: (X/X/XX)
(Date of the issuance of the Certificate of Compliance)

ROOF TYPE: (Type of roof installed),
(i.e. Sarnafil, Inc., PVC Membrane)

WARRANTY: (Manufacturer's name and type of warranty), 20 yr. NDL

WARRANTY NUMBER: (Actual Warranty number)

INSTALLER: (Contractor's name, town located, and telephone number.)

AFTER 2 YEARS CONTACT MANUFACTURER: (Manufacturer's name and telephone number of warranty service)

END OF SECTION 075419

SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY:

A. Section Includes:

1. Silicone joint sealants.

B. Related Sections:

1. Division 06 Section 061053, "Miscellaneous Rough Carpentry" for retrofit of timbers.
2. Division 07 Section 075419, "Polyvinyl-Chloride (PVC) Roofing" for roofing system.
3. Division 08 Section 089000, "Louvers and Vents" for perimeter joints.

1.2 PRECONSTRUCTION TESTING:

A. Preconstruction Field-Adhesion Testing: Before installing sealants, field test their adhesion to Project joint substrates as follows:

1. Locate test joints where indicated as directed by Engineer.
2. Conduct field tests for each application indicated below:

a. For each kind of substrate joint requiring sealant.

3. Notify Engineer 7 calendar days in advance of dates and times when test joints will be erected.
4. Arrange for tests to take place with joint-sealant manufacturer's technical representative present.

a. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193 or Method A, Tail Procedure, in ASTM C 1521.

1) For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.

5. Report whether sealant failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. For sealants that fail adhesively, retest until satisfactory adhesion is obtained.

6. Evaluation of Preconstruction Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing, in absence of other indications of noncompliance with requirements, will be considered satisfactory. Do not use sealants that fail to adhere to joint substrates during testing.

1.3 SUBMITTALS:

A. Submit the following in accordance with Form 816 Article 1.20-1.05.02 and NOTICE TO CONTRACTOR – SUBMITTALS.

B. Product Data: For each joint-sealant product indicated.

C. Samples for Initial Selection: Manufacturer's color charts showing the full range of colors available.

D. Joint-Sealant Schedule: Include the following information:

1. Joint-sealant application, joint location, and designation.
2. Joint-sealant manufacturer and product name.
3. Joint-sealant formulation.
4. Joint-sealant color.

E. Quality Assurance Submittals:

1. Manufacturer Certification Letter in accordance with NOTICE TO CONTRACTOR – POTENTIAL FOR ASBESTOS CONTAINING MATERIALS.

F. Qualification Data: For qualified Installer and testing agency.

G. Product Certificates: For each kind of joint sealant and accessory, from manufacturer.

H. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, indicating that sealants comply with requirements.

I. Preconstruction Field-Adhesion Test Reports: Indicate which sealants and joint preparation methods resulted in optimum adhesion to joint substrates based on testing specified in Part 1.2, "Preconstruction Testing."

J. Field-Adhesion Test Reports: For each sealant application tested.

1.4 QUALITY ASSURANCE:

A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.

B. Source Limitations: Obtain joint sealants from single source from single manufacturer.

C. Product Testing: Test joint sealants using a qualified testing agency.

1. Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated.

1.5 PROJECT CONDITIONS:

A. Do not proceed with installation of joint sealants under the following conditions:

1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer.
2. When joint substrates are wet.
3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL:

A. Compatibility: Provide joint sealants, backing materials, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.

B. Liquid-Applied Joint Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied joint sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.

2.2 SILICONE JOINT SEALANTS:

A. Mildew-Resistant, Single-Component, Nonsag, Neutral-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 25, for Use NT.

1. Products: Subject to compliance with requirements, available building sealant products that may be incorporated into the Work include, but are not limited to, the following:

a. Dow Corning Corporation
b. Pecora Corporation
c. Tremco Incorporated

B. Colors of Exposed Joint Sealants: As selected by Designer from manufacturer's full range.

2.3 JOINT SEALANT BACKING:

A. General: Provide sealant backings of material that are non-staining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

2.4 MISCELLANEOUS MATERIALS:

A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

B. Cleaners for non-porous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.

C. Masking Tape: Non-staining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION:

A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION:

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:

1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant

manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.

2. Clean joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:

   a. Metal.

B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS:

A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

   1. Do not leave gaps between ends of sealant backings.
   2. Do not stretch, twist, puncture, or tear sealant backings.
   3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.

D. Install sealants using proven techniques that comply with the following and at the same time backings are installed:

   1. Place sealants so they directly contact and fully wet joint substrates.
   2. Completely fill recesses in each joint configuration.
   3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

E. Tooling: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form

smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

1. Remove excess sealant from surfaces adjacent to joints.
2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
3. Provide concave joint profile per Figure 8A in ASTM C 1193, for all vertical joints unless otherwise indicated.
4. Provide flush joint profile around all galvanized plate penetrations through timber barriers and where indicated per Figure 8B in ASTM C 1193.

    a. Use masking tape to protect surfaces adjacent to recessed tooled joints.

3.4 FIELD QUALITY CONTROL:

A. Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:

1. Extent of Testing: Test completed and cured sealant joints as follows:

    a. Perform 2 tests for each joint length for each kind of sealant and joint substrate.

2. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193 or Method A, Tail Procedure, in ASTM C 1521.

    a. For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.

3.5 CLEANING:

A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.6 PROTECTION:

A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

3.7 JOINT-SEALANT SCHEDULE:

A. Joint-Sealant Application: Interior and exterior joints in vertical surfaces and horizontal non-traffic surfaces.

1. Building Joint Locations:

a. Perimeter joints around galvanized metal plates on wood truss penetrations in plywood cap upon barrier walls.
b. Horizontal joints between water shield and pilasters/soffit.
c. Horizontal joints between soffit edge and building edge at front and back of building.
d. Joints between different materials effecting work.
e. Perimeter joints between siding materials and frames of louvers.

END OF SECTION 079200

SECTION 089000 - LOUVERS AND VENTS

PART 1 - GENERAL

1.1 SUMMARY:

A. Section Includes:

1. Fixed, wood louvers.

B. Related CSI Sections:

1. Division 07 Section 079200, "Joint Sealants" for sealants applied during louver installation.
2. Division 09 Section 099113, “Exterior Painting” for painting applied during louver installation.

1.2 DEFINITIONS:

A. Horizontal Louver: Louver with horizontal blades; i.e., the axes of the blades are horizontal.

1.3 PERFORMANCE REQUIREMENTS:

A. Structural Performance: Louvers shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated without permanent deformation of louver components, noise or fatigue caused by louver blade rattle or flutter, or permanent damage to fasteners and anchors. Wind pressures shall be considered to act normal to the face of the building.

1. Wind Loads: Determine loads based on a uniform pressure of 20 lbf/sq. ft. (957 Pa), acting inward or outward.

B. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes, without buckling, opening of joints, overstressing of components, failure of connections, or other detrimental effects.

C. Louver Performance Ratings: Provide louvers complying with requirements specified, as demonstrated by testing manufacturer's stock units identical to those provided, except for length and width according to AMCA 500-L.

1.4 SUBMITTALS:

A. Submit the following in accordance with Form 816 Article 1.20-1.05.02 and NOTICE TO CONTRACTOR – SUBMITTALS.

B. Product Data: For each type of product indicated.

1. For louvers specified to bear AMCA seal, include printed catalog pages showing specified models with appropriate AMCA Certified Ratings Seals.

C. Shop Drawings: For louvers and accessories. Include plans, elevations, sections, details, and attachments to other work. Show frame profiles and blade profiles, angles, and spacing.

1. Show weep flashing, sealant, or other means of preventing water intrusion.

1.5 QUALITY ASSURANCE:

A. Source Limitations: Obtain louvers and vents from single source from a single manufacturer where indicated to be of same type and design.

B. AWS Standard: Comply with recommendations in the Architectural Woodworking Institute's "Architectural Woodwork Standard" for fabrication, construction details, and installation procedures.

1.6 PROJECT CONDITIONS:

A. Field Measurements: Verify actual dimensions of openings by field measurements before fabrication.

PART 2 - PRODUCTS

2.1 MATERIALS:

A. Western Red Cedar: Wood Class II

B. 20 oz. Copper Flashing

C. Fasteners: Use types and sizes to suit unit installation conditions.

1. Use Stainless Steel Trim Head Wood Screws unless otherwise indicated or required for a complete installation.

2.2 FABRICATION, GENERAL:

A. Assemble louvers in factory to minimize field assembly. Disassemble units as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.

B. Maintain equal louver blade spacing, including separation between blades and frames at head and sill, to produce uniform appearance.

C. Fabricate frames, including integral sills and flashings, to fit in openings of sizes indicated, with allowances made for fabrication and installation tolerances, adjoining material tolerances, and perimeter sealant joints.

D. Include supports, anchorages, and accessories required for complete assembly.

E. Provide extended sills for recessed louvers.

F. Miter outer frame/ trim components.

2.3 FIXED, WOOD LOUVERS:

A. Horizontal, Blade Louver:

1. Louver Depth: 6 inches (150 mm).
2. Louver Width: 60 inches (1524 mm).
3. Louver Height: 78 inches (1981 mm).
4. Frame and Blade Nominal Thickness: Not less than 0.25 inch (6.35 mm).
5. Louver Performance Ratings:

    a. Free Area: Not less than 16.25 sq. ft. (1.59 sq. m) for 60-inch- (1524-mm-) wide by 78-inch- (1981-mm-) high louver.
    b. Point of Beginning Water Penetration: Not less than 1000 fpm (5.1 m/s).
    c. Air Performance: Not more than 0.15-inch wg (37-Pa) static pressure drop at 1000-fpm (5.1-m/s) free-area intake velocity.

6. Louver Depth: 6 inches (150 mm).
7. Louver Width: 24 inches (609.5 mm).
8. Louvers Height: 30 inches (762 mm).
9. Frame and Blade Nominal Thickness: Not less than 0.25 inch (6.35 mm).

    a. Free Area: Not less than 2.5 sq. ft. (.232 sq. m) for 24-inch- (609.5-mm-) wide by 30-inch- (762-mm-) high louver.
    b. Point of Beginning Water Penetration: Not less than 1000 fpm (5.1 m/s).
    c. Air Performance: Not more than 0.15-inch wg (37-Pa) static pressure drop at 1000-fpm (5.1-m/s) free-area intake velocity.

2.4 LOUVER SCREENS:

A. General: Provide screen at interior and exterior side of louver.

1. Screening Type: ½" Mesh .022 Welded Stainless Wire, Dia. T316.

B. Secure screen frames to louver frames with approved wood screws, spaced a maximum of 6 inches (150 mm) from each corner and at 12 inches (300 mm) o.c.

C. Louver Screen Frames: Fabricate with mitered corners to louver sizes indicated.

1. Wood: Same kind and form of wood as indicated for louver to which screens are attached. Reinforce wood screen frames at corners with clips.
2. Finish: Mill

2.5 FINISHES, GENERAL:

A. Comply with CSI Division 09 Section 099113, "Exterior Painting" for applying designated finishes.

PART 3 - EXECUTION

3.1 EXAMINATION:

A. Examine substrates and openings, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION:

A. Coordinate drawings and directions for installation of anchorages. Coordinate delivery of such items to Project Site.

3.3 INSTALLATION:

A. Locate and place louvers and vents level, plumb, and at indicated alignment with adjacent work.

B. Use concealed anchorages where possible. Provide stainless steel washers fitted to screws where required to protect wood surfaces and to make a weather-tight connection.

C. Form closely fitted joints with exposed connections accurately located and secured.

D. Provide perimeter reveals and openings of uniform width for sealants and joint fillers, as indicated.

E. Install concealed flashings and joint fillers as louver installation progresses, where weather-tight louver joints are required. Comply with CSI Division 07 Section 079200, "Joint Sealants" for sealants applied during louver installation.

3.4 ADJUSTING AND CLEANING:

A. Clean exposed surfaces of louvers and vents that are not protected by temporary covering, to remove soiling during the construction period. Do not let soil accumulate during construction period.

B. Before final inspection, thoroughly clean exposed surfaces taking the proper care not to harm any finishes.

C. Corrective Work- Repair finishes damaged by cutting, trimming, sanding, fitting, and cleaning. Restore finishes so no evidence remains of corrective work. Return items that cannot be refinished in the field to the factory, make required alterations, and refinish entire unit or provide new units.

D. If results of restoration are unsuccessful, as determined by Engineer, remove damaged units and replace with new units.

1. Touch up minor abrasions in finishes, matches color and gloss of, as required or compatible with finished coating.

END OF SECTION 089000

SECTION 099113 - EXTERIOR PAINTING

PART 1 - GENERAL

1.1 SUMMARY:

A. Section includes surface preparation and the application of paint and oil based coating systems on the following wooden exterior substrates: trim, louvers, cedar shakes, and soffit.

1.2 DEFINITIONS:

A. Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

B. Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.

1.3 SUBMITTALS:

A. Submit the following in accordance with Form 816 Article 1.20-1.05.02 and NOTICE TO CONTRACTOR – SUBMITTALS.

B. Product Data: For each type of product. Include preparation requirements and application instructions.

C. Product List: For each product indicated, include the following:

1. Cross-reference to paint and staining system and locations of application areas. Use same designations indicated in schedule.
2. Printout of current "MPI Approved Products List" for each paint product category specified, with the proposed product highlighted.
3. VOC content for each system.

1.4 DELIVERY, STORAGE, AND HANDLING:

A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F (7 deg C).

1. Maintain containers in clean condition, free of foreign materials and residue.
2. Remove rags and waste from storage areas daily.

1.5 FIELD CONDITIONS:

A. Apply materials only when temperature of surfaces to be painted or coated and ambient air temperatures are between 50 and 95 deg F (10 and 35 deg C).

B. Do not apply materials in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

PART 2 - PRODUCTS

2.1 MANUFACTURERS:

A. Paint Manufacturer: Subject to compliance with requirements for painting, available manufacturer offering products that may be incorporated into the Work include, but is not limited to, the following:

1. Sherwin-Williams Company (The).
2. Benjamin Moore.
3. Dulux.

B. Stain Basis of Design Manufacturer: Subject to compliance with requirements for wood staining, provide products manufactured by Benjamin Moore, or an approved equal.

2.2 PAINT AND STAINING, GENERAL:

A. MPI Standards: Provide paint products that comply with MPI standards indicated and that are listed in its "MPI Approved Products List."

1. Preparation and Workmanship: Comply with requirements in "MPI Architectural Painting Specification Manual" for products and systems indicated.

B. Staining Standards: Provide staining products that penetrate into wood fibers to rejuvenate or replace natural oils and resins.

C. Material Compatibility:

1. Provide materials for use within each paint and staining system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each application in paint and staining system, provide products recommended in writing by manufacturer for substrates indicated.

D. VOC Content: Provide materials that comply with VOC limits of authorities having jurisdiction.

E. Paint Colors: As selected by Designer from manufacturer's full range.

2.3 WATER-BASED PAINTS:

A. Latex Self-Priming, Exterior Semi-Gloss: MPI #11.

2.4 WOOD STAINING:

A. Semi-Transparent Oil/ Stain for Exterior Wood Cedar Shake Siding.

1. Moore Wood, Alkyd Deck/Siding Semi-transparent Stain- Natural Cedar.

PART 3 - EXECUTION

3.1 EXAMINATION:

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:

1. Wood: 15 percent.

C. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and coatings.

D. Proceed with applications only after unsatisfactory conditions have been corrected.

1. Approved application of materials indicates acceptance of surfaces and conditions.

3.2 PREPARATION:

A. Comply with paint manufacturer's written instructions and recommendations in "MPI Manual" applicable to substrates and systems indicated.

B. Comply with staining manufacturer's written instructions and recommendations in applicable to substrates and systems indicated.

C. Remove hardware, covers, plates, or similar items already in place that are removable. If removal is impractical or impossible because of size, weight, or type of item, provide surface-applied protection before surface preparation and application.

1. After completing painting and staining operations, use workers skilled in the trades involved to reinstall items that were removed if applicable. Remove surface-applied protection.

D. Clean substrates of substances that could impair bond of materials, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

1. Remove incompatible primers and re-prime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.

E. Wood Substrates:

1. Sand uneven surfaces flush that will be exposed to view, and dust off.
2. Prime edges, ends, and faces of wood accordingly.
3. After priming, fill imperfections in the finish surfaces that can not be remediated with paint with putty or plastic wood filler. Sand smooth when dried.

3.3 APPLICATION:

A. Apply paints according to manufacturer's written instructions and recommendations in "MPI Manual."

1. Use applicators and techniques suited for substrate indicated.
2. Paint surfaces behind movable items same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed items with prime coat only accordingly.
3. Paint both sides and edges of exterior door and door frames.
4. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.

B. Tint undercoats same color as topcoat, but tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Provide sufficient difference in shade of undercoats to distinguish each separate coat.

C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and breaks.

3.4 CLEANING AND PROTECTION:

A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

B. After completing material applications, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

C. Protect work of other trades against damage from material applications. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Engineer, and leave in an undamaged condition.

D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.5 EXTERIOR PAINTING AND STAINING SCHEDULE:

A. Wood: To include trim.

1. Latex System:

a. Prime Coat: Primer, latex for exterior wood, MPI #6.
b. Intermediate Coat Latex, exterior, matching topcoat.
c. Topcoat: Latex, exterior semi-gloss (Gloss Level 5), MPI #11.

B. Wood: To include louvers, plywood soffit lining.

1. Latex System:

a. Prime Coat: Primer, latex for exterior wood, MPI #6.
b. Intermediate Coat: Latex, exterior, matching topcoat.
c. Topcoat: Latex, exterior, low sheen (Gloss Level 3), MPI #15.

C. Cedar Shakes and Louvers:

1. Semi-Transparent Stain:

a. Surface preparation as required per the manufacturer's written instructions.
b. Topcoat: exterior gloss semi-gloss, MPI #13.

END OF SECTION 099113

State of Connecticut

Department of Transportation

SUPPLEMENTAL SPECIFICATIONS

TO

THE STANDARD SPECIFICATIONS

FOR

ROADS, BRIDGES AND INCIDENTAL CONSTRUCTION

FORM 816

2004

JULY 2012

July 2012

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July 2012

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SECTION		SPECIFICATION NUMBER
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M.13	Roadside Development	M13
M.16	Traffic Control Signals	M16
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July 2012

STANDARD SPECIFICATIONS
FOR
ROADS, BRIDGES AND INCIDENTAL CONSTRUCTION
FORM 816

ERRATA

PG.	ARTICLE OR SUBARTICLE	LINE NO.	CORRECTION
iv	Table of Contents	11	Change “Guild” to “Guide”
4	1.01.01	8	After the end of the definition for “Plans,” insert as a subset, “A. Standard Sheets – Standardized plans containing details approved by the Department and the FHWA, for construction of a given type on any project, included in contracts on an as-needed basis.”
6	1.01.02	41	Change “Aluminum Association” to “Aluminum Association, Inc. (The)”
6	1.01.02	42	Delete “AAA – Aluminum Alloy Association”
7	1.01.02	1	Insert “AABC – Associated Air Balance Council”
7	1.01.02	1	Insert “AAMA – American Architectural Manufacturers Association”
7	1.01.02	12	Insert “ABMA – American Bearing Manufacturers Association”
7	1.01.02	12	Insert “ACGIH – American Council of Government Industrial Hygienists”
7	1.01.02	12	Change “American Concrete Institute” to “ACI International (American Concrete Institute)”
7	1.01.02	14	Insert “ADAAG – Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities”
7	1.01.02	16	Change “Associated General Contractors of America” to “Associated General Contractors of America (The)”
7	1.01.02	19	Insert “AI – Asphalt Institute”
7	1.01.02	19	Change “American Institute of Architects” to “American Institute of Architects (The)”
7	1.01.02	20	Delete “AIEE – American Institute of Electrical Engineers “
7	1.01.02	24	Delete “ALI – Associated Laboratories, Inc.”
7	1.01.02	26	Change “American Lumber Standard Committee” to “American Lumber Standards Committee, Incorporated”
7	1.01.02	27	Change “Air Movement and Control Association” to “Air Movement and Control Association International, Inc.”
7	1.01.02	31	Delete “AOEC – Area of Environmental Concern”
7	1.01.02	33	Change “The Engineered Wood Association” to “APA-The Engineered Wood Association”
7	1.01.02	37	Change “Air Conditioning” to “Air-Conditioning”
8	1.01.02	7	Change “Air Conditioning” to “Air-Conditioning”
8	1.01.02	8	Change “American Society of Mechanical Engineers” to “ASME International (The American Society of Mechanical Engineers International)”
8	1.01.02	18	Delete “ATA – American Transit Association”
8	1.01.02	20	Delete “AWG – American Wire Gauge”
8	1.01.02	22	Change “Wood-Preservers” to “Wood-Preservers’ “
8	1.01.02	33	Delete “AZI – American Zinc Institute”
8	1.01.02	35	Change “Building Officials and Code Administrators International” to “BOCA International, Inc.”

PG.	ARTICLE OR SUBARTICLE	LINE NO.	CORRECTION
8	1.01.02	38	Change “Library” to “Laboratory”
9	1.01.02	2	Change “CONNDOT” to “ConnDOT”
9	1.01.02	6	Delete “CPI – Clay Pipe Institute”
9	1.01.02	9	Delete “CS – Commercial Standard”
9	1.01.02	10	Change “Construction Specifications Institute” to “Construction Specifications Institute (The)”
9	1.01.02	12	Change “Tower” to ”Technology”
9	1.01.02	17	Delete “DFPA – Douglas Fir Plywood Association”
9	1.01.02	19	Change “Department of Defense” to “Department of Defense Military Specifications and Standards”
9	1.01.02	21	Change “Association” to “Alliance”
9	1.01.02	23	Delete “U.S. Department of Transportation”
9	1.01.02	28	Delete “U.S. Department of Transportation”
9	1.01.02	30	Insert “FMG – FM Global”
9	1.01.02	31	Delete “U.S. Department of Transportation”
10	1.01.02	2	Delete “HASP – Health and Safety Plan”
10	1.01.02	3	Delete “HMA – Hot Mix Asphalt or Bituminous Concrete”
10	1.01.02	4	Delete “HPMA – Hardwood Plywood Manufacturers Association”
10	1.01.02	5	Insert “HPVA – Hardwood Plywood & Veneer Association”
10	1.01.02	9	Insert “ICC – International Code Council”
10	1.01.02	9	Change “Insulated Cable Engineers Association” to “Insulated Cable Engineers Association, Inc.”
10	1.01.02	10	Change “Institute of Electrical and Electronics Engineers” to “Institute of Electrical and Electronics Engineers, Inc. (The)”
10	1.01.02	21	Change “Military Standardization Documents, U.S. Department of Defense” to “(MILSPEC) Military Specification and Standards”
10	1.01.02	24	Delete “MS – Military Specifications”
10	1.01.02	26	Change “Manufacturers Standardization Society of the Valve and Fittings Industry Inc.” to “Manufacturers Standardization Society of The Valve and Fittings the Valve Industry Inc.”
10	1.01.02	29	Change “National Association of Architectural Metal Manufacturers (The)” to “National Association of Architectural Metal Manufacturers”
10	1.01.02	31	Insert “NADCA – National Air Duct Cleaners Association”
10	1.01.02	34	Delete “NBS – National Bureau of Standards”
10	1.01.02	35	Delete “NC – National Course”
11	1.01.02	3	Delete “NCPRC – National Clay Pipe Research Corporation”
11	1.01.02	10	Change “International Electrical Testing Association” to “InterNational Testing Association”
11	1.01.02	12	Delete “NFS – NFS International”
11	1.01.02	13	Insert “NHLA – National Hardwood Lumber Association”
11	1.01.02	18	Insert “NLGA – National Lumber Grades Authority”
11	1.01.02	18	Delete “NLMA – National Lumber Manufacturers Association”
11	1.01.02	21	Insert “NSF – NSF International”
11	1.01.02	21	Change “National Terrazzo and Mosaic Association (The)” to “National Terrazzo and Mosaic Association, Inc.”
11	1.01.02	26	Delete “PCC – Portland Cement Concrete”
11	1.01.02	28	Delete “PLP – Plastic Laminate Producers”
11	1.01.02	29	Delete “PS – Product Standard of NBS, U.S. Department of Commerce”
11	1.01.02	32	Delete “RLMI – Reflector and Lamp Manufacturers’ Institute”

PG.	ARTICLE OR SUBARTICLE	LINE NO.	CORRECTION
11	1.01.02	35	Delete “SAWP – Society of American Wood Preservers”
11	1.01.02	36	Insert “SDI – Steel Deck Institute”
11	1.01.02	36	Insert “S.D.I. – Steel Door Institute”
11	1.01.02	37	Insert “SJI – Steel Joist Institute”
11	1.01.02	37	Insert “SMACNA – Sheet Metal and Air Conditioning Contractors’ National Association”
11	1.01.02	37	Change “Southern Pine Inspection Bureau” to “Southern Pine Inspection Bureau (The)”
12	1.01.02	9	Change “Tile Council of America“ to “Tile Council of America, Inc.”
12	1.01.02	10	Insert “TIA – Telecommunications Industry Association”
12	1.01.02	10	Insert “TPI – Truss Plate Institute, Inc.”
12	1.01.02	10	Delete “UBC – Uniform Building Code”
12	1.01.02	11	Change “Underwriters Laboratories, Inc.” to “Underwriters Laboratories Inc.”
12	1.01.02	12	Delete “UMTA – Urban Mass Transportation Administration, U.S. Department of Transportation”
12	1.01.02	14	Delete “UPC – Uniform Plumbing Code”
12	1.01.02	15	Insert “USGBC – U.S. Green Building Council”
12	1.01.02	16	Delete “USS – United States Standard”
12	1.01.02	17	Delete “VOC – Volatile Synthetic Organic Chemicals”
12	1.01.02	19	Delete “WCLA – West Coast Lumberman’s Association”
12	1.01.02	20	Insert “WCSC – Window Covering Safety Council”
12	1.01.02	20	Delete “WSA – Temporary Waste Stockpile Area”
12	1.01.03	31	Insert “AOEC – Area of Environmental Concern”
12	1.01.03	31	Insert “AWG – American Wire Gauge”
13	1.01.03	16	Insert “HASP – Health and Safety Plan”
13	1.01.03	29	Insert “PCC – Portland Cement Concrete”
14	1.01.03	25	Insert “VOC – Volatile Organic Compound”
14	1.01.03	26	Insert “WSA – Temporary Waste Stockpile Area”
22	1.03.07	23	Change “**$1,000,000**” to “**$2,000,000**”
32	1.05.01	38	Change “Connecticut General Statutes” to “CGS”
45	1.05.15	29	Change “Department of Public Utility Control” to “DPUC”
105	1.20	29	Change “Workmen and Equipment” to “Personnel and Equipment”
105	1.20	31	Delete “Completion of Construction Work and”
107	1.20-1.02.13	15	Change “Americans with Disabilities Act Accessibility Guidelines” to “ADAAG”
108	1.20-1.04.01	26	Change “othewise” to “otherwise”
119	1.20-1.05.25	4	Change “Certificate of Compliance” to “C.O.C.”
122	1.20-1.06.08	3	Change “Certificate of Compliance” to “C.O.C.”
131	1.20-1.08.05	34	Change “Workmen and Equipment” to “Personnel and Equipment”
132	1.20-1.08.11	12	Change “Certificate of Compliance” to “C.O.C.”
133	1.20-1.08.13	7	Delete “Completion of Construction Work and”
133	1.20-1.08.13	9	Change “Certificate of Compliance” to “C.O.C.”
133	1.20-1.08.11	15	Change “Certificate of Compliance” to “C.O.C.”
133	1.20-1.08.11	20	Change “Certificate of Compliance” to “C.O.C.”
143	2.02.01	28	Insert “, swales” after “channels”
245	4.06.04	11	Change “**Over weight (mass) Adjustments -**” and replace with indented “Over weight (mass) Adjustments -” as a subsection of “**1. Bituminous Concrete Class ( )**”.

PG.	ARTICLE OR SUBARTICLE	LINE NO.	CORRECTION
259	5.03.03	24	Change “Such requirements of Article 5.02.03 as are pertinent shall apply equally to this construction.” To “All such plans prepared by the Contractor shall be considered working drawings and shall be submitted with engineering calculations to the Engineer for review in accordance with the requirements of Article 1.05.02."
270	5.08.02	4	Change “M.06.02-12” to “M.06.02-4 Welded Stud Shear Connectors”
271	5.09.02	39	Change “M.06.02-12” to “M.06.02-4 Welded Stud Shear Connectors”
284	5.14.03-12	12	Change “Article M.06.02-13” to “Subarticle 6.03.03 (a) Shop Fabrication Notice”
351	6.03.03	8	Change “MS MIL-C-11796B” to “MIL-C-11796B”
434	9.04.02	14	Change “Subarticle M.06.02-1” to “Article 6.03.02”
434	9.04.02	15	Change “M.06.02-9(d) for metal bridge rail (cast post—aluminum).” to “Malleable castings shall conform to the requirements of the specifications for malleable iron castings, ASTM A 47, Grade No. 32510 (22010). Ductile iron castings shall conform to the Specifications for Ductile Iron Castings, ASTM A 536, Grade 60-40-18 (414-276-18) unless otherwise specified. In addition to the specified test coupons, test specimens from parts integral with the castings, such as risers, shall be tested for castings having a weight (mass) of more than 1000 pounds (455 kilograms) to determine that the required quality is obtained in the castings in the finished condition.”
452	9.14.02	2	Change “Subarticle M.06.02-8” to “ASTM A 53, Type E or S, Grade A, Schedule 40 Black Finish.”
452	9.14.02	4	Change “Subarticle M.06.02-9(d) except that the grade shall be 32510” to “the specifications for malleable iron castings, ASTM A 47, Grade No. 32510 (22010). Ductile iron castings shall conform to the Specifications for Ductile Iron Castings, ASTM A 536, Grade 60-40-18 (414-276-18) unless otherwise specified. In addition to the specified test coupons, test specimens from parts integral with the castings, such as risers, shall be tested for castings having a weight (mass) of more than 1000 pounds (455 kilograms) to determine that the required quality is obtained in the castings in the finished condition.”
496	9.70.01	37	Change “CDOT” to “ConnDOT”
569	11.14.05	19	Change “Span Wire” to “Span Wire (Type)”
577	12.01.03	7	Change “6.03.03-19” to “6.03.03-4 (f) High Strength Bolted Connections”
577	12.01.03	23	Change “Article 6.03.03-15” to “Subarticle 6.03.03-4(c) Bearings”
577	12.01.03	27	Change “Article 6.03.03-19 (c)(3)” to “Subarticle 6.03.03-4 (f) High Strength Bolted Connections Turn-of-Nut Installation Method”
604	18.00.02	7	Change “National Cooperative Highway Research Program (NCHRP)” to “NCHRP”
623	M.03.01	9	Change “Cement and Concrete Reference Laboratory” to “CCRL”
623	M.03.01	13	Change “Cement and Concrete Reference Laboratory” to “CCRL”
626	M.03.01	2	Change “Cement and Concrete Reference Laboratory” to “CCRL”

PG.	ARTICLE OR SUBARTICLE	LINE NO.	CORRECTION
626	M.03.01	3	Change “NBS” to “NIST”
632	M.03.01	18	Change “Cement and Concrete Reference Laboratory” to “CCRL”
638	M.04.02	37	Change “Asphalt Institute’s” to “AI’s”
711	M.10.02-1	17	Change “Subarticle M.06.02-1(b)” to “Article M.06.02”
720	M.10.08-3	2	Change “Subarticle M.06.02-1(b)” to “Article M.06.02”
735	M.13.03	22	Change “AOAC International” to “AOAC”
760	M.15.15	21	Change “non-fusible” to “fused”
780	M.16.08	41	Change “Americans With Disabilities Act (ADA)” to “ADA”
790	M.16.10	24	Change “Underwriter’s Laboratory” to “UL”
800	M.17.01	19	Change “AAA 6061-T6” to “AA 6061-T6”
837	Pay Items	24	Change “Span Wire” to “Span Wire (Type)”
845	Index	6	Add page 133 to “Acceptance of Project”
846	Index	13	Add page 107 to “Bids: Consideration of”
847	Index	28	Add page 132 to “Cleaning Up, Final”
849	Index	25	Add page 107 to “Consideration of Bids”
849	Index	39	Add page 108 to “Contract: Intent of”
850	Index	3	Add page 133 to “Contractor’s: Responsibility, Termination of the”
850	Index	13	Add page 114 to “Cooperation by Contractor”
850	Index	15	Add page 114 to “Coordination of Special Provisions, Plans, Supplemental Specifications and Standard Specifications and Other Contract Requirements”
850	Index	40	Add page 128 to “Cutting and Patching:”
852	Index	16	Add page 106 to “Examination of Plans, Specifications, Special Provisions and Site of Work”
852	Index	38	Insert “Facilities, Temporary…126”
853	Index	7	Add page 132 to “Final: Cleaning Up”
854	Index	35	Add page 115 to “Inspection”
855	Index	11	Add page 108 to “Intent of Contract”
855	Index	22	Add page 106 to “Knowledge of Applicable Laws”
855	Index	25	Add page 106 to “Laws: Knowledge of Applicable”
856	Index	27	Add page 120 to “Materials: Source of Supply and Quality”
856	Index	28	Add page 121 to “Materials: Storage of”
857	Index	33	Add page 133 to “Operation and Maintenance Manuals:”
857	Index	34	Change page 133 to 136 for “Equipment and Systems Maintenance Manual”
859	Index	2	Add page 131 to “Personnel and Equipment”
860	Index	6	Add page 114 to “Plans: Coordination of Special Provisions, Supplemental Specifications and Standard Specifications and Other Contract Requirements”
860	Index	7	Add page 106 to “Plans: Examination of”
860	Index	30	Change page 108 to 112 for “Product Data”
860	Index	31	Change page 108 to 112 for “Product Samples “
860	Index	32	Add page 124 to “Product Selection:”
861	Index	12	Add page 126 to “Prosecution of Work”
861	Index	38	Change page 115 to 135 for “Record Drawings”
863	Index	3	Add page 125 to “Sanitary Provisions”
863	Index	18	Insert “Services, Temporary…126”
863	Index	23	Add page 111 to “Shop Drawings”
864	Index	4	Add page 106 to “Site of Work, Examination of”

PG.	ARTICLE OR SUBARTICLE	LINE NO.	CORRECTION
864	Index	12	Add page 120 to “Source of Supply and Quality”
864	Index	19	Add page 114 to “Special Provisions: Coordination of Plans, Supplemental Specifications and Standard Specifications and Other Contract Requirements”
864	Index	20	Add page 106 to “Special Provisions: Examination of”
864	Index	26	Add page 114 to “Specifications: Coordination of Plans, Special Provisions and Other Contract Requirements”
864	Index	27	Add page 106 to “Specifications: Examination of”
864	Index	43	Add page 121 to “Storage”
865	Index	27	Delete page 108 from “Submittals: Shop Drawings”
865	Index	45	Insert “Temporary Utilities, Services, and Facilities…126”
866	Index	2	Add page 133 to “Termination of Contractor’s Responsibility”
866	Index	23	Insert “Training…137”
866	Index	45	Add page 133 to “Utility Services”
867	Index	8	Insert “Warranties…121”
867	Index	24	Add page 126 to “Work: Prosecution of”

CONNECTICUT
SUPPLEMENTAL SPECIFICATION
SECTION 1.01
DEFINITIONS OF TERMS AND PERMISSIBLE ABBREVIATIONS

1.01.01 — Definitions:

Add the following definition:

SUBSTANTIAL COMPLETION: The date at which the performance of all work on the Project has
been completed except minor or incidental items, final cleanup, work required under a warranty, and repair
of unacceptable work, and provided the Engineer has determined that:

A. The Project is safe and convenient for use by the public, and

B. All traffic lanes including all safety appurtenances are in their final configuration, and

C. Failure to complete the work and repairs excepted above does not result in the deterioration of other completed work; and provided further, that the value of work remaining to be performed, repairs, and cleanup is less than one percent (1%) of the estimated final Contract amount, and

D. If applicable a Certificate of Compliance has been issued.

1.01.02 — Abbreviations, Publications, and Standards:

Delete the like-named abbreviations and replace it with the following abbreviations:

"AA – Aluminum Association, Inc. (The)
ALSC – American Lumber Standard Committee, Incorporated
AMCA – Air Movement and Control Association International, Inc.
AOSA – Association of Official Seed Analysts, Inc.
ASME – ASME International (The American Society of Mechanical Engineers International)
CTI – Cooling Technology Institute
EIA – Electronic Industries Alliance
ICEA – Insulated Cable Engineers Association, Inc.
IEEE – Institute of Electrical and Electronics Engineers, Inc. (The)
NTMA – National Terrazzo & Mosaic Association, Inc. (The)
TCA – Tile Council of America, Inc."

Delete the Following abbreviations:

"ADA – Americans with Disabilities Act
AFPA – American Forest and Paper Association

BOCA – Building Officials and Code Administrators International
FM – Factory Mutual System
ICBO – International Conference of Building Officials
MIL – Military Standardization Documents, U.S Department of Defense
MS – Military Specifications
NWWDA – National Wood Window and Door Association
NFS – NFS International"

Add the following abbreviations:

"ADAAG – Americans with Disabilities Act (ADA)
AABC – Associated Air Balance Council
AAMA – American Architectural Manufacturers Association
ABMA – American Bearing Manufacturers Association
AF&PA – American Forest & Paper Association
AI – Asphalt Institute
BIA – Brick Industry Association (The)
CDA – Copper Development Association Inc.
CGA – Compressed Gas Association
FMG – FM Global
HI – Hydraulic Institute
HPVA – Hardwood Plywood & Veneer Association
ICC – International Code Council
ICC-ES – ICC Evaluation Service, Inc.
IEC – International Electrotechnical Commission
IGMA – Insulating Glass Manufacturers Alliance
ISO – International Organization for Standardization
MILSPEC – Military Specification and Standards
NADCA –National Air Duct Cleaners Association
NFRC – National Fenestration Rating Council
NHLA – National Hardwood Lumber Association
NSF – NSF International (National Sanitation Foundation International)
PDI – Plumbing & Drainage Institute
SDI – Steel Deck Institute *or*
- Steel Door Institute
SJI – Steel Joist Institute
SMACNA – Sheet Metal and Air Conditioning Contractors' National Association
SPRI – Single Ply Roofing Industry
SWRI – Sealant, Waterproofing, & Restoration Institute
TIA/EIA – Telecommunications Industry Association/Electronic Industries Alliance
TRB – Transportation Research Board
UFAS – Uniform Federal Accessibility Standards
USGBC – U.S. Green Building Council
WDMA – Window & Door Manufacturers Association"

CONNECTICUT
SUPPLEMENTAL SPECIFICATION
SECTION 1.05
CONTROL OF THE WORK

Replace Article 1.05.08 – Vacant with the following:

1.05.08—SCHEDULES AND REPORTS:

When a project coordinator is not required by the Contract the following shall apply:

Baseline Bar Chart Construction Schedule: Within 20 calendar days after contract award the Contractor shall develop a comprehensive bar chart as a baseline schedule for the project. The bar chart schedule shall be submitted to the Engineer for approval and shall be based on the following guidelines:
1. The bar chart schedule shall contain a list of activities that represents the major activities of the project. At a minimum, this list should include a breakdown by individual structure or stage, including major components of each. The bar chart schedule shall contain sufficient detail to describe the progression of the work in a comprehensive manner. As a guide, 10 to 15 bar chart activities should be provided for each $1 million of contract value. The following list is provided as an example only and is not meant to be all-inclusive or all-applicable:

General Activities Applicable to all projects

Project Constraints
- -Winter shutdowns
- -Environmental permits/application time of year restrictions
- -Milestones
- -Third Party approvals
- -Long lead time items (procurement and fabrication of major elements)
- -Adjacent Projects or work by others

Award
Notice to Proceed
Signing (Construction, temporary, permanent by location)
Mobilization
Permits as required
Field Office
Utility Relocations
Submittals/shop drawings/working drawings/product data
Construction of Waste Stock pile area
Clearing and Grubbing
Earthwork (Borrow, earth ex, rock ex etc.)
Traffic control items (including illumination and signalization)
Pavement markings
Roadway Construction (Breakdown into components)
Drainage (Breakdown into components)

Culverts
Plantings (including turf establishment)
Semi-final inspection
Final Cleanup

As required the following may supplement the activities listed above for the specific project types indicated:

a. For bridges and other structures, include major components such as abutments, wingwalls, piers, decks and retaining walls; further breakdown by footings, wall sections, parapets etc.

Temporary Earth Retention Systems
Cofferdam and Dewatering
Structure Excavation
Piles/test piles
Temporary Structures
Removal of Superstructure
Bearing Pads
Structural Steel (Breakdown by fabrication, delivery, installation, painting etc.)
Bridge deck

b. Multiple location projects such as traffic signal, incident management, lighting, planting and guiderail projects will be broken down first by location and then by operation. Other major activities of these types of projects should include, but are not limited to:

Installation of anchors
Driving posts
Foundations
Trenching and Backfilling
Installation of Span poles/mast arms
Installation of luminaries
Installation of cameras
Installation of VMS
Hanging heads
Sawcut loops
Energizing equipment

c. Facility Projects – Facilities construction shall reflect the same breakdown of the project as the schedule of values:

Division 2 – Existing Conditions
Division 3 – Concrete
Division 4 – Masonry
Division 5 – Metals

Division 6 – Wood, Plastic, and Composites
Division 7 – Thermal and Moisture Protection
Division 8 – Openings
Division 9 – Finishes
Division 10 – Specialties
Division 11 – Equipment
Division 12 - Furnishings
Division 13 – Special Construction
Division 14 – Conveying Equipment
Division 21 – Fire Suppression
Division 22 – Plumbing
Division 23 – Heating, Ventilating, and Air Conditioning
Division 26 – Electrical
Division 27 – Communications
Division 28 – Electronic Safety and Security
Division 31 – Earthwork
Division 32 – Exterior Improvements
Division 33 - Utilities

2. If the Engineer determines that additional detail is necessary, the Contractor shall provide it.
3. Each activity shall have a separate schedule bar. The schedule timeline shall be broken into weekly time periods with a vertical line to identify the first working day of each week.
4. The bar chart schedule shall show relationships among activities. The critical path for the Project shall be clearly defined on the schedule. The schedule shall show milestones for major elements of work, and shall be prepared on a sheet, or series of sheets of sufficient width to show data for the entire construction period.
5. If scheduling software is used to create the bar chart schedule, related reports such as a predecessor and successor report, a sort by total float, and a sort by early start shall also be submitted.

6. Project activities shall be scheduled to demonstrate that the construction completion date for the Project will occur prior to expiration of the Contract time. In addition, the schedule shall demonstrate conformance with any other dates stipulated in the Contract.
7. The Contractor is responsible to inform its subcontractor(s) and supplier(s) of the project schedule and any relevant updates.
8. There will be no direct payment for furnishing schedules, the cost thereof shall be considered as included in the general cost of the work.
9. For projects without a Mobilization item, 5% of the contract value will be withheld until such time as the Baseline Schedule is approved.

Monthly Updates: No later than the 10th day of each month, unless directed otherwise by the Engineer, the Contractor shall deliver to the Engineer three copies of the schedule to show the work actually accomplished during the preceding month, the actual time spent on each activity, and the estimated time needed to complete any

activity which has been started but not completed. Each time bar shall indicate, in 10% increments, the estimated percentage of that activity which remains to be completed. As the Project progresses, the Contractor shall place a contrasting mark in each bar to indicate the actual percentage of the activity that has been completed.

The monthly update shall include revisions of the schedule necessitated by revisions to the Project directed by the Engineer (including, but not limited to extra work), during the month preceding the update. Similarly, any changes of the schedule required due to changes in the Contractor's planning or progress shall also be included. The Engineer reserves the right to reject any such revisions. If the schedule revisions extend the contract completion date, due to extra or added work or delays beyond the control of the Contractor, the Contractor shall submit a request in writing for an extension of time in accordance with Article 1.08.08. This request shall be supported by an analysis of the schedules submitted previously.

Any schedule revisions shall be identified and explained in a cover letter accompanying the monthly update. The letter shall also describe in general terms the progress of the Project since the last schedule update and shall identify any items of special interest.

If the Contractor fails to provide monthly schedule updates, the Engineer has the right to hold 10% of the monthly estimated payment, or $5,000, whichever is less, until such time as an update has been provided in accordance with this provision.

Biweekly Schedules: Each week, the Contractor shall submit to the Engineer a two week look-ahead schedule. This short-term schedule may be handwritten but shall clearly indicate all work planned for the following two week period.

Recovery Schedules: If the updated schedule indicates that the Project has fallen behind schedule, the Contractor shall either submit a time extension request in accordance with 1.08.08 or immediately institute steps acceptable to the Engineer to improve its progress of the Project. In such a case, the Contractor shall submit a recovery plan, as may be deemed necessary by the Engineer, to demonstrate the manner in which an acceptable rate of progress will be regained.

Replace the first paragraph of Article 1.05.12 – Payrolls with the following:

For each week of the Project from the first week during which an employee of the Contractor does Project work to which prevailing wage requirements apply, until the last week on which such an employee does such work, the Contractor shall furnish to the Engineer certified copies of payrolls showing (a) the names of the employees who worked on the Project and whose work is subject to prevailing wage requirements, (b) the specific days and hours and numbers of hours that each such employee worked on the Project, and (c) the amount of money paid to each such employee for Project work. Each such payroll shall include the statement(s) of compliance with prevailing wage laws required by the State of Connecticut and, if applicable, by the Federal government. Said payrolls must contain all information required by Connecticut General Statutes Section 31-53 (as it may be revised). For contracts subject to Federal prevailing wage requirements, each payroll shall also contain the information required by the Davis Bacon and Related Acts (DBR). All of the payroll requirements in this Article shall also apply to the work of any subcontractor or other party that performs work on the Project site, and the Contractor shall be responsible for ensuring that each such party meets said requirements.

Add the following Article:

1.05.17 - WELDING

The Contractor shall ensure that all welding of materials permanently incorporated into the work, and welding of materials used temporarily during construction of the work is performed in accordance with the following codes:

- American Welding Society (AWS) Structural Welding Code – Steel – ANSI/AWS D1.1: Miscellaneous steel items that are statically loaded including but not limited to columns, and floor beams in buildings, railings, sign supports, cofferdams, tubular items, and modifications to existing statically loaded structures.
- AWS Structural Welding Code – Aluminum – AWS D1.2/D1.2M: Any aluminum structure or member including but not limited to brackets, light standards, and poles.
- AWS Structural Welding Code – Sheet Steel – AWS D1.3/D1.3M: Sheet steel and cold-formed members 0.18 in.(4.6 mm) or less in thickness used as, but not limited, to decking and stay-in-place forms.
- AWS Structural Welding Code – Reinforcing Steel – AWS D1.4/D1.4M: Steel material used in the reinforcement of cast-in-place or pre-cast Portland cement concrete elements including but not limited to bridge decks, catch basin components, walls, beams, deck units, and girders.
- AASHTO/AWS – Bridge Welding Code, AASHTO/AWS D1.5/D1.5M: Steel highway bridges and other dynamically loaded steel structures. Also includes sign supports, and any other fracture critical structure.

The edition governing the work shall be in effect on the date the Contract was advertised for solicitation of bids.

The Contractor is responsible to provide a Certified Welding Inspector in accordance with the above noted codes. The cost for this service is included in the general cost of the work.

All welders shall be certified by the Engineer in accordance with Section 6.03.

CONNECTICUT
SUPPLEMENTAL SPECIFICATION
SECTION 1.08
PROSECUTION AND PROGRESS

Article 1.08.01 – Transfer of Work or Contract:

Replace the last paragraph with the following:

The Contractor shall not sublet, sell, transfer, assign, or otherwise dispose of the Contract or any portion thereof, or of the work provided for therein, or of its right, title, or interest therein, to any individual or entity without the written consent of the Commissioner. No payment will be made for such work until written consent is provided by the Commissioner.

Article 1.08.07 – Determination of Contract Time:

Replace the fifth paragraph with the following:

The total elapsed time in calendar days, computed as described above, from the commencement date specified in the Engineer's "Notice to Proceed" to the “Substantial Completion” date specified in the Engineer's "Notice of Substantial Completion" shall be considered as the time used in the performance of the Contract work.

Article 1.08.09 – Failure to Complete Work on Time:

Replace the second paragraph with the following:

If the last day of the initial Contract time or the initial Contract date determined for Substantial Completion is before December 1 in the given year, liquidated damages as specified in the Contract shall be assessed against the Contractor per calendar day (including any days during a winter shutdown period) from that day until the date on which the Project is substantially completed.

1.08.12—Final Inspection:

Replace the first paragraph with the following:

If the Engineer determines that the work may be substantially complete, a Semi Final Inspection will be held as soon as practical. After the Semi Final Inspection is held and the Engineer determines that the requirements for Substantial Completion have been satisfied the Engineer will prepare a “Notice of Substantial Completion”.

When the Contractor has completed all work listed in the “Notice of Substantial Completion” the Contractor shall prepare a written notice requesting a Final Inspection and a “Certificate of Acceptance of Work”. The Engineer will hold an Inspection of the Project as soon as practical after the Engineer determines that the Project may be completed. If the Engineer deems the Project complete, said inspection shall constitute the Final Inspection, and the Engineer will notify the Contractor in writing that the Final Inspection has been performed.

1.08.13 – Acceptance of Work and Termination of the Contractor’s Responsibility:

Replace the only paragraph with the following:

The Contractor’s responsibility for non-administrative Project work will be considered terminated when the final inspection has been held, any required additional work and final cleaning-up have been completed, all final operation and maintenance manuals have been submitted, and all of the Contractor’s equipment and construction signs have been removed from the Project site. When these requirements have been met to the satisfaction of the Engineer, the Commissioner will accept the work by certifying in writing to the Contractor that the non-administrative Project work has been completed.

CONNECTICUT
SUPPLEMENTAL SPECIFICATION
SECTION 1.09
MEASUREMENT AND PAYMENT

Article 1.09.04 – Extra and Cost-Plus Work

Delete the word "bonding" *under section* ***(a) Labor****, (3).*

Delete existing section (e) and replace with the following:

(e) Administrative Expense: When extra work on a cost-plus basis is performed by an authorized subcontractor, the Department will pay the Contractor an additional 7.5% for that work; such payment will be in addition to the percentage payments described in (a), (b), (c) and (d) above, as a reimbursement for the Contractor's administrative expense in connection with such work. Approval of such additional payments will be given only after the Contractor provides to the Engineer receipted invoices for all relevant costs.

Change Section designation for Miscellaneous from:

(f) Miscellaneous to: **(g) Miscellaneous**

Add the following as ***(f)****:*

(f) Bonding Costs: For bonding on the total cost of the cost-plus work including administrative expenses as outlined in (e) above, the Contractor shall receive its actual cost. The Contractor shall provide to the Engineer documentation, satisfactory to the Engineer in form and substance, of all such costs.

CONNECTICUT
SUPPLEMENTAL SPECIFICATION
SECTION 1.10
ENVIRONMENTAL COMPLIANCE

Add the following Article:

1.10.08 – VEHICLE EMISSIONS

All motor vehicles and/or construction equipment (both on-highway and non-road) shall comply with all pertinent State and Federal regulations relative to exhaust emission controls and safety.

The Contractor shall establish staging zones for vehicles that are waiting to load or unload at the contract area. Such zones shall be located where the emissions from the vehicles will have minimum impact on abutters and the general public.

Idling of delivery trucks, dump trucks, and other equipment shall not be permitted in excess of 3 minutes during periods of non-activity except as allowed by the Regulations of Connecticut State Agencies Section 22a-174-18(b)(3)(c):

No mobile source engine shall be allowed "to operate for more than three (3) consecutive minutes when the mobile source is not in motion, except as follows:

(i) When a mobile source is forced to remain motionless because of traffic conditions or mechanical difficulties over which the operator has no control,

(ii) When it is necessary to operate defrosting, heating or cooling equipment to ensure the safety or health of the driver or passengers,

(iii) When it is necessary to operate auxiliary equipment that is located in or on the mobile source to accomplish the intended use of the mobile source,

(iv) To bring the mobile source to the manufacturer's recommended operating temperature,

(v) When the outdoor temperature is below twenty degrees Fahrenheit (20 degrees F) [negative seven degrees Celsius (-7 degrees C)],

(vi) When the mobile source is undergoing maintenance that requires such mobile source be operated for more than three (3) consecutive minutes, or

(vii) When a mobile source is in queue to be inspected by U.S. military personnel prior to gaining access to a U.S. military installation."

All work shall be conducted to ensure that no harmful effects are caused to adjacent sensitive receptors. Sensitive receptors include but are not limited to hospitals, schools, daycare facilities, elderly housing and convalescent facilities. Engine exhaust shall be located away from fresh air intakes, air conditioners, and windows.

A Vehicle Emissions Mitigation plan will be required for areas where extensive work will be performed within (less than 50 feet (15 meters)) to sensitive receptors. No work will proceed until a sequence of construction and a Vehicle Emissions Mitigation plan is submitted in writing to the Engineer for review and all comments are addressed in a manner acceptable to the Engineer. The mitigation plan must address the control of vehicle emissions from all vehicles and construction equipment.

Any costs associated with this “Vehicle Emissions” article shall be included in the general cost of the Contract. In addition, there shall be no time granted to the contractor for compliance with this notice. The contractor’s compliance with this notice and any associated regulations shall not be grounds for claims as outlined in Section 1.11 – “Claims”.

CONNECTICUT
SUPPLEMENTAL SPECIFICATION
SECTION 1.11
CLAIMS

Add the following Section:

1.11.01 – General: When filing a formal claim under Section 4-61 (referred to as "Section 4-61" below) of the C.G.S. (as revised), either as a lawsuit in the Superior Court or as a demand for arbitration, the Contractor must follow the procedures and comply with the requirements set forth in this Section of the Specifications. This Section does not, unless so specified, govern informal claims for additional compensation which the Contractor may bring before the Department. The Contractor should understand, however, that the Department may need, before the Department can resolve such a claim, the same kinds of documentation and other substantiation that it requires under this Section. It is the intent of the Department to compensate the Contractor for actual increased costs caused by or arising from acts or omissions on the part of the Department that violate legal or contractual duties owed to the Contractor by the Department.

1.11.02 – Notice of Claim: Whenever the Contractor intends to file a formal claim against the Department under Section 4-61, seeking compensation for additional costs, the Contractor shall notify the Commissioner in writing (in strict compliance with Section 4-61) of the details of said claim. Such written notice shall contain all pertinent information described in Article 1.11.05 below.

Once formal notice of a claim under C.G.S. Section 4-61 (b) (as revised) has been given to the Commissioner, the claimant may not change the claim in any way, in either concept or monetary amount, (1) without filing a new notice of claim and demand for arbitration to reflect any such change and (2) without the minimum period of six months after filing of the new demand commencing again and running before any hearing on the merits of the claim may be held. The only exception to this limitation will be for damages that continue to accrue after submission of the notice, in ways described and anticipated in the notice.

1.11.03 – Record Keeping: The Contractor shall keep daily records of all costs incurred in connection with its construction-related activities on behalf of the Department. These daily records shall identify each aspect of the Project affected by matters related to any claim for additional compensation that the Contractor has filed, intends to file, or has reason to believe that it may file against the Department; the specific Project locations where Project work has been so affected; the number of people working on the affected aspects of the Project at the pertinent time(s); and the types and number of pieces of equipment on the Project site at the pertinent time(s). If possible, any potential or anticipated effect on the Project's progress or schedule which may result in a claim by the Contractor should also be noted contemporaneously with the cause of the effect, or as soon thereafter as possible.

1.11.04 – Claim Compensation: The payment of any claim, or any portion thereof, that is deemed valid by the Engineer shall be made in accordance with the following provisions of this Article:

(a) Compensable Items: The liability of the Department for claims will be limited to the following specifically-identified items of cost, insofar as they have not otherwise been paid for by the Department, and insofar as they were caused solely by the actions or omissions of the Department or its agents (except that with regard to payment for extra work, the Department will pay to the Contractor the mark-ups provided for in Article 1.04.05.):

(1) Additional Project-site labor expenses.
(2) Additional costs for materials.
(3) Additional, unabsorbed Project-site overhead (**e.g.**, for mobilization and demobilization).
(4) Additional costs for active equipment.
(5) For each day of Project delay or suspension caused solely by actions or omissions of the Department, either

(i) an additional ten percent (10%) of the total amount of the costs identified in Subarticles (1) through (4) above; except that if the delay or suspension period prevented the Contractor from incurring enough Project costs under Subarticles (1) through (4) during that period to require a payment by the Department that would be greater than the payment described in subparagraph (ii) below, then the payment for affected home office overhead and profit shall instead be made in the following *per diem* amount:

(ii) six percent (6%) of the original total Contract amount divided by the original number of days of Contract time.

Payment under either (i) or (ii) hereof shall be deemed to be complete and mutually-satisfactory compensation for any unabsorbed home office overhead and any profit related to the period of delay or suspension.

(6) Additional equipment costs. Only actual equipment costs shall be used in the calculation of any compensation to be made in response to claims for additional Project compensation. Actual equipment costs shall be based upon records kept in the normal course of business and in accordance with generally-accepted accounting principles. Under no circumstances shall Blue Book or other guide or rental rates be used for this purpose (unless the Contractor had to rent the equipment from an unrelated party, in which case the actual rental charges paid by the Contractor, so long as they are reasonable, shall be used). Idle equipment, for instance, shall be paid for based only on its actual cost to the Contractor.
(7) Subcontractor costs limited to, and determined in accordance with, Subarticles (1), (2), (3), (4), and (5) above and applicable statutory and case law. Such subcontractor costs may be paid for by the Department only (a) in the context of an informal claims settlement or (b) if the Contractor has itself paid or legally-assumed, present unconditional liability for those subcontractor costs.

(b) Non-Compensable Items: The Department will have no liability for the following specifically-identified non-compensable items:

(1) Profit, in excess of that provided for herein.
(2) Loss of anticipated profit.
(3) Loss of bidding opportunities.
(4) Reduction of bidding capacity.
(5) Home office overhead in excess of that provided for in Article 1.11.04(a)(5) hereof.
(6) Attorneys fees, claims preparation expenses, or other costs of claims proceedings or resolution.
(7) Any other consequential or indirect expenses or costs, such as tort damages, or any other form of expense or damages not provided for in these Specifications or elsewhere in the Contract.

1.11.05 – Required Claim Documentation: All claims shall be submitted in writing to the Commissioner, and shall be sufficient in detail to enable the Engineer to ascertain the basis and the amount of each claim, and to investigate and evaluate each claim in detail. As a minimum, the Contractor must provide the following information for each and every claim and sub-claim asserted:

(a) A detailed factual statement of the claim, with all dates, locations and items of work pertinent to the claim.
(b) A statement of whether each requested additional amount of compensation or extension of time is based on provisions of the Contract or on an alleged breach of the Contract. Each supporting or breached Contract provision and a statement of the reasons why each such provision supports the claim, must be specifically identified or explained.
(c) Excerpts from manuals or other texts which are standard in the industry, if available, that support the Contractor's claim.
(d) The details of the circumstances that gave rise to the claim.
(e) The date(s) on which any and all events resulting in the claim occurred, and the date(s) on which conditions resulting in the claim first became evident to the Contractor.
(f) Specific identification of any pertinent document, and detailed description of the substance of any material oral communication, relating to the substance of such claim.
(g) If an extension of time is sought, the specific dates and number of days for which it is sought, and the basis or bases for the extension sought. A critical path method, bar chart, or other type of graphical schedule that supports the extension must be submitted.

(h) When submitting any claim over $50,000, the Contractor shall certify in writing, under oath and in accordance with the formalities required by the contract, as to the following:
    (1) That supporting data is accurate and complete to the Contractors best knowledge and belief;
    (2) That the amount of the dispute and the dispute itself accurately reflects what the Contractor in good faith believes to be the Departments liability;
    (3) The certification shall be executed by:
        a. If the Contractor is an individual, the certification shall be executed by that individual.
        b. If the Contractor is not an individual, the certification shall be executed by a senior company official in charge at the Contractor's plant or location involved or an officer or general partner of the Contractor having overall responsibility for the conduct of the Contractors affairs.

1.11.06 – Auditing of Claims: All claims filed against the Department shall be subject to audit by the Department or its agents at any time following the filing of such claim. The Contractor and its subcontractors and suppliers shall cooperate fully with the Department's auditors. Failure of the Contractor**,** its subcontractors, or its suppliers to maintain and retain sufficient records to allow the Department or its agents to fully evaluate the claim shall constitute a waiver of any portion of such claim that cannot be verified by specific, adequate, contemporaneous records, and shall bar recovery on any claim or any portion of a claim for which such verification is not produced. Without limiting the foregoing requirements, and as a minimum, the Contractor shall make available to the Department and its agents the following documents in connection with any claim that the Contractor submits:

(1) Daily time sheets and foreman's daily reports.
(2) Union agreements, if any.
(3) Insurance, welfare, and benefits records.
(4) Payroll register.
(5) Earnings records.
(6) Payroll tax returns.
(7) Records of property tax payments.
(8) Material invoices, purchase orders, and all material and supply acquisition contracts.
(9) Materials cost distribution worksheets.
(10) Equipment records (list of company equipment, rates, etc.).
(11) Vendor rental agreements
(12) Subcontractor invoices to the Contractor, and the Contractor's certificates of payments to subcontractors.
(13) Subcontractor payment certificates.
(14) Canceled checks (payroll and vendors).
(15) Job cost reports.
(16) Job payroll ledger.

(17) General ledger, general journal (if used), and all subsidiary ledgers and journals**,** together with all supporting documentation pertinent to entries made in these ledgers and journals.
(18) Cash disbursements journals.
(19) Financial statements for all years reflecting the operations on the Project.
(20) Income tax returns for all years reflecting the operations on the Project.
(21) Depreciation records on all company equipment**,** whether such records are maintained by the company involved, its accountant, or others.
(22) If a source other than depreciation records is used to develop costs for the Contractor's internal purposes in establishing the actual cost of owning and operating equipment, all such other source documents.
(23) All documents which reflect the Contractor's actual profit and overhead during the years that the Project was being performed**,** and for each of the five years prior to the commencement of the Project.
(24) All documents related to the preparation of the Contractor's bid**,** including the final calculations on which the bid was based.
(25) All documents which relate to the claim or to any sub-claim, together with all documents that support the amount of damages as to each claim or sub-claim.
(26) Worksheets used to prepare the claim, which indicate the cost components of each item of the claim, including but not limited to the pertinent costs of labor, benefits and insurance, materials, equipment, and subcontractors' damages, as well as all documents which establish the relevant time periods, individuals involved, and the Project hours and the rates for the individuals.
(27) The name, function, and pertinent activity of each Contractor's or subcontractor's official, or employee involved in or knowledgeable about events that give rise to, or facts that relate to, the claim.
(28) The amount(s) of additional compensation sought and a break-down of the amount(s) into the categories specified as payable under Article 1.11.04 above.
(29) The name, function, and pertinent activity of each Department official, employee or agent involved in or knowledgeable about events that give rise to, or facts that relate to, the claim.

CONNECTICUT
SUPPLEMENTAL SPECIFICATION
SECTION 1.20
GENERAL CLAUSES FOR FACILITIES CONSTRUCTION

1.20-1.00 – General:

Delete the last sentence of the first paragraph and replace with the following:

"Facilities Construction is defined as the type of construction that requires the issuance of a Certificate of Compliance (C.O.C.) by the State Building Inspector or his authorized representative at the completion of a project, and includes site work considered ancillary to this type of construction."

Add the following article:

1.20-1.01.01—Definitions:

OWNER: Where used herein, it is synonymous with Department or State.

1.20-1.02.04 – Examination of Plans, Specifications, Special Provisions and Site of Work:

Delete the first sentence of the first paragraph and replace with the following:

"CSI-formatted specifications are organized into Divisions and Sections based on the CSI's "MasterFormat" numbering system."

1.20-1.02.13 – Knowledge of Applicable Laws:

Delete Items 1 through 9 in their entirety and replace with the following:

1. "The 2003 International Building Code with the State Building Code, including latest Connecticut Supplement and Amendments.
2. The 2003 International Plumbing Code.
3. The 2003 International Mechanical Code.
4. The 2003 International Existing Building Code.
5. The 2006 International Energy Conservation Code.
6. The 2005 NFPA 70 National Electrical Code.
7. The 2003 ICC/ANSI A117.1.

8. The Fire Safety Code, including latest Connecticut Supplement and Amendments.
9. The 2003 International Fire Code.
10. The 2003 NFPA 1 Uniform Fire Code.
11. The 2003 NFPA 101 Life Safety Code."

Add the following as the new last paragraph:

"All work to be performed by the Contractor shall comply with the "Americans with Disabilities Act Accessibility Guidelines."

1.20-1.03.01 – Consideration of Bids:

Delete the entire article and replace with the following:

"The apparent low bidder shall submit to the Manager of Contracts a Schedule of Values within 14 days after bid opening. Any other Contractor that the Department may subsequently designate as the apparent lowest bidder shall make the aforesaid submission within 14 days from the date on which the Department notifies said Contractor that it has become the apparent lowest bidder. If, however, the Department deems it necessary for such a subsequently designated Contractor to make said submission within a shorter period of time, the Contractor shall make the submission within the time designated by the Department.

The total in the Schedule of Values shall equal the bid dollar amount for the Major Lump Sum Item (MLSI).

The Schedule of Values shall be divided into "Line Items" listed separately for each CSI Section of the Special Provisions. An additional line item for "Mobilization" may be incorporated into the Schedule of Values; however, this item may not exceed 10% of the value of the MLSI. The "Mobilization" line item will also include costs associated with "General Conditions" and "Insurance/Bonding." Where requested by the Department, the Contractor shall break down the line items further into more specific line items.

In the event that this Contract is terminated or a portion of this Contract is deleted for any reason or in any way allowable by law under this Contract after the apparent low bidder has been awarded the Contract, the Schedule of Values will <u>not</u> be used for estimating payment due the Contractor for work completed prior to such termination of the Contract or deletion of work thereunder. In the case of Contract termination, payment shall be made in accordance with Article 1.05.14."

1.20-1.05.02--Shop Drawings, Product Data, Product Samples and Quality Assurance Submittals

Delete the last sentence of the first paragraph and replace with the following:

"All facsimiles or other electronic documents from the Contractor shall be followed by an official transmittal."

Delete the third paragraph and replace with the following:

"The Contractor shall number each submittal consecutively: When resubmitting a "Revise and Resubmit" or "Rejected" submittal, the Contractor shall label the transmittal with the original submittal number followed by a letter to designate the additional submission. All submittals shall be numbered conforming to the following examples:"

In column B of line 001, line 001a, and line 001b of the table in subsection 1, replace "07511" with "075110."

Add the following to the end of the first paragraph of subsection 2:

"The Department reserves the right to return partial submittals unreviewed to the Contractor."

Revise the third paragraph of subsection 2 to read:

"The Contractor shall allow at least 60 calendar days for review of any submittal requiring approval by FAA, FTA, any railroad, DEP, U.S. Coast Guard, Army Corps of Engineers, or any other outside agency."

Delete the third and fourth paragraphs of subsection 3 and replace with the following:

"The Designer will not review submittals and the Engineer will not process payment estimates until the initial submittal schedule has been provided. Any delays in construction due to the Contractor's failure to provide a submittal schedule shall be the responsibility of the Contractor.

The Contractor must update its submittal schedule at least once a month, and distribute and post each updated schedule in the manner described above. The Engineer reserves the right not to process payment estimates without a recently updated submittal schedule on file."

Replace the first sentence of the first paragraph of subsection 4 with the following:

"Shop Drawings consist of fabrication and installation drawings, roughing-in and setting drawings, schedules, patterns, templates and similar drawings, and wiring diagrams showing field-installed wiring, including power, signal, and control wiring."

Replace the second paragraph of subsection 4 with the following:

"Shop drawings shall include the following information: Contract number, Project description, number and title of the drawing, date of drawing, revision number, name of Contractor and subcontractor submitting drawings, dimensions, identification of products, shopwork manufacturing instructions, design calculations, statement of compliance with Contractual standards, notation of dimensions established by field measurement, relationship to adjoining construction clearly indicated, seal and signature of a professional engineer if specified, and any other information required by individual Contract provisions."

Replace the first sentence of the first paragraph of subsection 5 with the following:

"Product data consist of printed information such as manufacturer's product specifications, manufacturer's installation instructions, manufacturer's catalog cuts, standard color charts, wiring diagrams showing factory-installed wiring, printed performance curves, operational range diagrams, and mill reports."

Replace the first sentence of the first paragraph of subsection 7 with the following:

"Quality assurance submittals consist of qualification data, design data, certifications, manufacturer's instructions, manufacturer's field reports, test reports, Material Safety Data Sheets (MSDSs), and other quality assurance information required by individual Contract provisions."

1.20-1.05.04—Coordination of Special Provisions, Plans, Supplemental Specifications and Standard Specifications and Other Contract Requirements:

Delete the first and second paragraphs and replace with the following:

"Industry Standards: Each entity engaged in construction of the Contract shall be familiar with industry standards applicable to that entity's construction activities. If printed standards have been established by organizations referenced in Article 1.01.02 or in the Contract, the Contractor shall obtain copies of said standards directly from the publication source.

Unless the Special Provisions include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Special Provisions to the extent referenced. Such standards are made a part of the Contract by reference."

Add the following article:

1.20-1.05.08—Schedules and Reports:

Daily Construction Reports: The Contractor shall assist the Engineer in the preparation of a daily construction report, by ensuring that each of the Contractor's employees and subcontractors working on the Project site on a given day signs the Engineer's sign-in sheet for that day; and by keeping and providing to the Engineer its own daily list of employees and subcontractors who worked on the Project site on that day.

Add the following article:

1.20-1.05.23—Requests for Information (RFIs):

The Contractor shall forward all RFIs to the Engineer in writing (facsimile or other electronic document) for review. The Engineer will forward the RFI to the Designer for review. Upon receipt of an RFI, the Designer will attempt to determine if additional information is required from the Contractor to respond to the RFI, and request said information from the Engineer.

All other RFIs will be responded to within 10 calendar days of receipt by the Designer.

1.20-1.05.24--Project Meetings:

Delete the third paragraph under subsection 1.

Delete the second paragraph under subsection 2 and replace with the following:

"The meeting participants shall review progress of other construction activities and preparations for the particular activity under consideration, including requirements of Contract documents, related requests for interpretations, related construction orders, purchases, deliveries, submittals, review of mockups, possible conflicts, compatibility problems, time schedules, weather limitations, manufacturer's written recommendations, warranty requirements, compatibility of materials, acceptability of substrates, temporary facilities and controls, space and access limitations, regulations of authorities having jurisdiction, testing and inspecting requirements, installation procedures coordination with other work, required performance results, protection of adjacent work, and protection of construction and personnel."

Delete the second, third and fourth paragraph under subsection 3 and replace with the following:

"The Contractor shall provide the Engineer with a detailed agenda for the proposed

meeting, specifying what topics will be covered. In addition to representatives of the Engineer, each subcontractor, supplier or other entity concerned with current progress or involved in planning, coordination or performance of future activities shall attend these meetings. All participants at the meeting shall be familiar with the Project and authorized to conclude matters relating to the Project.

At each progress meeting, the participants shall (1) review items of significance that could affect progress; (2) discuss topics appropriate to the current status of the Project; (3) review progress since the last meeting; (4) determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to the Contractor's Construction Schedule; (5) determine how to expedite any Project work that may be behind schedule; (6) discuss whether or not schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract time; and (7) review the present and future needs of each entity represented at the meeting, including such items as interface requirements, time, sequences, deliveries, off-site fabrication problems, access, site utilization, temporary facilities and controls, hours of work, hazards and risks, housekeeping, quality and work standards, status of correction of deficient items, field observations, requests for interpretations, status of proposal requests, pending changes, status of construction orders, and documentation of information for payment requests. The Engineer will distribute copies of minutes of the meeting to the Designer and the Contractor. The Contractor shall distribute copies to parties who were or should have been at the meeting."

*Delete article **1.20-1.05.25—Schedules and Reports** in its entirety*

1.20-1.06.08 - Warranties:

Delete the eighth and ninth paragraph and replace with the following:

"The Contractor shall:

(a) Bind warranties in heavy-duty, commercial-quality, durable 3-ring vinyl-covered loose-leaf binders, thick enough to accommodate the contents, and sized to receive 8 1/2-inch x 11-inch paper (216-millimeter x 279-millimeter) paper.

(b) Identify the binder's contents on the binder's front and spine with the typed or printed title "WARRANTIES," the Project title or name, and the name of the Contractor.

(c) Provide a heavy paper divider with a tab for each separate warranty.

(d) Mark the tab to identify the related product or installation.

(e) Provide a typed description of the product or installation, including the name of the product, and the name, address and telephone number of the Contractor or pertinent subcontractor.

(f) Furnish to the Department a written warranty for all Project work accompanied by a cover letter with the following contents:

[Addressed to:]

Commissioner of Transportation
Department of Transportation
P.O. Box 317546
Newington, Connecticut 06131-7546

Project Title and Number

[We] hereby warrant all materials and workmanship for all work performed under this Contract for a period of one (1) year from [date of issuance of C.O.C.] against failures of workmanship and materials in accordance with the Contract. Furthermore, as a condition of this warranty, [we] agree to have in place all insurance coverage identified in the Contract for the performance of any warranty work.

[Signature:] [Name of authorized signatory]
[Title]

(g) Submit to the Engineer, upon completion of installation of materials or assemblies that are required to have either a flame-rating or a fire-endurance hourly rating, a detailed letter certifying that the required rating has been attained.

Upon determination by the Engineer that Project work covered by a warranty has failed, the Contractor shall replace or rebuild the work to an acceptable condition complying with Contract requirements. The Contractor is responsible for the cost of replacing or rebuilding defective construction or components and those which may have needed to be damaged or removed in order to cure the defective work including costs of material, equipment, labor, and material disposal, regardless of whether or not the State has benefited from use of the work through a portion of its anticipated useful service life. The Contractor shall respond to the Project Site when Project work covered by a warranty has failed within 3 calendar days, unless in the Engineer's opinion said failure is deemed to be an emergency, in which case the Contractor shall respond to the Project Site as directed by the Engineer."

1.20-1.08.03—Prosecution of Work:

Under subsection '3. Cutting and Patching,' delete the heading 'B. Protection of Structural Elements' and replace with the following:

"**B. Protection:**"

Move the existing first and second paragraphs to under the following subparagraph:

"1. Structural Elements:"

Add the following after the first paragraph under B:

"2. Operational Elements: The Contractor shall not cut and patch operating elements and related components in a manner that results in their reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.

3. Miscellaneous Elements: The Contractor shall not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity, that results reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety."

Add the following after subsection 3:

"4. Selective Demolition:

A. Definitions:

Remove: The Contractor shall detach materials from existing construction and legally dispose or recycle them off-site, unless indicated to be removed and salvaged or removed and reinstalled. Except for materials indicated to be reused, salvaged,

reinstalled, or otherwise indicated to remain Engineer's property, demolished materials shall become Contractor's property and shall be removed from the Project Site.

Remove and Salvage: The Contractor shall detach materials from existing construction and deliver them to Engineer. The Engineer reserves the right to identify other materials for salvage during the course of demolition.

Remove and Reinstall: The Contractor shall detach materials from existing construction, prepare them for reuse, and reinstall them where indicated.

Existing to Remain: Existing materials of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

B. Approval Process:

The Contractor shall submit pre-demolition photographs to the Engineer prior to the commencement of Project work to show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by selective demolition operations.

Well in advance of performing any selective demolition on the Project, the Contractor shall submit to the Engineer a proposal describing the procedures that the Contractor intends to use for same.

The Contractor shall include the following information, as applicable, in its proposal: (1) detailed sequence of selective demolition and removal work with starting and ending dates for each activity while ensuring that the Engineer's on-site operations are not disrupted; (2) interruption of utility services; (3) coordination for shutoff, capping, and continuation of utility services; (4) use of elevators and stairs; (5) locations of temporary partitions and means of egress; (6) coordination of Engineer's continuing occupancy of

portions of existing building and of Engineer's partial occupancy of completed Project work; and (7) means of protection for items to remain and items in path of waste removal from building.

The Contractor shall comply with (1) governing EPA notification regulations before beginning selective demolition; (2) hauling and disposal regulations of authorities having jurisdiction; (3) ANSI A10.6; and (4) NFPA 241.

The Engineer will conduct a Pre-Demolition Meeting at the Project site in accordance with Article 1.20-1.05.24. Said meeting will review the methods and procedures related to selective demolition including, but not limited to, the following: (1) an inspection and discussion of the condition of construction to be selectively demolished; (2) a review of the structural load limitations of the existing structure; (3) a review and finalization of the

selective demolition schedule and a verification of the availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays; (4) a review of requirements of Project work performed by other trades that rely on substrates exposed by selective demolition operations; and (5) a review of areas where existing construction is to remain and requires protection.

C. Repair Materials:

The Contractor shall comply with Article 1.20-1.08.03 subsection 3E for repair materials and shall comply with material and installation requirements specified in other Contract provisions.

D. Examination:

The Contractor shall (1) verify that utilities have been disconnected and capped; (2) survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required; (3) inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged; (4) investigate and measure the nature and extent of unanticipated mechanical, electrical, or structural elements that conflict with intended function or design and submit a written report to

Engineer; and (5) perform surveys as the Project work progresses to detect hazards resulting from selective demolition activities.

E. Utility Services:

The Contractor shall (1) maintain existing utility services indicated to remain and protect them against damage during selective demolition operations; (2) not interrupt existing utilities serving occupied or operating facilities unless authorized in writing by the Engineer; (3) provide temporary services during interruptions to existing utilities, as acceptable to Engineer; (4) provide at least 3 calendar days notice to the Engineer if shutdown of service is required during changeover; and (5) locate, identify, disconnect,

and seal or cap off indicated utilities serving areas to be selectively demolished. The Contractor shall arrange to shut off indicated utilities with utility companies. If utility services are required to be removed, relocated, or abandoned, before proceeding with selective demolition the Contractor shall provide temporary utilities that bypass area of selective demolition and that maintain continuity of service to other parts of building. The Contractor shall cut off pipe or conduit in walls or partitions
to be removed and shall cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing.

The Contractor shall refer to other Contract provisions for shutting off, disconnecting, removing, and sealing or capping utilities. The Contractor shall not start selective demolition work until utility disconnecting and sealing have been completed and verified by the Engineer in writing.

F. Preparation:

The Contractor shall conduct selective demolition and debris-removal operations to ensure minimum interference with adjacent occupied and used facilities on the Project site. The Contractor shall not disrupt the Owner's operations without the Engineer's permission. The Contractor shall protect existing site improvements, appurtenances, and landscaping to remain.

The Contractor shall provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain. The Contractor shall provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas. The Contractor shall protect walls, ceilings, floors, and other existing finish work that are to remain or that are
exposed during selective demolition operations. The Contractor shall cover and protect furniture, furnishings, and equipment that have not been removed.

The Contractor shall provide temporary enclosures for protection of existing building

and construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. The Contractor shall provide temporary weathertight enclosure for building exterior. Where heating is needed and permanent enclosure is not complete, the Contractor shall provide insulated temporary enclosures and shall coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.

The Contractor shall erect and maintain dustproof partitions and temporary enclosures to limit dust and dirt migration and to separate areas from fumes and noise.

The Contractor shall provide and maintain interior and exterior shoring, bracing, or structural support to preserve stability and prevent movement, settlement, or collapse of construction to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished. The Contractor shall strengthen or add new supports when required during progress of selective demolition.

G. Pollution Controls:

The Contractor shall comply with governing regulations pertaining to environmental protection.

The Contractor shall not use water when it may create a hazardous or objectionable condition such as ice, flooding, or pollution.

The Contractor shall remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas. The Contractor shall remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.

The Contractor shall clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. The Contractor shall return adjacent areas to condition existing before selective demolition operations began.

H. Performance:

The Contractor shall not use explosives for demolition purposes.

The Contractor shall demolish and remove existing construction only to the extent required by new construction and as indicated. The Contractor shall (1) proceed with selective demolition systematically; (2) neatly cut openings and holes plumb, square, and true to dimensions required; (3) use cutting methods least likely to damage

remaining or adjoining construction; (4) use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces; (5) temporarily cover openings to remain; (6) cut or drill from the

exposed or finished side into concealed surfaces to avoid marring existing finished surfaces; (7) not use cutting torches until work area is cleared of flammable materials; (8) verify condition and contents of concealed spaces such as duct and pipe interiors before starting flame-cutting operations; (9) maintain fire watch and portable fire-suppression devices during flame-cutting operations; (10) maintain adequate ventilation when using cutting torches; (11) remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site; (12) remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation; (13) locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing; and (14) dispose of demolished items and materials promptly.

The Contractor shall comply with the Engineer's requirements for using and protecting walkways, building entries, and other building facilities during selective demolition operations.

The Contractor shall demolish and remove foundations and other below grade structures completely unless otherwise indicated on the plans. The Contractor shall fill below grade areas and voids resulting from demolition of structures with granular fill materials. Prior to placement of fill materials, the Contractor shall ensure that the areas to be filled are free of standing water, frost, frozen material, trash, and debris. After fill placement and compaction, grade surface to meet adjacent contours and provide flow

to surface drainage structures. Backfilling and grading related to demolition is included in the Major Lump Sum Item (MLSI) for the Project. There will be no separate payment for this backfilling and grading.

The Contractor shall (1) demolish concrete in sections; (2) cut concrete at junctures with construction to remain to the depth shown on the Contract plans and at regular intervals using power-driven saw; and (3) remove concrete between saw cuts.

The Contractor shall (1) demolish masonry in small sections; (2) cut masonry at junctures with construction to remain using power-driven saw; and (3) remove masonry between saw cuts.

The Contractor shall (1) saw-cut perimeter of concrete slabs-on-grade to be demolished as shown on the Contract plans; and (2) break up and remove concrete slabs-on-grade.

The Contractor shall (1) remove floor coverings and adhesive according to recommendations in RFCI-WP and its Addendum; and (2) remove residual adhesive and prepare substrate for new floor coverings by one of the methods recommended by RFCI.

The Contractor shall (1) only remove existing roofing in one day to the extent that it can

be covered by new roofing; and (2) refer to other Contract provisions for new roofing requirements.

The Contractor shall remove air conditioning equipment without releasing refrigerants.

I. Reuse of Building Elements:

The Contractor shall not demolish building elements beyond what is indicated on the plans without the Engineer's approval.

J. Removed and Salvaged Materials:

Unless otherwise directed by the Engineer, the Contractor shall (1) store materials in a secure area until delivery to the owner; (2) transport materials to the owner's storage area off-site; and (3) protect materials from damage during transport and storage.

K. Removed and Reinstalled Materials:

Unless otherwise directed by the Engineer, the Contractor shall (1) clean and repair materials to functional condition adequate for intended reuse; (2) paint equipment to match the color of new equipment; (3) protect materials from damage during transport and storage; and (4) reinstall items in locations indicated complying with installation requirements for new materials and equipment and providing connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

L. Existing Materials to Remain:

The Contractor shall protect construction indicated to remain against damage and soiling during selective demolition.

The Contractor shall drain piping and cap or plug piping with the same or a compatible piping material for piping to be abandoned in place.

The Contractor shall cap or plug ducts with the same or a compatible ductwork material for ducts to be abandoned in place.

The Contractor shall cut and remove concealed conduits and wiring to be abandoned in place 2-inches (50-mm) below the surface of the adjacent construction, cap the conduit end, and patch the surface to match the existing finish. The Contractor shall cut existing conduits installed in concrete slabs to be abandoned in place flush with the top of the slab and fill conduit end with a minimum of 4-inches (100-mm) of concrete.

M. Patching and Repairing:

The Contractor shall comply with Article 1.20-1.08.03 subsection 3H for patching and

repairing damage to adjacent construction caused by selective demolition operations.

N. Disposal of Demolished Materials:

The Contractor shall (1) not allow demolished materials to accumulate or be sold on the Project Site; (2) not burn demolished materials on the Project Site; and (3) promptly and legally dispose or recycle demolished materials off the Project Site."

1.20-1.08.05--Personnel and Equipment:

Replace "FM with "FMG" in subsection (a)

Add the following article:

"**1.20-1.08.12--Semi-Final and Final Inspections:**

1. Semi-Final Inspection: Before requesting the Semi-Final Inspection, the Contractor shall show 100% completion for all Project work claimed as complete. The Contractor shall submit final test/adjust/balance records including the final air and water balance report. For all incomplete Project work, the Contractor shall prepare its own "Punch List" of the incomplete items and reasons the work is not complete. The Contractor shall submit final test/adjust/balance records including the final air and water balance report.

On receipt of a Contractor request for inspection, the Engineer will proceed with inspection or notify the Contractor of unfulfilled requirements. The Engineer will prepare a "Punch List" of unfilled, substandard, or incomplete items. During this inspection, the Contractor shall have all technicians necessary to demonstrate the complete operation of all systems on-site. Examples of such systems include, but are not limited to, the following: boiler, HVAC, fire alarm, and building automation. The Engineer will advise the Contractor of the construction that must be completed or corrected before the issuance of the C.O.C. Results of the completed inspection will form the basis of requirements for the Final Inspection. The Engineer reserves the right to issue the C.O.C. after the Semi-Final Inspection if there are no Building Code or Fire Code compliance issues or any major "Punch List" items.

2. Final Inspection: Before requesting Final Inspection for issuance of the C.O.C., the Contractor shall: (1) submit specific warranties, maintenance service agreements, final certifications and similar documents; (2) submit Record Drawings, Record Specifications, operations and maintenance manuals, final project photographs, property surveys, and similar final record information; (3) deliver spare parts; (4) make final changeover of permanent locks and deliver the keys to the Engineer; (5) complete start-up testing of systems; (6) train the owner's operation and maintenance personnel; (7) discontinue or change over and remove temporary facilities from the Project Site, along with construction tools, mock-ups, and similar elements; (8) complete final

cleaning requirements, including touch-up painting; (9) touch-up and otherwise repair and restore marred exposed finishes to eliminate visual defects; (10) submit a certified copy of the Engineer's “Punch List” of items to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, and the list has been endorsed and dated by the Engineer; (11) submit final meter readings for utilities, a measured record of stored fuel, and similar data as of the date of Final Inspection, or when the Engineer took possession of and responsibility for corresponding elements of the Project work; and (12) install permanent electrical service. The Contractor shall

install permanent electrical service prior to Semi-Final Inspection if requested by the Engineer, or if necessary for the Engineer or Contractor to perform testing of building and other related systems and equipment to certify acceptance and completion of Project work. The Contractor shall submit all outstanding items or unacceptable submissions from the Semi-Final Inspection, or other outstanding items required for submittal, prior to the Final Inspection.

On receipt of a Contractor request for inspection, the Engineer will proceed with inspection and notify the Contractor of unfulfilled requirements.”

1.20 – 1.08.13 – Termination of the Contractor’s Responsibility:

Add subsection 3 as follows:

“**3. Insurance Coverage:** The Contractor shall have in place all insurance coverage identified in Article 1.03.07 for the performance of any warranty work.”

1.20-1.08.14--Acceptance of Project:

Add the following to subsection 2 under the heading “Equipment and Systems Maintenance Manual:”

“(j) Copies of maintenance agreements with service agent name and telephone number.”

Add the following paragraph in subsection 3 after the second paragraph:

“The Contractor shall provide a syllabus prior to the training to ensure that the appropriate owner’s operation and maintenance personnel are in attendance.”

Delete the last paragraph and replace with the following:

The Contractor shall submit to the Engineer for approval, a qualified commercial videographer to videotape the training sessions. The videographer shall be a firm or an individual of established reputation that has been regularly engaged as a professional videographer for not less than 3 years.

The Contractor shall video record each training session and provide said video in DVD format to the Engineer for the owner's future use."

Add the following section:

"1.20-1.09.06—Partial Payments:

With each payment request under the MLSI, the Contractor shall submit AIA Form G702 (Application and Certificate of Payment) and Form G703 (Continuation Sheet). The Contractor is not required to obtain the Architect's signature on Form G702. Once approved by the Engineer, the Forms G702 and G703 become the basis of payment under the MLSI."

Add the following section:

"1.20-9.75.04—Method of Measurement:

Mobilization as defined in Article 1.20-1.03.01 will be paid in the manner described hereinafter; however, the determination of the total contract price earned shall not include the amount of mobilization earned during the period covered by the current monthly estimate – but shall include amounts previously earned and certified for payment:

1. When the first payment estimate is made, 25 percent of the "Mobilization" line item will be certified for payment.

2. When the Baseline Schedule, as specified under Section 1.05.08, is accepted, 50 percent of the "Mobilization" line item, minus any previous payments, will be certified for payment.

3. When 10 percent of the total original contract price is earned and the Baseline Schedule, as specified under Section 1.05.08, is accepted, 75 percent of the "Mobilization" line item, minus any previous payments, will be certified for payment.

4. When 30 percent of the total original contract price is earned and the Baseline Schedule, as specified under Section 1.05.08, is accepted, 100 percent of the "Mobilization" line item, minus any previous payments, will be certified for payment."

CONNECTICUT
SUPPLEMENTAL SPECIFICATION
SECTION 2.02
ROADWAY EXCAVATION, FORMATION OF EMBANKMENT AND DISPOSAL OF SURPLUS MATERIAL

2.02.04 – Method of Measurement:

Second to last Paragraph - replace the last sentence with the following:

"Bituminous parking areas are considered as bituminous concrete pavement."

CONNECTICUT
SUPPLEMENTAL SPECIFICATION
SECTION 2.05
TRENCH EXCAVATION

Delete the entire Section and replace with the following:

2.05.01--Description:

Paragraph 2 - Delete the only sentence and replace with the following:

2) The removal of stormwater drainage structures, stormwater pipes and appurtenances beyond the limits of the roadway and structure excavation.

Sub article 2 - Rock in Trench - Delete the only sentence and replace with the following:

(2) Rock, insofar as it applies to trench excavation, shall be defined as rock in definite ledge formation, boulders, or portions of boulders, cement masonry structures, concrete structures, reinforced concrete pipe, Portland cement concrete pavement or base, of 1/2 cubic yard (0.5 cubic meters) or more in volume, removed as indicated or directed from within the payment lines for trench excavation.

2.05.05 -Basis of Payment

Paragraph 13 - Delete the entire sentence “There will be no direct payment for the plugging of existing pipes....." and replace with the following:

There will be no direct Payment for the plugging of existing pipes, removal and disposal of metal or plastic pipes or for the breaking up of floors in drainage structures being abandoned. The cost shall be included in the contract unit prices of the drainage and excavation items.

CONNECTICUT
SUPPLEMENTAL SPECIFICATION
SECTION 3.04
PROCESSED AGGREGATE BASE

Delete the entire Section and replace with the following:

3.04.01--Description: The base shall consist of a foundation constructed on the prepared subbase or subgrade in accordance with these specifications and in conformity with the lines, grades, compacted thickness and typical cross-section as shown on the plans.

3.04.02--Materials: All materials for this work shall conform to the requirements of Article M.05.01.

3.04.03--Construction Methods: Only one type of coarse aggregate shall be used on a project unless otherwise permitted by the Engineer.

Prior to placing the processed aggregate base, the prepared subbase or subgrade shall be maintained true to line and grade, for a minimum distance of 200 feet (60 meters) in advance of the work. None of the aggregate courses shall be placed more than 500 feet (150 meters) ahead of the compaction and binding operation on that particular course.

The processed aggregate base shall be spread uniformly by a method approved by the Engineer. The thickness of each course shall not be more than 4 inches (100 millimeters) after compaction, unless otherwise ordered.

After the aggregate is spread, it shall be thoroughly compacted and bound by use of equipment specifically manufactured for that purpose. Rollers shall deliver a ground pressure of not less than 300 pounds per lineal inch (52.5 newtons/millimeter) of contact width and shall have a weight (mass) not less than 10 tons (9100 kilograms). Vibratory units shall have a static weight (mass) of not less than 4 tons (3650 kilograms). Water may be used during the compaction and binding operation and shall be applied from an approved watering device. The compacting and binding operation shall begin at the outside edges, overlapping the shoulders for a distance of not less than 6 inches (150 millimeters) and progress towards the middle, parallel with the centerline of the pavement. The work shall cover the entire surface of the course with uniform overlapping of each preceding track or pass. Areas of super-elevation and special cross slope shall be compacted by beginning at the lowest edge and proceeding towards the higher edge, unless otherwise directed by the Engineer. The compacting and binding operation shall be continued until the voids in the aggregates have been reduced to provide a firm and uniform surface satisfactory to the Engineer. The amount of compactive effort shall in no case shall be less than four (4) complete passes of the compacting and binding operations. All aggregate shall be completely compacted and bound at the end of each day's work or when traffic is to be permitted to operate on the

road. The dry density of each layer of processed aggregate base after compaction shall not be less than 95 percent of the dry density for that material when tested in accordance with AASHTO T180, Method D.

Should the subbase or subgrade material become churned up or mixed with the processed aggregate base at any time, the Contractor shall, without additional compensation remove the mixture. The Contractor shall add new subbase material, if required, and reshape and recompact the subbase in accordance with the requirements of Article 2.12.03. New aggregate material shall be added, compacted and bound, as hereinbefore specified, to match the surrounding surface.

Any surface irregularities which develop during, or after work on each course, shall be corrected by loosening material already in place and removing or adding aggregate as required. The entire area, including the surrounding surface, shall be re-compacted and rebound until it is brought to a firm and uniform surface satisfactory to the Engineer.

3.04.04--Method of Measurement: Processed Aggregate Base will be measured horizontally in–place after final grading and compaction. Materials placed beyond the horizontal limits indicated on the plans will not be measured for payment.

The total thickness shall be as indicated on the plans, or as ordered by the Engineer and within a tolerance of minus three-fourths of an inch (-$^{3}/_{4}$") to plus one-half inch (+ $^{1}/_{2}$") (-19 millimeters to +13 millimeters).

Measurements to determine the thickness will be taken by the Engineer at intervals of 500 feet (150 meters) or less, along lanes, and shall be considered representative of the lane. For the purpose of these measurements, a shoulder will be considered a lane.

If a thickness measurement is taken and found deficient, the Engineer will take such additional measurements as he considers necessary to determine the longitudinal limits of the deficiency. Areas not within allowable tolerances shall be corrected, as ordered by the Engineer, without additional compensation to the Contractor.

3.04.05--Basis of Payment: This work will be paid for at the contract unit price per cubic yard for "Processed Aggregate Base", complete in place, which price shall include all materials, tools, equipment and work incidental thereto.

Pay Item	Pay Unit
Processed Aggregate Base	c.y. (cu. m)

CONNECTICUT
SUPPLEMENTAL SPECIFICATION
SECTION 4.01
CONCRETE PAVEMENT

Article 4.01.03-A. Composition:

Add the following new paragraph before the last paragraph:

"The temperature of the concrete at the time of placement shall not be less than 60˚ F (15.5˚ C) or greater than 90˚ F (32˚ C). For pumped concrete, the temperature shall be determined at the placement end of the pump line. The temperature of the concrete shall be determined in accordance with ASTM C1064."

CONNECTICUT
SUPPLEMENTAL SPECIFICATION
SECTION 5.14
PRESTRESSED CONCRETE MEMBERS

Article 5.14.03 – Construction Methods:

Change the last sentence of 5.14.03-16 – Methods and Equipment to read:

"The results of this investigation, including computations, shall be submitted to the Engineer."

CONNECTICUT
SUPPLEMENTAL SPECIFICATION
SECTION 6.01
CONCRETE FOR STRUCTURES

Article 6.01.02 – Materials:

Add the following:

Material for stay-in-place metal forms shall be made of zinc-coated (galvanized) steel sheet conforming to ASTM Specification A653, Structural Steel (SS) Grade 33 through 80 (ASTM Specification A653M, Structural Steel (SS) Grade 250 through 550). The minimum gage thickness shall be 20 gage. Coating weight shall conform to ASTM A924, Class G235 (ASTM A924M, Class Z700) and shall otherwise meet all requirements relevant to steel stay-in-place metal forms and the placing of concrete as specified herein and as noted on the contract drawings.

Material for the form supports shall be fabricated from the same material and conform to the same material requirements as the forms themselves or they shall be fabricated from structural steel conforming to the requirements of ASTM A36 (ASTM A36M) which shall be hot-dip galvanized in accordance with ASTM A123 (ASTM A123M).

Lightweight filler material shall be as recommended by the form's manufacturer.

Subarticle 6.01.03 – 3, Forms:

Add the following:

Stay-in-Place Metal Form System:

Stay-in-place metal forms shall have a minimum depth of form valley equal to two inches (50 millimeters). The forms shall have closed tapered ends. Lightweight filler material shall be used in the form valleys.

The metal forms shall be designed on the basis of dead load of the form, reinforcement and the plastic concrete, including the additional weight of concrete due to the deflection of the metal forms, plus 50 pounds per square foot (2.40 kilopascals) for construction loads. The allowable stress in the corrugated form and the accessories shall not be greater than 0.725 times the yield strength of the furnished material and the allowable stress shall not exceed 36,000 psi (250 megapascal). The span for design and deflection shall be the clear distance between edges of the beams or girders less two inches (50 millimeters) and shall be measured parallel to the form flutes. Maximum deflection of the forms under the weight of the plastic concrete, reinforcement, and forms shall not exceed 1/180 of the form span or 0.5 inches (13 millimeters), whichever is less. The permissible form camber shall be based on the actual dead load condition. Camber shall not be used to compensate for deflection in excess of the foregoing limits.

Form support angles shall be designed as a cantilever. The horizontal leg of the form's support angle shall not be greater than 3 inches (75 millimeters).

Before fabricating any material, the Contractor shall submit working drawings to the Engineer for review in accordance with Article 1.05.02-2, Working Drawings. These drawings shall include the proposed method of form construction, erection plans including weld procedure(s), material lists, material designation, gage of all materials, and the details of corrugation. Also, copies of the form design computations shall be submitted with the working drawings.

Form supports shall be used and no stay-in-place metal forms shall be placed over or be directly supported by the top flanges of beams or girders. The form supports may be supported by or be attached to the top flanges. Stay-in-place metal forms shall not be used in bays where longitudinal slab construction joints are located. Stay-in-place metal forms shall not be used under cantilevered slabs such as the overhang outside of fascia members.

Welding to the top flanges of steel beams and girders is not allowed in the areas where the top flanges are in tension, or as indicated on the plans. Alternate installation procedures shall be submitted addressing this condition.

Drilling of holes in prestressed concrete beams or the use of power-actuated tools on the prestressed concrete beams for fastening of the form supports to the prestressed concrete beams will not be permitted. No welding will be permitted on the reinforcing steel in the prestressed units.

All edges of openings cut for drains, pipes, and similar appurtenances shall be independently supported around the entire periphery of the opening.

All fabricated stay-in-place metal forms shall be unloaded, stored, and handled in such a manner as to preclude damage to the forms. Damaged material shall be replaced at no additional cost. Any exposed form or form support metal where the galvanized coating has been damaged, shall be thoroughly cleaned, wire brushed, then coated with two coats of a zinc dust-zinc oxide primer, FS No. TT-P-641d, Type II, as directed by the Engineer.

All fabricated stay-in-place metal forms shall be stored at the project site at least four inches (100 millimeters) above the ground on platforms, skids or other suitable supports and shall be protected against corrosion and damage.

Forms shall be installed from the topside in accordance with the manufacturer's placing plans, recommended details, and printed instructions. Forms shall be constructed to the lines, grades, shapes, and dimensions shown on the plans, unless otherwise directed by the Engineer. Form supports shall ensure that forms retain their correct dimensions and positions during use at all times. Form supports shall provide vertical adjustment to maintain design slab thickness at the crest of corrugation, to compensate for variations in camber of beams and girders, and to allow for deflections.

Field cutting of form sheet metal shall be made by a steel cutting saw. Supports, closures and cut-outs shall be cut with shears or saw. No flame cutting will be permitted.

All welding shall be accomplished by Connecticut certified welders in accordance with Subarticle 6.03.03 – 6, Welding.

The steel form supports shall be placed in direct contact with the flange of stringer or floor beam flanges and attached by bolts, clips, welding where permitted, or other approved means. Form sheets shall not be permitted to rest directly on the top of the stringer or floor beam flanges. Forms shall be securely fastened to form supports with self-drilling fasteners and shall have a minimum bearing length of one inch (25 millimeters) at each end.

In the areas where the form sheets lap, the form sheets shall be securely fastened to one another by fasteners at a maximum spacing of eighteen inches (450 millimeters). The ends of the form sheets shall be securely attached to the support angles with fasteners at a maximum spacing of eighteen inches (450 millimeters) or two corrugation widths, whichever is less. Welding of forms to supports is not allowed.

The depth of the concrete slab shall be as shown on the plans and the corrugated forms shall be placed so that the top of the corrugation will coincide with the bottom of the deck slab. No part of the forms or their supports shall protrude into the slab. All reinforcement in the bottom reinforcement mat shall have a minimum concrete cover of one inch (25 millimeters) unless noted otherwise on the plans.

The completed stay-in-place metal form system shall be sufficiently tight to prevent leakage of mortar or concrete.

Where forms or their installation are unsatisfactory in the opinion of the Engineer, either before or during placement of the concrete, the Contractor shall correct the defects before proceeding with the construction work. The cost of such corrective work shall be at the sole expense of the Contractor.

There will be no direct payment for the cost of the forms and form supports, or any material, tools, equipment, or labor incidental thereto, but the cost shall be considered included in the contract unit price per cubic yard (cu. m) for “Class ‘F’ Concrete”.

<u>Article 6.01.03-8. Placing Concrete:</u>

Add the following new paragraph after the first paragraph:

“The temperature of the concrete at the time of placement shall not be less than 60˚ F (15.5˚ C) or greater than 90˚ F (32˚ C). For pumped concrete, the temperature shall be determined at the placement end of the pump line. The temperature of the concrete shall be determined in accordance with ASTM C1064.”

Subarticle 6.01.03 – 9, Concrete for Bridge Decks:

Add the following:

Screed and runway supports shall not be located on any stay-in-place metal form sheets, form supports or reinforcing steel.

Concrete shall not be placed on the forms to a depth greater than twelve inches (300 millimeters) above the top of the forms. Concrete shall not be dropped more than three feet (1 meter) above the top of the forms, beams or girders.

CONNECTICUT
SUPPLEMENTAL SPECIFICATION
SECTION 6.03
STRUCTURAL STEEL

Delete the entire section and replace it with the following:

SECTION 6.03
STRUCTURAL STEEL

Description: Work under this item shall consist of furnishing, fabricating, transporting, storing, handling and erecting of structural steel of the type and size designated, as shown on the plans, as directed by the Engineer and in accordance with these specifications.

All work except as stated in the following paragraph shall conform to the requirements of the AASHTO LRFD Bridge Construction Specifications and the ANSI/AASHTO/AWS D1.5 – Bridge Welding Code.

All work subject to railroad loading shall conform to AREMA and the ANSI/AASHTO/AWS D1.5 – Bridge Welding Code.

Materials: The materials for this work shall conform to the requirements of Section M.06.

Materials for this work shall be stored off the ground before, during, and after fabrication. It shall be kept free from dirt, grease and other contaminants and shall be reasonably protected from corrosion. In addition, weathering steel shall be stored as to allow free drainage and promote the development of the oxide coating and a uniform appearance.

Construction Methods:

1. Pre-qualification:

(a) Fabricators producing material for Department projects under this item are required to have as a minimum, an active AISC Certification for Simple Steel Bridges. For fabrication of material for use on bridges other than un-spliced rolled beam bridges, AISC Major Steel Bridge Certification is required. If so noted on the plans, additional AISC endorsement for fabrication of fracture critical members is also required.

(b) Field Welders: Prior to working on material for Department projects under this specification, all field welders, field welding operators, and field tackers must posses a valid welder certification card issued by the Department's Division of Materials Testing. If such person has not been engaged in welding operations on a Department project or

project acceptable to the Department within a period of six months, or if he cannot produce an approved welding certificate dated within the previous twelve months from a welding agency acceptable to the Engineer, he shall be required to re-qualify through examination. The Engineer may require re-qualification of anyone whose quality of work he questions.

2. Submittals:

(a) Shop Drawings: Prior to any fabrication, the Contractor shall submit shop drawings in accordance with Article 1.05.02-3 to the Engineer for review and approval. Shop drawings shall include a cambering procedure and diagram. In the case of trusses, the Contractor is responsible for calculation of the camber (lengthening and shortening) of all truss members.

(b) Shop Schedule: The Contractor shall submit a detailed shop fabrication schedule to the Engineer for review within 30 days of the notice to proceed unless otherwise agreed to by the Engineer. At a minimum the schedule shall include the start date, milestone dates, and completion date. Any significant changes shall be brought to the attention of the Engineer immediately.

(c) Welding Procedures: Prior to start of fabrication, all weld procedures shall be submitted to the Engineer for review and approval.

(d) Working Drawings for Falsework and Erection of Structural Steel: Prior to erecting any steel fabricated under this specification, the Contractor shall submit drawings and supporting calculations, including erection stresses, in accordance with Article1.05.02-2 to the Engineer. The design of temporary supports and falsework shall conform to the *AASHTO Specifications,* the *AASHTO Guide Design Specifications for Bridge Temporary Works* or any other standard acceptable to the Engineer. Falsework shall be of sufficient rigidity and strength to safely support all loads imposed and to produce in the finished structure the lines and grades indicated in the contract documents. The submittal shall include at a minimum:

- Title block with contract number, project identification number (PIN), town, and structure number and name.
- Plan of the work area showing support structures, roads, railroad tracks, Federal and State regulated areas as depicted on the plans, utilities or any other information relative to erection.
- A detailed narrative describing the erection sequence for main members and secondary members (cross frames, diaphragms, lateral bracing, portals, etc.), noting use of holding cranes or temporary supports, falsework, or bents.
- Delivery location of each girder.
- Location of each crane for each pick.
- Capacity chart for each crane and boom length used in the work.
- The capacity of the crane and of all lifting and connecting devices shall be adequate for the total pick load including spreaders and other materials. In the area of railroads and navigable waterways, the capacity shall be as required by Amtrak, Metro North, U.S. Coast Guard or other regulatory authorities. No picks shall be

allowed over vehicular or pedestrian traffic unless otherwise noted on the plans or permitted by the Engineer.

- Pick point location(s) on each member.
- Lifting weight of each member (including clamps, spreader beams, etc.)
- Lift and setting radius for each pick (or maximum lift radius).
- Description of lifting devices or other connecting equipment.
- Girder tie-down details or other method of stabilizing erected girders.
- Bolting requirements, including the minimum number of bolts and erection pins required to stabilize members during the erection sequence.
- Blocking details for stabilizing members supported on expansion bearings and on bearings that do not limit movement in the transverse direction.
- The method and location for temporary supports for field spliced or curved girders, including shoring, false work, holding cranes, guys, etc. The Engineer will review, but not approve details of temporary supports. The design, erection, and stability of these supports shall be the sole responsibility of the Contractor.
- Offsets necessary to adjust expansion bearings during erection to provide for temperature variance and dead load rotation.

The following notes shall be placed on the Erection Drawings:

- Cranes shall be operated in accordance with the Connecticut Department of Public Safety regulations.
- The Contractor shall be responsible for verifying the weight of each lift and for insuring the stability of each member during all phases of erection.
- Members shall be subject to only light drifting to align holes. Any drifting that results in distortion of the member or damage to the holes will be cause for rejection of the member.
- Field reaming of holes shall not be performed unless required by the Contract Drawing or approved by the Engineer.

The Contractor shall submit these documents to the Engineer at least 60 calendar days in advance of their proposed use. If the proposed method of erection requires additional members or modifications to the existing members of the structure, such additions and modifications shall be made by the Contractor at no expense to the State.

3. Shop Fabrication: Unless otherwise shown on the plans or indicated in the Special Provisions, Structural Steel shall be fabricated in accordance with the AASHTO LRFD Bridge Construction Specifications, amended as follows:

(a) Notification: The Contractor shall submit written notification to both the Engineer and the Director of Research and Materials Testing not less than 30 calendar days prior to start of fabrication. No material shall be manufactured or worked in the shop before the Engineer has been so notified. The notification shall include the name and location of the fabrication shop where the work will be done so that arrangements can be made for an audit of the facility and the assignment of a Department Quality Assurance inspector.

(b) Camber: All members shall be cambered prior to heat curving and painting. Rolled beams shall be heat cambered by methods approved by the Engineer. Plate girders shall be cambered by cutting the web to the prescribed shape with allowances for shrinkage due to cutting, welding, and heat curving. The fabricator is responsible to determine what allowances should be made. Rolled, plate-rolled, or fabricated sections shall be cambered to the total amount shown on the plans and within the camber deviation tolerances permitted for welded beams and girders, as indicated in the ANSI/AASHTO/AWS D1.5 Bridge Welding Code. The Contractor must submit to the Engineer for approval, a plan for corrective action if the actual camber is not within tolerance.

(c) Welding: Unless otherwise indicated on the plans or specifications, all work shall be performed in accordance with ANSI/AASHTO/AWS D1.5 – Bridge Welding Code.

(d) Preassembly of Field Connections: Field connections of main members of continuous beams, plate girders, bents, towers, rigid frames, trusses and arches shall be preassembled prior to erection as necessary to verify the geometry of the completed structure or unit and to verify or prepare field splices. The Contractor shall propose an appropriate method of preassembly for review and comment by the Engineer. The method and details of preassembly shall be consistent with the erection procedures shown on the working drawings and camber diagrams. As a minimum, the preassembly procedure shall consist of assembling three contiguous panels accurately adjusted for line and camber. Successive assemblies shall consist of at least one section or panel of the previous assembly plus two or more sections or panels added at the advancing end. In the case of structures longer than 150 feet (45 meters), each assembly shall not be less than 150 feet (45 meters) long regardless of the length of individual continuous panels or section. All falsework, tools, machinery and appliances, including drift pins and bolts necessary for the expeditious handling of the work shall be provided by the Contractor at no cost to the State.

(e) Inspection: The Contractor shall furnish facilities for the inspection of material and workmanship in the shop by the Engineer. The Engineer and his representative shall be allowed free access to the necessary parts of the premises.

The Engineer will provide Quality Assurance (QA) inspection at the fabrication shop to assure that all applicable Quality Control plans and inspections are adequately adhered to and maintained by the Contractor during all phases of the fabrication. A thorough inspection of a random selection of elements at the fabrication shop may serve as the basis of this assurance.

Prior to shipment to the project, each individual piece of structural steel shall be stamped or marked in a clear and permanent fashion by a representative of the fabricators' Quality Control (QC) Department to indicate complete final inspection by the fabricator and conformance to the project specifications for that piece. The stamp or mark must be dated. A Materials Certificate in accordance with Article 1.06.07 may be used in lieu of individual stamps or markings, for all material in a single shipment. The Materials Certificate must list each piece within the shipment and accompany the shipment to the project site.

Following the final inspection by the fabricator's QC personnel, the Engineer may select pieces of structural steel for re-inspection by the Department's QA inspector. Should non-conforming pieces be identified, all similar pieces must be re-inspected by the fabricator and repair procedure(s) submitted to the Engineer for approval. Repairs will be made at the Contractor's expense.

The pieces selected for re-inspection and found to be in conformance, or adequately repaired pieces, may be stamped or marked by the QA inspector. Such markings indicate the Engineer takes no exception to the pieces being sent to the project site. Such marking does not indicate acceptance or approval of the material by the Engineer.

Following delivery to the project site, the Engineer will perform a visual inspection of all material to verify shipping documents, fabricator markings, and that there was no damage to the material or coatings during transportation and handling.

The Engineer is not responsible for approving or accepting any fabricated materials prior to final erection and assembly at the project site.

(f) Nondestructive Testing: All nondestructive testing of structural steel and welding shall be performed as designated on the plans and in the project specifications. Such testing shall be performed by personnel approved by the Engineer.

Personnel performing Radiographic, Ultrasonic or Magnetic Particle testing shall be certified as a NDT Level II technician in accordance with the American Society for Non Destructive Testing (ASNT), Recommended Practice SNT-TC-1A.

Nondestructive testing shall be performed in accordance with the procedures and standards set forth in the AASHTO/AWS D1.5, Bridge Welding Code. The Department reserves the right to perform additional testing as determined by the Engineer.

All nondestructive testing shall be witnessed by an authorized representative of the Department. Certified reports of all tests shall be submitted to the Materials Testing Division for examination. Each certified report shall identify the structure, member, and location of weld or welds tested. Each report shall also list the length and location of any defective welds and include information on the corrective action taken and results of all retests of repaired welds.

Should the Engineer require nondestructive testing on welds not designated in the contract, the cost of such inspection shall be borne by the Contractor if the testing indicates that any weld is defective. If the testing indicates the weld to be satisfactory, the actual cost of such inspection will be paid by the Department.

(g) Marking: Each member shall be identified with an erection mark corresponding with the member identification mark on the approved shop drawings. Identification marks shall be impressed into the member with a low stress stamp in a location in accordance with standard industry practice.

(h) Shipping, Handling, Storage and Receiving: The Contractor shall make all arrangements necessary to properly load, transport, unload, handle and store all material. The Contractor shall furnish to the Engineer copies of all shipping statements. The weight (mass) of the individual members shall be shown on the statements. Members having a weight (mass) of more than 3 tons (2700 kilograms) shall have the weight (mass) marked thereon. All material shall be unloaded promptly upon delivery. The Contractor shall be responsible for any demurrage charges. Damage to any material during transportation, improper storage, faulty erection, or undocumented fabrication errors may be cause for rejection of said material at the project site. Top lateral bracing should be installed in tub girders prior to shipping and erection of the field pieces. All costs associated with any corrective action will be borne by the Contractor.

4. Field Erection: A meeting shall be held on site prior to any erection of structural steel. The Contractor shall name the person responsible for the steel erection work and provide copies of all crane operator licenses. Proposed equipment, rigging, timetable and methods shall be proposed at this meeting.

(a) Falsework: Any temporary work shall be constructed in conformance with the working drawings. The Contractor shall verify that the quality of materials and work employed are consistent with their design.

All girders shall be stabilized with falsework, temporary braces, or holding cranes until a sufficient number of adjacent girders are erected with all diaphragms and cross frames connected to provide necessary lateral support as shown in the erecting diagrams.

Adjustment shall be provided in the falsework and other temporary supports so that the temporary elevation of the structural steel provided by the falsework is consistent with the deflections that will occur as the structure is completed. The elevation of falsework shall be such as to support the girders at the cambered no-load elevation. Unloading of temporary supports should be performed such that all temporary supports at each cross section are unloaded uniformly. Unless specifically permitted by the Engineer, welding of falsework support brackets to structural steel is not allowed.

Unless erected by the cantilever method, truss spans shall be erected on blocking. The blocking shall be left in place until the tension chord splices are fully bolted and all other truss connections pinned and bolted and the proper geometric shape is achieved.

(b) Anchorages: Anchor bolts and similar materials which are to be placed during the erection of the structural steel shall be carefully and accurately set to the requirements of Article 6.01.03.

(c) Bearings: Bearing plates shall have a full and uniform bearing upon the substructure masonry. Bearing plates shall be placed upon bearing areas which are finished according to the requirements of Article 6.01.03.

Prefabricated pads conforming to the requirements of Article M-12.01 shall be installed unless specifically noted otherwise on the contract plans.

Each piece shall be the same size as the bearing plate it is to support and the holes to accommodate the anchor bolts shall be clearly and accurately punched before setting the pad in place.

In placing expansion bearings, due consideration shall be given to the temperature at the time of erection and stage construction requirements. The nuts of anchor bolts at expansion bearings shall be adjusted to permit the free movement of the span.

(d) Field Assembly: Members and components shall be accurately assembled as shown on the plans and any match marks shall be followed. The material shall be carefully handled so that no components will be bent, broken or otherwise damaged.

Hammering which will injure or distort the members is not permitted. Bearing surfaces and surfaces to be in permanent contact shall be cleaned before the members are assembled.

Cylindrical erection pins shall be 1/32 inch (0.8 mm) larger than the nominal diameter of the holes.

Splices and field connections of main stress carrying members shall be made with a minimum of 50% of the holes filled and tightened with high strength bolts before the lifting system is released. The bolts shall be installed uniformly throughout the connection. Lateral stability must be maintained until the deck is placed.

The Contractor shall ensure that girders are stable throughout the erection process. The stage of completeness of the bolted connections shall be considered when evaluating the strength and stability of the steel during erection. For Closed Box and Tub Girders the Contractor shall ensure that the cross- section shape of each box is maintained during erection. Top lateral bracing should be installed in tub girders prior to shipping and erection of the field pieces.

(e) Welded Connections:

Unless otherwise shown on the plans or indicated by the special provisions, welding of structural steel shall be done in accordance with “ANSI/AASHTO/AWS D1.5 Bridge Welding Code.”

The Contractor’s welding and inspection procedures for each type of field weld and field tacking must be submitted to the Engineer on the form designated by the Department. All procedures must be approved by the Materials Testing Division prior to any work and must be adhered to at all times.

Quality control is the responsibility of the Contractor. The Contractor must provide an AWS Certified Welding Inspector (CWI) in accordance with AWS D1.5. The CWI must be qualified and certified in accordance with the provisions of AWS QC1, *Standard for Qualification and Certification of Welding Inspectors.*

The CWI shall make visual inspection of all welds. The Contractor will perform magnetic particle inspection, ultrasonic testing inspection, or radiographic testing inspection of field welds when required on the plans or special provisions. Each test may be witnessed by an authorized representative of the Engineer.

Welds or sections of welds containing imperfections determined to be unacceptable by either the CWI or the Engineer shall be removed and re-welded by the Contractor at their expense. Welds so removed and replaced shall be re-inspected by the CWI. All costs for re-inspection or testing of such welds shall be borne by the Contractor.

(f) High Strength Bolted Connections:

The assembly of structural connections using ASTM A 325/ A 325M or ASTM A 490/A 490M high-strength bolts shall be installed so as to develop the minimum required bolt tension specified in Table A. The Manufacturer's certified test report; including the rotational capacity test results **must** accompany the fastener assemblies. Fastener Assemblies delivered without the certified reports will be rejected.

Bolts, nuts and washers from each rotational-capacity lot shall be shipped in the same container. If there is only one production lot number for each size of nut and washer, the nuts and washers may be shipped in separate containers. Each container shall be permanently marked with the rotational-capacity lot number such that identification will be possible at any stage prior to installation. Assemblies of bolts, nuts and washers shall be installed from the same rotational-capacity lot. Pins, small parts and packages of bolts, washers, and nuts shall be shipped in boxes, crates, kegs, or barrels. A list and description of the contained materials shall be plainly marked on the outside of each shipping container.

Bolted Parts: All material within the grip of the bolt shall be steel; there shall be no compressible material, such as gaskets or insulation, within the grip. Bolted steel shall fit solidly together after the bolts are tensioned. The length of the bolts shall be such that the end of the bolt will be flush with or outside of the face of the nut when properly installed.

Surface Conditions: At the time of assembly, all connection surfaces, including surfaces adjacent to the bolt head and nut, shall be free of scale, except tight mill scale, and shall be free of dirt or other foreign material. Burrs that would prevent solid seating of the connected parts in the snug tight condition shall be removed.

Paint is permitted on the faying surface, including slip critical connections, only when shown on the plans. The faying surfaces of slip-critical connections shall meet the requirements of the following paragraphs, as applicable:

- Connections specified to have un-coated faying surfaces: any paint, including any inadvertent over spray, shall be excluded from areas closer than one bolt diameter, but not less than 1.0 in. (25 mm), from the edge of any hole and all areas within the bolt pattern.

- Connections specified to have painted faying surfaces: shall be blast cleaned and coated in accordance with Section 6.04, and shall not be assembled until the coating system has been properly cured.

- Connections specified to have galvanized faying surfaces: shall be hot-dip galvanized in accordance with ASTM A 123/A 123M, and shall subsequently be roughened by means of hand wire brushing. Power wire brushing is not permitted.

Installation: At the pre-erection meeting, the Contractor shall inform the Engineer of their planned method of tensioning high strength bolts. Acceptable methods are: Turn-of-Nut, Calibrated Wrench or Direct Tension Indicator.

Fastener Assemblies:

A "fastener assembly" is defined as a bolt, a nut, and a washer. Only complete fastener assemblies of appropriately assigned lot numbers shall be installed.

Fastener assemblies shall be stored in an area protected from dirt and moisture. Only as many fastener assemblies as are anticipated to be installed and tensioned during a work shift shall be taken from protected storage. Fastener assemblies not used shall be returned to protected storage at the end of the shift. Prior to installation, fastener assemblies shall not be cleaned of lubricant. Fastener assemblies which accumulate rust or dirt resulting from site conditions shall be cleaned, relubricated and tested for rotational-capacity prior to installation. All galvanized nuts shall be lubricated with a lubricant containing a visible dye. Plain bolts must be oily to the touch when delivered and installed. Lubricant shall be removed prior to painting.

All bolts shall have a hardened washer under the turned element (nut or bolt head). All hardened washers shall conform to the requirements of ASTM F 436/F 436M.

Where necessary, washers may be clipped on one side to a point not closer than 7/8 of the bolt diameter from the center of the washer. Circular and beveled washers, when used adjacent to direct tension indicator washers shall not be clipped. Direct tension indicator washers shall not be clipped.

Bolt Tension Measuring Device: The Contractor shall provide a calibrated bolt tension measuring device (a Skidmore-Wilhelm calibrator (Skidmore) or other acceptable bolt tension indicating device) at all times when, and at all locations where high-strength fasteners are being installed and tensioned. The tension measuring device (Skidmore) shall be calibrated by an approved testing agency at least annually. The Skidmore shall be used to perform the rotational-capacity test of the fastener assemblies. The Skidmore will also be used to substantiate (1) the suitability of the fastener assembly to satisfy the requirements of Table A, including lubrication as required, (2) calibration of the installation wrenches, if applicable, and (3) the understanding and proper use by the contractor of the selected method of tensioning to be used.

Complete fastener assemblies shall be installed in properly aligned holes and then tensioned by the Turn-of-Nut, Calibrated Wrench or Direct Tension Indicator method to the minimum tension specified in Table A. Tensioning may be done by turning the bolt while the nut is prevented from rotating when it is impractical to turn the nut. Impact wrenches, if

used, shall be of adequate capacity and sufficiently supplied with air to perform the required tensioning of each bolt in approximately 10 seconds.

Bolts shall be installed in all holes of the connection and the connection brought to a snug condition. Snug is defined as having all the plies of the connection in firm contact. Snugging shall progress systematically from the most rigid part of the connection to the free edges. The bolts of the connection shall then be tightened in a similar manner as necessary until the connection is properly tensioned.

Nuts shall be located, whenever practical, on the side of the connection which will not be visible from the traveled way.

Unless otherwise approved by the Engineer fastener assemblies shall be brought to full tension immediately following snugging.

Fully tensioned fastener assemblies shall not be reused. Retightening previously tensioned bolts which may have been loosened by the tensioning of adjacent bolts shall not be considered as reuse.

Rotational-Capacity Tests: In addition to the certified test reports, on site Rotational-capacity tests may be required by the Engineer. This test shall be performed by the Contractor at the location where the fasteners are installed and tensioned. When performed in the field, the procedure shall conform to the requirements of ASTM A 325/ A 325M Appendix A-1.

Turn-of-Nut Installation Method:

At the start of the work, the Contractor shall demonstrate that the procedure used by the bolting crew to develop a snug condition and to control the turns from a snug condition develops the tension required in Table A. To verify their procedure, the Contractor shall test a representative sample of not less than three complete fastener assemblies of each diameter, length and grade to be used in the work. This shall be performed at the start of work using a Skidmore. Periodic retesting shall be performed when ordered by the Engineer.

After snugging the connection, the applicable amount of rotation specified in Table B shall be achieved. During the tensioning operation there shall be no rotation of the part not turned by the wrench. Tensioning shall progress systematically from the most rigid part of the connection to its free edges.

Calibrated Wrench Installation Method:

Calibrated wrench method may be used only when the installation wrenches are properly calibrated daily, or as determined by the Engineer. Standard torques determined from tables or from formulas which are assumed to relate torque to tension **shall not** be acceptable.

The Contractor shall demonstrate to the Engineer periodically that all equipment and wrenches are providing a torque which has been calibrated to produce the minimum tension specified in Table A. The installation procedures shall be verified periodically, as determined by the Engineer, for each bolt diameter, length and grade using the fastener assemblies that are being installed in the work. This verification testing shall be accomplished in a Skidmore by tensioning three complete fastener assemblies of each diameter, length and grade from those being installed with a hardened washer under the element turned.

When significant difference is noted in the surface condition of the bolts, threads, nuts or washers, as determined by the Engineer, wrenches shall be recalibrated. The Contractor shall verify during the installation of the assembled steel work that the wrench adjustment selected by the calibration does not produce a nut or bolt head rotation from snug greater than that permitted in Table B. If manual torque wrenches are used, nuts shall be turned in the tensioning direction when torque is measured.

When calibrated wrenches are used to install and tension bolts in a connection, bolts shall be installed with hardened washers under the element turned to tension the bolts. Once the connection has been snugged, the bolts shall be tensioned using the calibrated wrench. Tensioning shall progress systematically from the most rigid part of the connection to its free edges. A calibrated torque wrench shall be used to "touch up" previously tensioned bolts which may have been relaxed as a result of the subsequent tensioning of adjacent bolts until all bolts are tensioned to the prescribed amount.

Direct Tension Indicator Installation Method:

When Direct Tension Indicators (DTIs) meeting the requirements of Section M.06 are used with high-strength bolts to indicate bolt tension, they shall be subjected to the verification testing described below and installed in accordance with the method specified below. Unless otherwise approved by the Engineer, the DTIs shall be installed under the head of the bolt and the nut turned to tension the bolt. The Manufacturer’s recommendations shall be followed for the proper orientation of the DTI and additional washers, if any, required for the correct use of the DTI. Installation of a DTI under the turned element may be permitted if a washer is used to separate the turned element from the DTI.

Verification: Verification testing shall be performed in a Skidmore. A special flat insert shall be used in place of the normal bolt head holding insert. Three verification tests shall be required for each combination of fastener assembly rotational-capacity lot, DTI lot, and DTI position relative to the turned element (bolt head or nut) to be used on the project. The fastener assembly shall be installed in the tension-measuring device with the DTI located in the same position as in the work. The element intended to be stationary (bolt or nut) shall be restrained from rotation.

The verification tests shall be conducted in two stages. The bolt nut and DTI assembly shall be installed in a manner so that at least three and preferably not more than five threads are located between the bearing face of the nut and the bolt head. The bolt shall be tensioned first to the load equal to that listed in Table C

under Verification Tension for the grade and diameter of the bolt. If an impact wrench is used, the tension developed using the impact wrench shall be no more than two-thirds of the required tension. Subsequently, a manual wrench shall be used to attain the required tension. The number of refusals of the 0.005-in. (0.125-mm) tapered feeler gage in the spaces between the protrusions shall be recorded. The number of refusals for uncoated DTIs under the stationary or turned element, or coated DTIs under the stationary element, shall not exceed the number listed under Maximum Verification Refusals in Table C for the grade and diameter of bolt used. The maximum number of verification refusals for coated DTIs (galvanized, painted, or epoxy-coated), when used under the turned element, shall be no more than the number of spaces on the DTI less one. The DTI lot shall be rejected if the number of refusals exceeds the values in the table or, for coated DTIs if the gage is refused in all spaces.

After the number of refusals is recorded at the verification load, the bolt shall be further tensioned until the 0.005-in (0.125-mm) feeler gage is refused at all the spaces and a visible gap exists in at least one space. The load at this condition shall be recorded and the bolt removed from the tension-measuring device. The nut shall be able to be run down by hand for the complete thread length of the bolt excluding thread run-out. If the nut cannot be run down for this thread length, the DTI lot shall be rejected unless the load recorded is less than 95 percent of the average load measured in the rotational capacity test of the fastener lot as specified previously in "Rotational-Capacity Tests."

If the bolt is too short to be tested in the calibration device, the DTI lot shall be verified on a long bolt in a calibrator to determine the number of refusals at the verification tension listed in Table C. The number of refusals shall not exceed the values listed under maximum verification refusals in Table C. Another DTI from the same lot shall then be verified with the short bolt in a convenient hole in the work. The bolt shall be tensioned until the 0.005-in. (0.125-mm) feeler gage is refused in all spaces and a visible gap exists in at least one space. The bolt shall then be removed from the tension-measuring device and the nut shall be able to be run down by hand for the complete thread length of the bolt excluding thread run-out. The DTI lot shall be rejected if the nut cannot be run down this thread length.

Installation: Installation of fastener assemblies using DTIs shall be performed in two stages. The stationary element shall be held against rotation during each stage of the installation. The connection shall be first snugged with bolts installed in all holes of the connection and tensioned sufficiently to bring all the plies of the connection into firm contact. The number of spaces in which a 0.005-in. (0.125-mm) feeler gage is refused in the DTI after snugging shall not exceed those listed under maximum verification refusals in Table C. If the number exceeds the values in the table, the fastener assembly shall be removed and another DTI installed and snugged.

For uncoated DTIs used under a stationary or turned element and for coated DTIs used under a stationary element, the bolts shall be further tensioned until the number of refusals of the 0.005-in. (0.125-mm) feeler gage shall be equal or greater than the number listed under Minimum Installation Refusals in Table C. If the bolt is

tensioned so that no visible gap in any space remains, the bolt and DTI shall be removed and replaced by a new properly tensioned bolt and DTI.

When coated DTIs (galvanized, painted or epoxy coated) are used under a turned element, the 0.005-in (0.125-mm) feeler gage shall be refused in all spaces.

Inspection:

The Contractor shall provide all the material, equipment, tools and labor necessary for the inspection of the bolted connections. Access to the bolted parts and fastener assemblies, both before and after the fasteners are installed and tensioned, shall be provided.

The Contractor is responsible for Quality Control (QC). The Contractor shall review this specification with its project personnel prior to performing the work. The Contractor shall verify the proper markings, surface conditions and storage of fastener assemblies. The Contractor shall inspect the faying surfaces of connections for compliance with the plans and specifications. The Contractor shall provide to the Engineer a copy of their written QC report for each shift of the calibration or verification testing specified. This report shall confirm that the selected procedure is properly used and that the fastener assemblies installed meet the tensions specified in Table A. The Contractor shall monitor the installation of fasteners in the work to assure that the selected procedure, as demonstrated in the initial testing to provide the specified tension, is routinely and properly applied.

The Contractor, in the presence of the Engineer, shall inspect the tensioned bolts using an inspection torque wrench, as defined below. If direct tension indicator devices are used, the appropriate feeler gauge will be used. Inspection tests shall be performed within 24 hours of bolt tensioning to prevent possible loss of lubrication or corrosion influence on tensioning torque.

The inspection torque wrench shall be calibrated as follows. Three bolts of the same grade, size, and condition as those under inspection shall be placed individually in a device calibrated to measure bolt tension. This calibration operation shall be done at least once each inspection day. There shall be a washer under the part turned in torquing each bolt. In the calibrated device, each bolt shall be tightened by any convenient means to the specified tension. The inspection wrench shall then be applied to the tensioned bolt to determine the torque required to turn the nut or head five degrees in the tightening direction. The average of the torque required for all three bolts shall be defined as the job-inspection torque.

Twenty-five percent, but a minimum of two, of the tensioned bolts shall be selected by the Engineer for inspection in each connection. (The Engineer may reduce the number of bolts tested at a connection to 10% based on the Contractor's past performance and splice location.) The job-inspection torque shall then be applied to each selected assembly with the inspection torque wrench turned in the tightening direction. If all inspected bolt heads or nuts do not turn, the bolts in the connection shall be considered to be properly tensioned. If the torque turns one or more bolt heads or nuts, the job-inspection torque shall then be applied to **all** bolts in the connection or to the satisfaction of the Engineer. Any bolt whose head or nut turns shall be re-tensioned and re-inspected. The Contractor

may, however, re-tension all the bolts in the connection with the inspection torque wrench and resubmit it for inspection, so long as the bolts are not over-tensioned or damaged by this action.

(g) Field Corrections and Misfits: Reaming of bolt holes during erection shall be permitted only with approval of the Engineer. No excessive forces shall be applied to any member to provide for proper alignment of the bolt holes.

The correction of minor misfits involving minor amounts of reaming, cutting, grinding and chipping shall be considered a legitimate part of the erection. However, any error in the shop fabrication or deformation resulting from handling and transportation may be cause for rejection. The Contractor shall be responsible for all misfits, errors and damage and shall make the necessary corrections and replacements.

TABLE A (Metric)
Minimum Bolt Tension in Kilonewtons*

Bolt Size	ASTM A 325M	ASTM A 490M
M16	91	114
M20	142	179
M22	176	221
M24	205	257
M27	267	334
M30	326	408
M36	475	595

*Equal to 70% of specified minimum tensile strength of bolts (as specified in ASTM Specifications for tests of full-size A 325M and A 490M bolts with metric coarse threads series ANSI B1.13M, loaded in axial tension) rounded to the nearest kilonewton.

Table A (English)
Minimum Bolt Tension in kips*

Bolt Size (Inches)	ASTM A 325	ASTM A 490
5/8	19	24
¾	28	35
7/8	39	49
1	51	64
11/8	56	80
1¼	71	102
13/8	85	121
1½	103	148

*Equal to 70% of specified minimum tensile strength of bolts (as specified in ASTM Specifications for tests of full-size A 325 and A 490 bolts with UNC threads, loaded in axial tension) rounded to the nearest kip.

TABLE B (English and Metric)
Nut Rotation from the Snug Condition
Geometry[a,b,c] of Outer Faces of Bolted Parts

Bolt Length (measured from underside of head to end of bolt)	Both Faces Normal to Bolt Axis	One Face Normal to Bolt Axis and Other Face Sloped Not More Than 1:20, Bevel Washer Not Used	Both Faces Sloped Not More Than 1:20 From Normal to Bolt Axis, Bevel Washer Not Used
Up to and including 4 diameters	1/3 turn	1/2 turn	2/3 turn
Over 4 diameters but not exceeding 8 diameters	1/2 turn	2/3 turn	5/6 turn
Over 8 diameters but not exceeding 12 diameters	2/3 turn	5/6 turn	1 turn

(a) Nut rotation, as used in Table B, shall be taken as relative to the bolt, regardless of the element (nut or bolt) being turned. For bolts installed by 1/2 turn and less, the tolerance should be plus or minus 30 degrees; for bolts installed by 2/3 turn and more, the tolerance should be plus or minus 45 degrees.

To determine the nut rotation for installation and inspection of the fasteners, the nut and the end of the bolt or the head of the bolt and the adjacent steel shall be match marked.

(b) The values, given in Table B, shall be applicable only to connections in which all material within grip of the bolt is steel.

(c) No research work has been performed by the Research Council Riveted and Bolted Structural Joints to establish the turn-of-nut procedure when bolt lengths exceed 12 diameters. For situations in which the bolt length, measured from the underside of the head to the end of the bolt, exceeds 12 diameters, the required rotation shall be determined by actual tests in a suitable tension device simulating the actual conditions.

TABLE C (Metric)

Bolt Dia. (in.)	Verification Tension		Maximum Verification Refusals		DTI Spaces		Minimum Installation Refusals	
	A325	A490	Type 8.8	Type 10.9	Type 8.8	Type 10.9	Type 8.8	Type 10.9
M16	96	120	1	1	4	4	2	2
M20	149	188	2	2	5	6	3	3
M22	185	232	2	2	5	6	3	3
M24	215	270	2	2	5	6	3	3
M27	280	351	2	3	6	7	3	4
M30	342	428	3	3	7	8	4	4
M36	499	625	3	4	8	9	4	5

TABLE C (English)

Bolt Dia. (in.)	Verification Tension		Maximum Verification Refusals		DTI Spaces		Minimum Installation Refusals	
	A325	A490	325	490	325	490	325	490
5/8	20	25	1	2	4	5	2	3
¾	29	37	2	2	5	6	3	3
7/8	41	51	2	2	5	6	3	3
1	54	67	2	3	6	7	3	4
1 1/8	59	84	2	3	6	7	3	4
1¼	75	107	3	3	7	8	4	4
1 3/8	89	127	3	3	7	8	4	4
1½	108	155	3	4	8	9	4	5

Method of Measurement: Payment under this item will be at the contract lump sum price per each complete bridge structure or shall be based on the net weight (mass) of metal in the fabricated structure, whichever method appears on the proposal form.

When payment is based on a lump sum basis, the work, including anchor bolts, steel bearings and plates will not be measured for payment. Bearing plates welded to the girder are included in the price of the structural steel and bearing plates bonded to the bearings are included in the price of the bearing.

When payment is based on the net weight (mass) of metal in the fabricated structure, it shall be computed as described below.

The weight (mass) of the metal works to be paid for under the item of structural steel shall be computed on the basis of the net finished dimensions of the parts as shown on the shop drawings, deducting for copes, cuts, clips and all open holes, except bolt holes, and on the following basis:

1. The weights (masses) of rolled shapes shall be computed on the basis of their nominal weights (masses) per foot (meter), as shown in the shop drawings or listed in handbooks.

The weight (mass) of plates shall be computed on the basis of the nominal weight (mass) for their width and thickness as shown on the shop drawings.

2. The weight (mass) of temporary erection bolts, shop and field paint, galvanization, boxes, crates and other containers used for shipping, and materials used for supporting members during transportation and erection, shall not be included.

3. The weight (mass) of all high strength bolts, nuts, and washers shall be included on the basis of the following weights (masses):

Weight per 100				
Nominal diameter of H.S. bolt (inch)	**Bolthead, nut, 1 washer and stickthrough (lbs)**		**Nominal diameter of H.S. bolt (mm)**	**Bolthead, nut, 1 washer and stickthrough (kg)**
1/2	22		16	17
5/8	33		20	26
3/4	55		22	39
7/8	84		24	50
1	120		27	60
1 1/8	169		30	73
1 1/4	216		36	122

4. The weight (mass) of weld metal shall be computed on the basis of the theoretical volume from plan dimensions of the welds.

Size of fillet in Inches (mm)		**Weight of weld in pounds per foot (kg per meter)**	
3/16	(5)	0.08	(0.119)
¼	(6)	0.14	(0.208)
5/16	(8)	0.22	(0.327)
3/8	(9.5)	0.30	(0.446)
½	(13)	0.55	(0.818)
5/8	(16)	0.80	(1.190)
¾	(19)	1.10	(1.636)
7/8	(22)	1.50	(2.231)
1	(25)	2.00	(2.974)

5. The weight (mass) of steel shims, filler plates and anchor bolts shall be measured for payment.

When the pay item “Materials for Structural Steel (Site No.)” is included in the Contract, payment for furnishing of the raw steel material for the plates and shape material only, excluding any markup, based on the net weight (mass) required, and the payment will be made under the estimated item “Materials for Structural Steel (Site No.)”. The overruns or wastage shall not exceed ten per cent for straight girders and fifteen per cent for curved girders. All other work specified in this section for the bridge will be deemed paid for under the lump sum price. In the absence of the pay item “Materials for Structural Steel (Site No.)”, the cost of the raw material is included in the Lump Sum payment for this item, “Structural Steel (Site No.)”.

Basis of Payment: The structural steel, incorporated in the completed and accepted structure, will be paid for at the contract lump sum price for "Structural Steel (Site No.)," or at the contract unit price per hundred weight (kilogram) for "Structural Steel," whichever is indicated in the contract documents.

Payment for either method shall be for structural steel, complete in place, which price shall include quality control, furnishing, fabricating, transporting, storing, erecting, welding, surface preparation and all materials including fastener assemblies, steel bearing assemblies and anchor bolts, equipment, tools and labor incidental thereto.

When the pay item “Materials for Structural Steel (Site No.)” is included in the Contract, payment for furnishing of the raw steel material for the plates and shape material only,

excluding any markup, based on the net weight (mass) required, and the payment will be made under the estimated item “Materials for Structural Steel (Site No.)”. All remaining work including, but not limited to, preparation of shop drawings, fabricating, transporting, storage and handling, erecting, surface preparation and all materials, equipment, tools and labor incidental thereto, will be paid for under “Structural Steel (Site No.)”.

In the absence of the pay item “Materials for Structural Steel (Site No.)”, the cost of the raw material is included in the Lump Sum payment for this item, “Structural Steel (Site No.)”. All remaining work including, but not limited to, preparation of shop drawings, fabricating, transporting, storage and handling, erecting, surface preparation and all materials, equipment, tools and labor incidental thereto, will be paid for under “Structural Steel (Site No.)”.

No direct payment will be made for setting anchor bolts, preparing bearing areas, furnishing and placing materials under bearings. No direct payment will be made for non destructive testing as shown on the plans.

Pay Item	Pay Unit
Structural Steel (Site No.)	l.s. (l.s.)
Structural Steel	cwt. (kg)

CONNECTICUT
SUPPLEMENTAL SPECIFICATION
SECTION 6.12
CONCRETE CYLINDER CURING BOX

Delete the entire section and replace with it the following:

6.12.01 –Description: This item shall consist of furnishing a box for curing concrete test cylinders. The box shall be commercially available and manufactured specifically for curing concrete test cylinders. The box will remain the property of the Contractor at the conclusion of the project. The box shall be delivered to a location on the project as directed by the Engineer.

6.12.02 – Materials: A catalog cut listing detailed specifications of the box and operating instructions from the manufacturer must be submitted to the Engineer. The box and its components shall be constructed of non-corroding materials and shall be capable of storing a minimum of 18 test cylinders, 6” X 12” (152 mm X 305 mm) stored vertically with the lid closed. The lid must be watertight when closed and hinged in the back with security latches on the front that can be padlocked. The box must be capable of holding water to a maximum level of one inch above test cylinders placed in the box vertically. A drain hole must be provided in a wall of the box to allow manual drainage of the water that exceeds this level. A drain hole must also be provided at the bottom of the box so that it can be manually emptied. The temperature of the water must be controlled by heating and cooling device capable of maintaining the temperature of the water within a range of 60 to 80º F, +/- 2 ºF (15.5 to 26.7 ºC, +/- 1 ºC) within an outside ambient air temperature range of -10 to 120 º F (-23.3 to 49 ºC). The heating and cooling device must be positioned to allow free circulation of air and water around the cylinders and be rated at 120 volts and 15 amps. A rack must be provided within the box to support the cylinders above the pool of temperature controlled water. The device must be thermostatically controlled with a digital readout that is capable of displaying the high/low water temperature within the box since the last reading was taken.

6.12.03 - Construction Methods: The Contractor shall maintain the curing box in working order and shall provide all necessary electrical service and water so that the curing box can be used properly during the entire course of the project. Any curing box that is not operating properly, as determined by the Engineer, shall be replaced within 24 hours by the Contractor at no expense to the State. The Engineer reserves the right to prohibit placement of fresh concrete on the project until a curing box acceptable to the Engineer is operational on the project site.

6.12.04 - Method of Measurement: The furnishing of the concrete test cylinder curing box will be measured for payment by the number of boxes delivered by the Contractor and accepted by the Engineer.

6.12.05 – Basis of Payment: This item will be paid for at the contract unit price each for "Concrete Cylinder Curing Box" ordered and accepted on the project, which price shall include all submittals, material, tools, equipment, and labor incidental thereto. The price shall also include all maintenance and operating costs related to the curing box for the duration of the project.

CONNECTICUT
SUPPLEMENTAL SPECIFICATION
SECTION 6.51
CULVERTS

6.51.02 – Materials:

In the 2nd paragraph replace "Gravel fill" with "Granular fill".

6.51.03 – Construction Methods:

In the 8th paragraph replace "gravel fill" with "granular fill".

Delete the 13th paragraph, "Bituminous fiber and … as the pipe."

6.51.04 – Methods of Measurement:

In the 7th paragraph replace "Gravel Fill" with "Granular Fill".

6.51.05 – Basis of Payment:

In the 8th paragraph replace "Gravel Fill" with "Granular Fill".

CONNECTICUT
SUPPLEMENTAL SPECIFICATION
SECTION 7.02
PILES

Article 7.02.05- Basis of Payment:

In the first sentence of the first paragraph of Section "2. Timber Piles" change "Furnishing Timber Piles Foot (Meter Length) and Furnishing Treated Timber Piles Foot (Meter Length)" to "Furnishing (Type) Timber Piles (Foot (Meter) Length)".

In the first sentence of the last paragraph of Section "2. Timber Piles" change "Driving Timber Piles" and "Driving Treated Timber Piles " to "Driving (Type) Timber Piles".

Under Pay Items:

Delete:

Pay Item	Pay Unit
Furnishing (Type) Piles (Lengths)	lb. (kg)

Add:

Pay Item	Pay Unit
Furnishing (Type) Timber Piles (Length)	ea. (ea)
Furnishing Steel Piles	lb. (kg)
Furnishing (Type) Prestressed Concrete Piles	l.f. (m)
Cast-in-Place Concrete Piles	l.f. (m)

CONNECTICUT
SUPPLEMENTAL SPECIFICATION
SECTION 8.22
TEMPORARY PRECAST CONCRETE BARRIER CURB

Article 8.22.04 – Method of Measurement:

Add the following sentence to the end of the second paragraph:

"Relocation of Temporary Precast Concrete Barrier Curb for access to the work area or for the convenience of the Contractor shall be considered incidental to Maintenance and Protection of Traffic and will not be measured for payment."

CONNECTICUT
SUPPLEMENTAL SPECIFICATION
SECTION 9.10
METAL BEAM RAIL

Article 9.10.04 – Method of Measurement

Subarticle 1 – Metal Beam Rail (Type)

Delete the only sentence and replace with the following:

The length of metal beam rail measured for payment will be the number of linear feet (meters) of accepted rail of the type or designation installed, including radius rail other than Curved Guide Rail Treatment, measured along the top of rail between centers of end posts in each continuous section.

CONNECTICUT
SUPPLEMENTAL SPECIFICATION
SECTION 9.18
THREE CABLE GUIDE RAILING
(I-BEAM POSTS) AND ANCHORAGES

9.18.03 – Construction Methods:

In the 10th paragraph, replace "MIL" with "MILSPEC."

CONNECTICUT
SUPPLEMENTAL SPECIFICATION
SECTION 9.22
BITUMINOUS CONCRETE SIDEWALK
BITUMINOUS CONCRETE DRIVEWAY

9.22.03 – Construction Methods:

Replace the first paragraph with the following:

"**1. Excavation:** Excavation, including saw cutting, removal of any existing sidewalk, or driveway, shall be made to the required depth below the finished grade, as shown on the plans or as directed by the Engineer. All soft and yielding material shall be removed and replaced with suitable material."

9.22.05 – Basis of Payment:

Replace the only paragraph with the following:

"This work will be paid for at the contract unit price per square yard (square meter) for "Bituminous Concrete Sidewalk" or "Bituminous Concrete Driveway," as the case may be, complete in place, which price shall include all saw cutting, excavation as specified above, backfill, disposal of surplus material, gravel or reclaimed miscellaneous aggregate base, and all equipment, tools, labor and materials incidental thereto."

CONNECTICUT
SUPPLEMENTAL SPECIFICATION
SECTION 9.44
TOPSOIL

Add the following paragraph to the beginning of article 9.44.03 – Construction Methods:

"The Contractor shall notify the Engineer of the location of the topsoil at least 15 calendar days prior to delivery. The topsoil and its source shall be inspected and approved by the Engineer before the material is delivered to the project. Any material delivered to the project, which does not meet specifications or which has become mixed with undue amounts of subsoil during any operation at the source or during placing and spreading, will be rejected and shall be replaced by the Contractor with acceptable material."

CONNECTICUT
SUPPLEMENTAL SPECIFICATION
SECTION 9.49
FURNISHING, PLANTING and MULCHING
TREES, SHRUBS, VINES and GROUND COVER PLANTS

9.49.03 – Construction Methods:

Replace subsection 5. Pits with the following:

"5. Pits: The pit diameters shall be twice the diameter of the root-spread or container diameters, and shall be 2- inches (50 millimeters) less than the height of the rootball measured from the bottom of the ball to the root collar. (i. e. A 12-inch (300 millimeters) measurement between the root collar and the bottom of the rootball will require a 10-inch (250 millimeters) deep pit). Any excavation in excess of that required shall be replaced with planting soil and compacted to the satisfaction of the Engineer."

Add the following sentence to subsection 6. Obstructions Below Ground:

"If removal of obstructions results in a deeper hole than needed for planting, backfill material shall be added and compacted to the satisfaction of the Engineer."

Replace subsection 7. Preparation of Backfill with the following:

"**7. Backfill:** Backfill shall conform to M.13.01-1 Planting Soil."

Replace subsection 8. Setting Plants with the following:

"**8. Setting Plants:** All plants shall be plumb and at a level that is 2-inches (50 millimeters) higher than the surrounding ground. Backfill material for all plants shall be thoroughly and properly settled by firming or tamping. Thorough watering shall accompany backfilling. Saucers capable of holding water shall be formed at individual plants (exclusive of plant beds) by placing ridges of planting soil around each, or as directed by the Engineer.

a. Balled and Burlapped plants: Plants shall be handled in such manner so that the soil will not be loosened from the roots inside of the ball. Carefully place the plant into the prepared pits and backfill with planting soil to one - half the depth of the pit, thoroughly tamp to the satisfaction of the Engineer around the ball. Fill the remaining area of the pit with water. Once water has completely drained, loosen the burlap and peel down the top one third. If wire baskets are used, cut and bend down the top third of the basket. Roots that have been wrapped around the ball within the burlap shall be straightened and the remainder of the pit filled with planting soil tamped to ensure that no air pockets remain.

b. Container Grown Plants: Carefully remove the plant from the container over the prepared pits. Gently loosen the soil and straighten all roots as naturally as possible. Place into the bottom of the pit. Backfill with planting soil to one - half the depth of the pit. Thoroughly tamp to the satisfaction of the Engineer. Fill remaining area of the pit with water. Once water has completely drained fill the remainder of the pit with planting soil tamped to ensure that no air pockets remain.

c. Bare-roots Plants: Carefully spread roots as naturally as possible and place into the bottom of the pit. All broken or frayed roots shall be cleanly cut off. Backfill with planting soil to one - half the depth of the pit. Thoroughly tamp to the satisfaction of the Engineer. Fill remaining area of the pit with water. Once water has completely drained fill the remainder of the pit with planting soil tamped to ensure that no air pockets remain."

Replace subsection 10. Watering with the following:

"**10. Watering:** All plants shall be watered upon setting and as many times thereafter as conditions warrant.

The following is a guide for minimum requirements:

Trees:
2 ½" Caliper and less – Fifteen (15) gallons each.
3" to 5" Caliper – Twenty (20) gallon each.
5 ½" Caliper and above – Twenty-five (25) gallon each.
Shrubs:
24" and less – Six (6) gallon each.
More than 24"- Ten (10) gallon each.
Vines, Perennials, and Ornamental Grasses – Three (3) gallons each.
Groundcovers and Bulbs – Two (2) gallons per square foot.

Water shall be applied at a controlled rate and in such a manner to ensure that the water reaches the root zone (saucer) of the plant or plant bed and does not run off to adjacent areas. Watering shall be applied in a manner that does not dislodge plants, erode soil or mulch, or cause damage to saucer.

The Contractor may use slow-release, drip irrigation bags for watering in accordance with manufacturer's instructions. The use of these portable/temporary irrigation bags will require the approval of the Engineer.

Overhead hydro-seeder spray nozzles shall not be used as watering devices."

Replace subsection 17. Establishment Period with the following:

"**17. One-Year Establishment Period:** All plant material shall be subject to a One-Year Establishment Period. During this time, the Contractor shall use currently accepted horticultural practices to keep all plant material installed in a healthy, vigorous growing condition at the date of final acceptance. The date of final

acceptance shall be one full calendar year following the satisfactory completion of the planting activities as confirmed by the Engineer.

An inspection will be held one year from the date of installation with the Contractor, Engineer, and Landscape Designer to determine the acceptability of the plant establishment. An inventory of losses and rejected materials will be made and corrective and necessary clean up measures will be determined at the plant inspection."

CONNECTICUT
SUPPLEMENTAL SPECIFICATION
SECTION 9.75
MOBILIZATION

9.75.04 – Method of Measurement:

Delete the entire section and replace with the following:

This work will be measured for payment in the manner described hereinafter; however, the determination of the total contract price earned shall not include the amount of mobilization earned during the period covered by the current monthly estimate- but shall include amounts previously earned and certified for payment:

1. When the first payment estimate is made, 25 percent of the lump sum bid price for this item or 2.5 percent of the total original contract price, whichever is less, shall be certified for payment.

2. When the Baseline Schedule, as specified under Section 1.05.08, is accepted, 50 percent of the lump sum bid price or 5 percent of the total original contract price, whichever is less, minus any previous payments, will be certified for payment.

3. When 10 percent of the total original contract price is earned and the Baseline Schedule, as specified under Section 1.05.08, is accepted, 75 percent of the lump sum price of this item or 7.5 percent of the total original contract price, whichever is less, minus any previous payments, will be certified for payment.

4. When 30 percent of the total original contract price is earned and the Baseline Schedule, as specified under Section 1.05.08, is accepted, 100 percent of the lump sum price of this item or 10 percent of the total original contract price, whichever is less, minus any previous payments, will be certified for payment.

Upon completion of all work on the project, payment of any amount bid for mobilization in excess of 10 percent of the original contract amount will be paid.

Nothing herein shall be construed to limit or preclude partial payments otherwise provided for by the contract.

CONNECTICUT
SUPPLEMENTAL SPECIFICATION
SECTION 10.01
TRENCHING AND BACKFILLING

Article 10.01.01- Description:

In the only sentence of the first paragraph after "…satisfactory…" *add the following:* "clean-up and".

In the only sentence of the second paragraph after "…reconstruction of…" *add the following:* "bituminous, concrete and granite curbing,".

Article 10.01.05- Basis of Payment:

In the only sentence of the second paragraph after "…mulching…" *add the following:* "clean-up and". *After* "…installing…" *add the word* "curbing,".

At the end of the third paragraph, add the following: "In the absence of a "Rock in Trench Excavation" item, the work will be compensated as extra work."

In the only sentence of the sixth paragraph, after …"…unit price for 'Concrete Sidewalk'…" *add the following:* "or as extra work, if no unit price has been established."

CONNECTICUT
SUPPLEMENTAL SPECIFICATION
SECTION 10.10
CONCRETE HANDHOLE

Article 10.10.05 – Basis of Payment

Remove the words “ground wire”.

At the end of the paragraph add the following sentence:

The ground wire (bonding wire) is included in the Contract unit price under Section 10.08 – Electrical Conduit.

Add the word “Cover” *to the end of the pay item* “Cast Iron Handhole”

CONNECTICUT
SUPPLEMENTAL SPECIFICATION
SECTION 11.13
CONTROL CABLE

11.13.03 – Construction Methods:

In the 1st paragraph of subsection 2 replace "MIL" with "MILSPEC."

CONNECTICUT
SUPPLEMENTAL SPECIFICATION
SECTION 12.10
EPOXY RESIN PAVEMENT MARKINGS, SYMBOLS AND LEGENDS

12.10.03 (2) – Procedures:

Insert the following after the sixth paragraph:

The epoxy shall be uniformly applied to the surface to be marked to ensure a wet film thickness of the applied epoxy, without glass beads, of 20 mils +/- 1 mil (500 um +/- 25 um).

CONNECTICUT
SUPPLEMENTAL SPECIFICATION
SECTION M.06
METALS

Article M.06.01 – Reinforcing Steel:

Subarticle 1. Bar Reinforcement:

Delete the third paragraph and replace it with:

"Epoxy coated bar reinforcement shall conform to the requirements of ASTM A 615/A 615M, Grade 60 (420) and shall be epoxy coated to the requirements of ASTM A 775/A 775M. All field repairs of the epoxy coating shall conform to the requirements of ASTM D 3963/D 3963M."

Article M.06.02—Structural Steel and Other Structural Materials:

Delete the entire article and replace it with the following:

Article M.06.02—Structural Steel: The materials for this work shall conform to the following requirements:

1. **Structural Steel:**
   Structural steel for bridges shall conform to the designation shown on the plans. Unless otherwise indicated in the plans or specifications, structural steel for non-bridge related members or components shall conform to ASTM A709/A709M, Grade 36 (250).

   All surfaces of steel plates and shapes used in the fabrication of bridge girders shall be blast cleaned and visually inspected by the Contractor prior to any fabrication or preparation for fabrication. Blast cleaning shall conform to the requirements of SSPC-SP-6-Commercial Blast.

   All steel plates and shapes used in the fabrication of bridge girders shall be substantially free from pitting and gouges, regardless of the cause. Substantially free is defined as:
   - The measured surface area of all pits and gouges regardless of depth represent less than 1% of the surface area of theplate or shape.
   - No pit or gouge greater than 1/32 (0.08mm) inch deep.
   - No pit or gouge closer than six inches (15.25 cm) from another.

Any repair of plates or shapes will be performed in accordance with ASTM A6/A 6M.

2. **Anchor Bolts:**
Unless otherwise designated on the plans, anchor bolts, including suitable nuts and washers, shall conform to the following requirements:

Anchor bolt assemblies shall conform to the requirements of ASTM F1554, Grade 36 (250). All components of the bolt assembly shall be galvanized in conformance with ASTM A 153/A 153M.

Certified Test Reports and Material Samples: The Contractor shall submit notarized copies of Certified Test Reports in conformance with Article 1.06.07. Prior to incorporation into the work, the Contractor shall submit samples of the anchor bolt assemblies to the Engineer for testing in accordance with the latest edition of the "Schedule of Minimum Requirements for Acceptance Testing". One sample shall be submitted for each diameter, material designation, grade or coating of anchor bolt assembly.

3. **High Strength Bolts:** High strength bolts, including suitable nuts and hardened washers, shall conform to the following requirements:

   a) High strength bolts shall conform to ASTM A325 or ASTM A490 as shown on the plans. High-strength bolts used with coated steel shall be mechanically galvanized, unless otherwise specified. High-strength bolts used with uncoated weathering grades of steel shall be Type 3.

   Nuts for ASTM A325 bolts shall conform to ASTM A563, grades DH, DH3, C, C3 and D. Where galvanized high-strength bolts are used, the nuts shall be galvanized, heat treated grade DH or DH3. Where Type 3 high-strength bolts are used, the nuts shall be grade C3 or DH3.

   Nuts for ASTM A490 bolts shall conform to the requirements of ASTM A563, grades DH and DH3. Where Type 3 high-strength bolts are used, the nuts shall be grade DH3.

   All galvanized nuts shall be lubricated with a lubricant containing a visible dye of any color that contrasts with the color of the galvanizing. Black bolts must be oily to the touch when delivered and installed.

   Circular flat and square or rectangular beveled, hardened steel washers shall conform to ASTM F436. Unless otherwise specified, galvanized washers shall be furnished when galvanized high-strength bolts are specified, and washers with atmospheric corrosion resistance and weathering characteristics shall be furnished when Type 3 high-strength bolts are specified.

   Compressible-washer-type direct tension indicator washers, used in conjunction with high strength bolts, shall conform to ASTM F959. Where galvanized high-strength bolts are used, the washers shall be galvanized in accordance with ASTM B695, Class 50. Where Type 3 high-strength bolts are used, the washers shall be galvanized in accordance with ASTM B695, Class 50 and coated with epoxy.

b) **Identifying Marks:** ASTM A325 for bolts and the specifications referenced therein for nuts require that bolts and nuts manufactured to the specification be identified by specific markings on the top of the bolt head and on one face of the nut. Head markings must identify the grade by the symbol "A325", the manufacturer and the type, if Type 2 or 3. Nut markings must identify the grade, the manufacturer and if Type 3, the type. Markings on direct tension indicators must identify the manufacturer and Type "325". Other washer markings must identify the manufacturer and if Type 3, the type.

   ASTM A490 for bolts and the specifications reference therein for nuts require that bolts and nuts manufactured to the specifications be identified by specific markings on the top of the bolt head and on one face of the nut. Head markings must identify the grade by the symbol "A490", the manufacturer and the type, if Type 2 or 3. Nut markings must identify the grade, the manufacturer and if Type 3, the type. Markings on direct tension indicators must identify the manufacturer and Type "490". Other washer markings must identify the manufacturer and if Type 3, the type.

c) **Dimensions:** Bolt and nuts dimensions shall conform to the requirements for Heavy Hexagon Structural Bolts and for Heavy Semi-Finished Hexagon Nuts given in ANSI Standard B18.2.1 and B18.2.2, respectively.

d) **Galvanized Bolts:** Galvanized bolts shall conform to ASTM A325, Type 1. The bolts shall be hot-dip galvanized in accordance with ASTM A153, Class C or mechanically galvanized in accordance with ASTM B695, Class 50. Bolts, nuts, and washers of any assembly shall be galvanized by the same process. The nuts shall be overtapped to the minimum amount required for the fastener assembly, and shall be lubricated with a lubricant containing a visible dye so a visual check can be made for the lubricant at the time of field installation. Galvanized bolts shall be tension tested after galvanizing. ASTM A 490 bolts shall not be galvanized.

e) **Test Requirements:** The maximum hardness of A325 bolts 1" or less in diameter shall be 33 HRC.

   Plain, ungalvanized nuts shall have a minimum hardness of 89 HRB.

   Proof load tests, in accordance with the requirements of ASTM F606 Method 1, shall be required for the bolts. Wedge tests of full-size bolts are required in accordance with Section 8.3 of ASTM A325. Galvanized bolts shall be wedge tested after galvanizing. Proof load tests of ASTM A563 are required for nuts. Proof load tests for nuts used with galvanized bolts shall be performed after galvanizing, overtapping and lubricating.

Rotational-capacity tests are required and shall be performed on all plain or galvanized (after galvanizing) bolt, nut and washer assemblies by the manufacturer or distributor prior to shipping and by the Contractor at the job site.

The thickness of galvanizing on bolts, nuts and washers shall be measured. On bolts, it shall be measured on the wrench flats or on top of the bolt head, and on nuts it shall be measured on the wrench flats.

f) Certified Test Reports and Materials Certificates: The Contractor shall submit notarized copies of Certified Test Reports and Materials Certificates in conformance with Article 1.06.07 for fastener assemblies. In addition the Certified Test Reports and Materials Certificates shall include the following:

a. Mill test reports shall indicate the place where the material was melted and manufactured.

b. Test reports for proof load tests, wedge tests, and rotational-capacity tests shall indicate where the tests were performed, date of tests, location of where the components were manufactured and lot numbers.

c. The test report for galvanized components shall indicate the thickness of the galvanizing.

g) Material Samples: Prior to incorporation into the work, the Contractor shall submit samples of the bolt assemblies to the Engineer for testing in accordance with the latest edition of the "Schedule of Minimum Requirements for Acceptance Testing". Samples shall be submitted for each diameter, length, material designation, grade, coating and manufacturer of bolt assembly.

4. Welded Stud Shear Connectors:

a) Materials: Stud shear connectors shall conform to the requirements of ASTM A 108, cold-drawn bar, Grades 1015, 1018 or 1020, either semi- or fully-killed. If flux-retaining caps are used, the steel for the caps shall be of a low carbon grade suitable for welding and shall comply with ASTM A 109.

Stud shear connectors shall be of a design suitable for electrically end-welding to steel with automatically timed stud welding equipment. The studs shall be of the sizes and dimensions noted on the plans. Flux for welding shall be furnished with each stud, either attached to the end of the stud or combined with the arc shield for automatic application in the welding operation. Each stud shall be furnished with a disposable ferrule of sufficient strength to remain intact during the welding operation and not crumble or break; it shall not be detrimental to the weld or create excessive slag.

Tensile properties, as determined by tests of bar stock after drawing or of finished studs, shall conform to the following requirements in which the yield strength is as determined by the 0.2% offset method:

Tensile strength (min.)	60,000 psi (415 megapascals)
Yield strength (min.)	50,000 psi (345 megapascals)
Elongation (min.)	20% in 2 inches (50 millimeters)
Reduction of area (min.)	50%

b) Test Methods: Tensile properties shall be determined in accordance with the applicable sections of ASTM A 370. Tensile tests of finished studs shall be made on studs welded to test plates using a test fixture similar to that shown in Figure 7.2 of the current AASHTO/AWS D1.5 – Bridge Welding Code. If fracture occurs outside of the middle half of the gage length, the test shall be repeated.

c) Finish: Finished studs shall be of uniform quality and condition, free from injurious laps, fins, seams, cracks, twists, bends or other injurious defects. Finish shall be as produced by cold-drawing, cold-rolling or machining.

d) Certified Test Reports and Materials Certificates: The Contractor shall submit a certified copy of the in-plant quality control test report in conformance with Article 1.06.07. The Contractor shall submit a Materials Certificate in conformance with Article 1.06.07 for the welded studs.

e) Sample Materials for Testing: Prior to incorporation into the work, the Contractor shall submit samples of the stud shear connectors to the Engineer for testing in accordance with the latest edition of the "Schedule of Minimum Requirements for Acceptance Testing". One sample shall be submitted for each diameter and length of welded stud.

CONNECTICUT
SUPPLEMENTAL SPECIFICATION
SECTION M.13
ROADSIDE DEVELOPMENT

Delete article M.13.01 – Topsoil and replace it with the following:

"**Article M.13.01 – Topsoil:** The term topsoil used herein shall mean a soil meeting the soil textural classes established by the USDA Classification System based upon the proportion of sand, silt, and clay size particles after passing a No. 10 (2 millimeter) sieve and subjected to a particle size analysis. The topsoil shall contain 5% to 20% organic matter as determined by loss on ignition of oven-dried samples dried at 221° F (105° C). The pH range of the topsoil shall be 5.5 to 7.0.

The following textural classes shall be acceptable:

Loamy sand, including coarse, loamy fine, and loamy very fine sand, with not more than 80% sand
Sandy loam, including coarse, fine and very fine sandy loam
Loam
Clay loam, with not more than 30% clay
Silt loam, with not more than 60% silt
Sandy clay loam, with not more than 30% clay
All textural classes of topsoil with greater than 80% sand content will be rejected.

The topsoil furnished by the Contractor shall be a natural, workable soil that is screened and free of subsoil, refuse, stumps, roots, brush, weeds, rocks and stones over 1 1/4 inches (30 millimeters) in diameter, and any other foreign matter that would be detrimental to the proper development of plant growth.

The Contractor shall notify the Engineer of the location of the topsoil at least 15 calendar days prior to delivery. The topsoil and its source shall be inspected and approved by the Engineer before the material is delivered to the project. Any material delivered to the project, which does not meet specifications or which has become mixed with undue amounts of subsoil during any operation at the source or during placing and spreading, will be rejected and shall be replaced by the Contractor with acceptable material.

When topsoil is not furnished by the Contractor, it shall be material that is stripped in accordance with Section 2.02 or is furnished by the State, and will be tested as determined by the Engineer.

1. Planting Soil: Soil Material to be used for plant backfill shall be one of the following textural classes:

Loamy sand, with not more than 80% sand
Sandy loam
Loam
Clay loam, with not more than 30% clay
Silt loam, with not more than 60% silt
Sandy clay loam, with not more than 30% clay

Planting soil shall be premixed, consisting of approximately 50 % topsoil, 25 % compost or peat, and 25% native soil. Planting soil shall be loose, friable, and free from refuse, stumps, roots, brush, weeds, rocks and stones 2 inches (50 millimeters) in diameter. In addition, the material shall be free from any material that will prevent proper development and plant growth.

(a) For ericaceous plants and broad-leaved evergreens requiring an acid soil, planting soil shall have a true pH of 4.5 to 5.5. If it has not, it shall be amended by the Contractor at his own expense to the proper pH range by mixing with sulphur.

(b) Planting soil for general planting of nonacid-loving plants shall have a true pH value of 5.6 to 6.5. If it has not, it shall be amended by the Contractor at his own expense to the proper pH range by mixing with dolomitic limestone.

The amount of either sulphur or limestone required to adjust the planting soil to the proper pH range (above) shall be determined by the Engineer based on agronomic tests. The limestone shall conform to the requirements of Article M.13.02. The sulphur shall be commercial or flour sulphur, unadulterated, and shall be delivered in containers with the name of the manufacturer, material, analysis, and net weight (mass) appearing on each container.

The Engineer reserves the right to draw such samples and to perform such tests as he deems necessary to ensure that these specifications are met.”

CONNECTICUT
SUPPLEMENTAL SPECIFICATION
SECTION M.16
TRAFFIC CONTROL SIGNALS

Article M.16.04 – Poles:

Subarticle 1. Steel Poles:

(i) Wire Entrance Fitting:

In the second sentence, delete "required to accept the cables".

Article M.16.06 – Traffic Signals:

In the 1st paragraph of subsection 9 replace "MIL" with "MILSPEC".

Under the paragraph entitled Third Coat, replace the first two sentence with the following:

" Dark Green Enamel: Shall be Dark Green exterior baked enamel and shall comply with FS A-A 2962. The color shall be No. 14056, FS No. 595."

and in the third sentence replace "MIL" with "MILSPEC."

Article M.16.08 – Pedestrian Push Button

Subarticle – Painting

Delete the entire "Third Coat" paragraph and replace with the following:

Third Coat: Dark Green Enamel, shall be DARK GREEN exterior-baking enamel and shall comply with Federal Specifications A-A 2962. The color shall be No. 14056, Federal Standard No. 595.

M.16.15 – Messenger and Span Wire:

Delete the entire article and replace with the following:

The materials for this work shall conform to the following requirements:

1. Messenger wire shall be made of double-galvanized 7-strand utilities-grade steel wire cable, not less than 3/16 inch (4.8 millimeters) in diameter, with at least a 2,400-pound (10.7-killinewton) breaking strength.

2. Span wire:

(a) “Span wire” shall be made of double-galvanized 7-strand utilities-grade steel wire cable, not less than 3/8 inch (9.5 millimeters) in diameter, with at least an 11,200-pound (50-kilonewton) breaking strength.

(b) “Span wire (high strength)” shall be made of double-galvanized 7-strand extra-high-strength-grade steel wire cable, not less than 7/16 inch (11.1 millimeters) in diameter, with at least a 20,800-pound (94-kilonewton) breaking strength.

3. All hardware accessories shown on the plans to be used in span wire or messenger mounting shall be made of high-strength, double-galvanized, first-quality materials.

CONNECTICUT
SUPPLEMENTAL SPECIFICATION
SECTION M.17
ELASTOMERIC MATERIALS

M.17.01 – Elastomeric Bearing Pads:

In the 2nd paragraph of subsection 4(b), replace "MS MIL" with "MILSPEC."

CONNECTICUT
SUPPLEMENTAL SPECIFICATION
SECTION M.18
SIGNING

M.18.10 – Demountable Copy:

In the chart under subsection 3H, replace "MS MIL" with "MILSPEC."

Construction Contracts - Required Contract Provisions
(State Funded Only Contracts)

Index

1. Title VI of the Civil Rights Act of 1964 / Nondiscrimination Requirements

2. Contractor Work Force Utilization / Specific Equal Employment Opportunity

3. Contract Wage Rates

4. Americans with Disabilities Act of 1990

5. Connecticut Statutory Labor Requirements

    a. Construction, Alteration or Repair of Public Works Projects; Wage Rates
    b. Debarment List - Limitation on Awarding Contracts
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6. Tax Liability - Contractor's Exempt Purchase Certificate (CERT – 141)

7. Executive Orders (State of CT)

8. Non Discrimination Requirement (pursuant to section 4a-60 and 4a-60a of the Connecticut General Statutes, as revised)

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    a. Disclosure of Records
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Index of Exhibits

EXHIBIT A – Title VI Contractor Assurances (page 13)
EXHIBIT B – Contractor Work Force Utilization / Equal Employment Opportunity (page 14)
EXHIBIT C – Health Insurance Portability and Accountability Act of 1996 (HIPAA) (page 17)
EXHIBIT D - Campaign Contribution Restriction (page 25)
EXHIBIT E - State Wage Rates (Attached at the end)

1. Title VI of the Civil Rights Act of 1964 / Nondiscrimination Requirements

The Contractor shall comply with Title VI of the Civil Rights Act of 1964 as amended (42 U.S.C. 2000 et seq.), all requirements imposed by the regulations of the United States Department of Transportation (49 CFR Part 21) issued in implementation thereof, and the Title VI Contractor Assurances attached hereto at Exhibit A, all of which are hereby made a part of this Contract.

2. Contractor Work Force Utilization / Equal Employment Opportunity

(a) The Contractor shall comply with the Contractor Work Force Utilization / Equal Employment Opportunity requirements attached at Exhibit B and hereby made part of this Contract, whenever a contractor or subcontractor at any tier performs construction work in excess of $10,000. These goals shall be included in each contract and subcontract. Goal achievement is calculated for each trade using the hours worked under each trade.

(b) Companies with contracts, agreements or purchase orders valued at $10,000 or more will develop and implement an Affirmative Action Plan utilizing the ConnDOT Affirmative Action Plan Guideline. This Plan shall be designed to further the provision of equal employment opportunity to all persons without regard to their race, color, religion, sex or national origin, and to promote the full realization of equal employment opportunity through a positive continuation program. Plans shall be updated as required by ConnDOT.

3. Contract Wage Rates

The Contractor shall comply with:

The State wage rate requirements indicated in Exhibit E hereof are hereby made part of this Contract.

Prevailing Wages for Work on State Highways; Annual Adjustments. With respect to contracts for work on state highways and bridges on state highways, the Contractor shall comply with the provisions of Section 31-54 and 31-55a of the Connecticut General Statutes, as revised.

As required by section 1.05.12 (Payrolls) of the State of Connecticut, Department of Transportation's Standard Specification for Roads, Bridges and Incidental Construction (FORM 816), as may be revised, every Contractor or subcontractor performing project work on a federal aid project is required to post the relevant prevailing wage rates as determined by the United States Secretary of Labor. The wage rate determinations shall be posted in prominent and easily accessible places at the work site.

4. Americans with Disabilities Act of 1990

This provision applies to those Contractors who are or will be responsible for compliance with the terms of the Americans with Disabilities Act of 1990, (42 U.S.C. 12101 et seq.), (Act), during the term of the Contract. The Contractor represents that it is familiar with the terms of this Act and that it is in compliance with the Act. Failure of the Contractor to satisfy this standard as the same applies to performance under this Contract, either now or during the term of the Contract as it may be amended, will render the Contract voidable at the option of the State upon notice to the contractor. The Contractor warrants that it will hold the State harmless and indemnify the State from any liability which may be imposed upon the State as a result of any failure of the Contractor to be in compliance with this Act, as the same applies to performance under this Contract.

5. Connecticut Statutory Labor Requirements

(a) Construction, Alteration or Repair of Public Works Projects; Wage Rates. The Contractor shall comply with Section 31-53 of the Connecticut General Statutes, as revised. The wages paid on an hourly basis to any person performing the work of any mechanic, laborer or worker on the work herein contracted to be done and the amount of payment or contribution paid or payable on behalf of each such person to any employee welfare fund, as defined in subsection (i) of section 31-53 of the Connecticut General Statutes, shall be at a rate equal to the rate customary or prevailing for the same work in the same trade or occupation in the town in which such public works project is being constructed. Any contractor who is not obligated by agreement to make payment or contribution on behalf of such persons to any such employee welfare fund shall pay to each mechanic, laborer or worker as part of such person's wages the amount of payment or contribution for such person's classification on each pay day.

(b) Debarment List. Limitation on Awarding Contracts. The Contractor shall comply with Section 3l-53a of the Connecticut General Statutes, as revised.

(c) Construction Safety and Health Course. The Contractor shall comply with section 31-53b of the Connecticut General Statutes, as revised. The contractor shall furnish proof to the Labor Commissioner with the weekly certified payroll form for the first week each employee begins work on such project that any person performing the work of a mechanic, laborer or worker pursuant to the classifications of labor under section 31-53 of the Connecticut General Statutes, as revised, on such public works project, pursuant to such contract, has completed a course of at least ten hours in duration in construction safety and health approved by the federal Occupational Safety and Health Administration or, has completed a new miner training program approved by the Federal Mine Safety and Health Administration in accordance with 30 CFR 48 or, in the case of telecommunications employees, has completed at least ten hours of training in accordance with 29 CFR 1910.268.

Any employee required to complete a construction safety and health course as required that has not completed the course, shall have a maximum of fourteen (14) days to complete the course. If the employee has not been brought into compliance, they shall be removed from the project until such time as they have completed the required training.

Any costs associated with this notice shall be included in the general cost of the contract. In addition, there shall be no time granted to the contractor for compliance with this notice. The contractor's compliance with this notice and any associated regulations shall not be grounds for claims as outlined in Section 1.11 – "Claims".

(d) Awarding of Contracts to Occupational Safety and Health Law Violators Prohibited. The Contract is subject to Section 31-57b of the Connecticut General Statutes, as revised.

(e) Residents Preference in Work on Other Public Facilities. NOT APPLICABLE TO FEDERAL AID CONTRACTS. Pursuant to Section 31-52a of the Connecticut General Statutes, as revised, in the employment of mechanics, laborers or workmen to perform the work specified herein, preference shall be given to residents of the state who are, and continuously for at least six months prior to the date hereof have been, residents of this state, and if no such person is available, then to residents of other states

6. Tax Liability - Contractor's Exempt Purchase Certificate (CERT – 141)

The Contractor shall comply with Chapter 219 of the Connecticut General Statutes pertaining to tangible personal property or services rendered that is/are subject to sales tax. The Contractor is responsible for determining its tax liability. If the Contractor purchases materials or supplies pursuant to the Connecticut Department of Revenue Services' "Contractor's Exempt Purchase Certificate (CERT-141)," as may be revised, the Contractor acknowledges and agrees that title to such materials and supplies installed or placed in the project will vest in the State simultaneously with passage of title from the retailers or vendors thereof, and the Contractor will have no property rights in the materials and supplies purchased.

Forms and instructions are available anytime by:

Internet: Visit the DRS website at www.ct.gov/DRS to download and print Connecticut tax forms; or Telephone: Call 1-800-382-9463 (Connecticut calls outside the Greater Hartford calling area only) and select Option 2 or call 860-297-4753 (from anywhere).

7. Executive Orders

This Contract is subject to the provisions of Executive Order No. Three of Governor Thomas J. Meskill, promulgated June 16, 1971, concerning labor employment practices, Executive Order No. Seventeen of Governor Thomas J. Meskill, promulgated February 15, 1973, concerning the listing of employment openings and Executive Order No. Sixteen of Governor John G. Rowland promulgated August 4, 1999, concerning violence in the workplace, all of which are incorporated into and are made a part of the Contract as if they had been fully set forth in it. The Contract may also be subject to the applicable parts of Executive Order No. 7C of Governor M. Jodi Rell, promulgated July 13, 2006, concerning contracting reforms and Executive Order No. 14 of Governor M. Jodi Rell, promulgated April 17, 2006, concerning procurement of cleaning products and services, in accordance with their respective terms and conditions. If Executive Orders 7C and 14 are applicable, they are deemed to be incorporated into and are made a part of the Contract as if they had been fully set forth in it. At the Contractor's request, the Department shall provide a copy of these orders to the Contractor.

8. Non Discrimination Requirement (pursuant to section 4a-60 and 4a-60a of the Connecticut General Statutes, as revised): References to "minority business enterprises" in this Section are not applicable to Federal-aid projects/contracts. Federal-aid projects/contracts are instead subject to the Federal Disadvantaged Business Enterprise Program.

(a) For purposes of this Section, the following terms are defined as follows:

i. "Commission" means the Commission on Human Rights and Opportunities;
ii. "Contract" and "contract" include any extension or modification of the Contract or contract;
iii. "Contractor" and "contractor" include any successors or assigns of the Contractor or contractor;
iv. "gender identity or expression" means a person's gender-related identity, appearance or behavior, whether or not that gender-related identity, appearance or behavior is different from that traditionally associated with the person's physiology or assigned sex at birth, which gender-related identity can be shown by providing evidence including, but not limited to, medical history, care or treatment of the gender-related identity, consistent and uniform assertion of the gender-related identity or any other evidence that the gender-related identity is sincerely held, part of a person's core identity or not being asserted for an improper purpose.

v. “good faith" means that degree of diligence which a reasonable person would exercise in the performance of legal duties and obligations;

vi. "good faith efforts" shall include, but not be limited to, those reasonable initial efforts necessary to comply with statutory or regulatory requirements and additional or substituted efforts when it is determined that such initial efforts will not be sufficient to comply with such requirements;

vii. "marital status" means being single, married as recognized by the state of Connecticut, widowed, separated or divorced;

viii. "mental disability" means one or more mental disorders, as defined in the most recent edition of the American Psychiatric Association's "Diagnostic and Statistical Manual of Mental Disorders", or a record of or regarding a person as having one or more such disorders;

ix. "minority business enterprise" means any small contractor or supplier of materials fifty-one percent or more of the capital stock, if any, or assets of which is owned by a person or persons: (1) who are active in the daily affairs of the enterprise, (2) who have the power to direct the management and policies of the enterprise, and (3) who are members of a minority, as such term is defined in subsection (a) of Connecticut General Statutes § 32-9n; and

x. “public works contract" means any agreement between any individual, firm or corporation and the State or any political subdivision of the State other than a municipality for construction, rehabilitation, conversion, extension, demolition or repair of a public building, highway or other changes or improvements in real property, or which is financed in whole or in part by the State, including, but not limited to, matching expenditures, grants, loans, insurance or guarantees.

For purposes of this Section, the terms "Contract" and “contract” do not include a contract where each contractor is (1) a political subdivision of the state, including, but not limited to, a municipality, (2) a quasi-public agency, as defined in Conn. Gen. Stat. Section 1-120, (3) any other state, including but not limited to any federally recognized Indian tribal governments, as defined in Conn. Gen. Stat. Section 1-267, (4) the federal government, (5) a foreign government, or (6) an agency of a subdivision, agency, state or government described in the immediately preceding enumerated items (1), (2), (3), (4) or (5).

(b) (1) The Contractor agrees and warrants that in the performance of the Contract such Contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, mental retardation, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by such Contractor that such disability prevents performance of the work involved, in any manner prohibited by the laws of the United States or of the State of Connecticut; and the Contractor further agrees to take affirmative action to insure that applicants with job-related qualifications are employed and that employees are treated when employed without regard to their race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, mental retardation, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by the Contractor that such disability prevents performance of the work involved; (2) the Contractor agrees, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, to state that it is an "affirmative action-equal opportunity employer" in accordance with regulations adopted by the Commission; (3) the Contractor agrees to provide each labor union or representative of workers with which the Contractor has a collective bargaining Agreement or other contract or understanding and each vendor with which the Contractor has a contract or

understanding, a notice to be provided by the Commission, advising the labor union or workers' representative of the Contractor's commitments under this section and to post copies of the notice in conspicuous places available to employees and applicants for employment; (4) the Contractor agrees to comply with each provision of this Section and Connecticut General Statutes §§ 46a-68e and 46a-68f and with each regulation or relevant order issued by said Commission pursuant to Connecticut General Statutes §§ 46a-56, 46a-68e and 46a-68f; and (5) the Contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the Commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the Contractor as relate to the provisions of this Section and Connecticut General Statutes § 46a-56. If the contract is a public works contract, the Contractor agrees and warrants that he will make good faith efforts to employ minority business enterprises as subcontractors and suppliers of materials on such public works projects.

(c) Determination of the Contractor's good faith efforts shall include, but shall not be limited to, the following factors: The Contractor's employment and subcontracting policies, patterns and practices; affirmative advertising, recruitment and training; technical assistance activities and such other reasonable activities or efforts as the Commission may prescribe that are designed to ensure the participation of minority business enterprises in public works projects.

(d) The Contractor shall develop and maintain adequate documentation, in a manner prescribed by the Commission, of its good faith efforts.

(e) The Contractor shall include the provisions of subsection (b) of this Section in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the State and such provisions shall be binding on a subcontractor, vendor or manufacturer unless exempted by regulations or orders of the Commission. The Contractor shall take such action with respect to any such subcontract or purchase order as the Commission may direct as a means of enforcing such provisions including sanctions for noncompliance in accordance with Connecticut General Statutes §46a-56; provided if such Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the Commission, the Contractor may request the State of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the State and the State may so enter.

(f) The Contractor agrees to comply with the regulations referred to in this Section as they exist on the date of this Contract and as they may be adopted or amended from time to time during the term of this Contract and any amendments thereto.

(g) (1) The Contractor agrees and warrants that in the performance of the Contract such Contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of sexual orientation, in any manner prohibited by the laws of the United States or the State of Connecticut, and that employees are treated when employed without regard to their sexual orientation; (2) the Contractor agrees to provide each labor union or representative of workers with which such Contractor has a collective bargaining Agreement or other contract or understanding and each vendor with which such Contractor has a contract or understanding, a notice to be provided by the Commission on Human Rights and Opportunities advising the labor union or workers' representative of the Contractor's commitments under this section, and to post copies of the notice in conspicuous places available to employees and applicants for employment; (3) the Contractor agrees to comply with each provision of this section and with each regulation or relevant order issued by said Commission pursuant to Connecticut General Statutes § 46a-56;

and (4) the Contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the Commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the Contractor which relate to the provisions of this Section and Connecticut General Statutes § 46a-56.

(h) The Contractor shall include the provisions of the foregoing paragraph in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the State and such provisions shall be binding on a subcontractor, vendor or manufacturer unless exempted by regulations or orders of the Commission. The Contractor shall take such action with respect to any such subcontract or purchase order as the Commission may direct as a means of enforcing such provisions including sanctions for noncompliance in accordance with Connecticut General Statutes § 46a-56; provided, if such Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the Commission, the Contractor may request the State of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the State and the State may so enter."

The Nondiscrimination Certifications can be found at the Office of Policy and Management website.

http://www.ct.gov/opm/cwp/view.asp?a=2982&Q=390928

9. Whistleblower Provision

The following clause is applicable if the Contract has a value of Five Million Dollars ($5,000,000) or more.

Whistleblowing. This Contract may be subject to the provisions of Section 4-61dd of the Connecticut General Statutes. In accordance with this statute, if an officer, employee or appointing authority of the Contractor takes or threatens to take any personnel action against any employee of the Contractor in retaliation for such employee's disclosure of information to any employee of the contracting state or quasi-public agency or the Auditors of Public Accounts or the Attorney General under the provisions of subsection (a) of such statute, the Contractor shall be liable for a civil penalty of not more than five thousand dollars for each offense, up to a maximum of twenty per cent of the value of this Contract. Each violation shall be a separate and distinct offense and in the case of a continuing violation, each calendar day's continuance of the violation shall be deemed to be a separate and distinct offense. The State may request that the Attorney General bring a civil action in the Superior Court for the Judicial District of Hartford to seek imposition and recovery of such civil penalty. In accordance with subsection (f) of such statute, each large state contractor, as defined in the statute, shall post a notice of the provisions of the statute relating to large state contractors in a conspicuous place which is readily available for viewing by the employees of the Contractor.

10. Connecticut Freedom of Information Act

(a) Disclosure of Records. This Contract may be subject to the provisions of section 1-218 of the Connecticut General Statutes. In accordance with this statute, each contract in excess of two million five hundred thousand dollars between a public agency and a person for the performance of a governmental function shall (a) provide that the public agency is entitled to receive a copy of records and files related to the performance of the governmental function, and (b) indicate that such records and files are subject to FOIA and may be disclosed by the public agency pursuant to FOIA. No request to inspect or copy such records or files shall be valid unless the request is made to the public agency in accordance with FOIA. Any complaint by a person who is denied the right to inspect or copy such records or files shall be brought to the Freedom of Information Commission in accordance with the provisions of sections 1-205 and 1-206 of the Connecticut General Statutes.

(b) Confidential Information. The State will afford due regard to the Contractor's request for the protection of proprietary or confidential information which the State receives from the Contractor. However, all materials associated with the Contract are subject to the terms of the FOIA and all corresponding rules, regulations and interpretations. In making such a request, the Contractor may not merely state generally that the materials are proprietary or confidential in nature and not, therefore, subject to release to third parties. Those particular sentences, paragraphs, pages or sections that the Contractor believes are exempt from disclosure under the FOIA must be specifically identified as such. Convincing explanation and rationale sufficient to justify each exemption consistent with the FOIA must accompany the request. The rationale and explanation must be stated in terms of the prospective harm to the competitive position of the Contractor that would result if the identified material were to be released and the reasons why the materials are legally exempt from release pursuant to the FOIA. To the extent that any other provision or part of the Contract conflicts or is in any way inconsistent with this section, this section controls and shall apply and the conflicting provision or part shall not be given effect. If the Contractor indicates that certain documentation is submitted in confidence, by specifically and clearly marking the documentation as "CONFIDENTIAL," DOT will first review the Contractor's claim for consistency with the FOIA (that is, review that the documentation is actually a trade secret or commercial or financial information and not required by statute), and if determined to be consistent, will endeavor to keep such information confidential to the extent permitted by law. See, *e.g.*, Conn. Gen. Stat. §1-210(b)(5)(A-B). The State, however, has no obligation to initiate, prosecute or defend any legal proceeding or to seek a protective order or other similar relief to prevent disclosure of any information that is sought pursuant to a FOIA request. Should the State withhold such documentation from a Freedom of Information requester and a complaint be brought to the Freedom of Information Commission, the Contractor shall have the burden of cooperating with DOT in defense of that action and in terms of establishing the availability of any FOIA exemption in any proceeding where it is an issue. In no event shall the State have any liability for the disclosure of any documents or information in its possession which the State believes are required to be disclosed pursuant to the FOIA or other law.

11. Service of Process

The Contractor, if not a resident of the State of Connecticut, or, in the case of a partnership, the partners, if not residents, hereby appoints the Secretary of State of the State of Connecticut, and his successors in office, as agent for service of process for any action arising out of or as a result of this Contract; such appointment to be in effect throughout the life of this Contract and six (6) years thereafter.

12. Substitution of Securities for Retainages on State Contracts and Subcontracts

This Contract is subject to the provisions of Section 3-ll2a of the General Statutes of the State of Connecticut, as revised.

13. Health Insurance Portability and Accountability Act of 1996 (HIPAA)

The Contractor shall comply, if applicable, with the Health Insurance Portability and Accountability Act of 1996 and, pursuant thereto, the provisions attached at Exhibit C, and hereby made part of this Contract.

14. Forum and Choice of Law

Forum and Choice of Law. The parties deem the Contract to have been made in the City of Hartford, State of Connecticut. Both parties agree that it is fair and reasonable for the validity and construction of the Contract to be, and it shall be, governed by the laws and court decisions of the State of Connecticut, without giving effect to its principles of conflicts of laws. To the extent that any immunities provided by Federal law or the laws of the State of Connecticut do not bar an action against the State, and to the extent that these courts are courts of competent jurisdiction, for the purpose of venue, the complaint shall be made returnable to the Judicial District of Hartford only or shall be brought in the United States District Court for the District of Connecticut only, and shall not be transferred to any other court, provided, however, that nothing here constitutes a waiver or compromise of the sovereign immunity of the State of Connecticut. The Contractor waives any objection which it may now have or will have to the laying of venue of any Claims in any forum and further irrevocably submits to such jurisdiction in any suit, action or proceeding.

15. Summary of State Ethics Laws

Pursuant to the requirements of section 1-101qq of the Connecticut General Statutes, the summary of State ethics laws developed by the State Ethics Commission pursuant to section 1-81b of the Connecticut General Statutes is incorporated by reference into and made a part of the Contract as if the summary had been fully set forth in the Contract.

16. Audit and Inspection of Plants, Places of Business and Records

(a) The State and its agents, including, but not limited to, the Connecticut Auditors of Public Accounts, Attorney General and State's Attorney and their respective agents, may, at reasonable hours, inspect and examine all of the parts of the Contractor's and Contractor Parties' plants and places of business which, in any way, are related to, or involved in, the performance of this Contract. For the purposes of this Section, "Contractor Parties" means the Contractor's members, directors, officers, shareholders, partners, managers, principal officers, representatives, agents, servants, consultants, employees or any one of them or any other person or entity with whom the Contractor is in privity of oral or written contract and the Contractor intends for such other person or entity to Perform under the Contract in any capacity.

(b) The Contractor shall maintain, and shall require each of the Contractor Parties to maintain, accurate and complete Records. The Contractor shall make all of its and the Contractor Parties' Records available at all reasonable hours for audit and inspection by the State and its agents.

(c) The State shall make all requests for any audit or inspection in writing and shall provide the Contractor with at least twenty-four (24) hours' notice prior to the requested audit and inspection date. If the State suspects fraud or other abuse, or in the event of an emergency, the State is not obligated to provide any prior notice.

(d) The Contractor shall keep and preserve or cause to be kept and preserved all of its and Contractor Parties' Records until three (3) years after the latter of (i) final payment under this Agreement, or (ii) the expiration or earlier termination of this Agreement, as the same may be modified for any reason. The State may request an audit or inspection at any time during this period. If any Claim or audit is started before the expiration of this period, the Contractor shall retain or cause to be retained all Records until all Claims or audit findings have been resolved.

(e) The Contractor shall cooperate fully with the State and its agents in connection with an audit or inspection. Following any audit or inspection, the State may conduct and the Contractor shall cooperate with an exit conference.

(f) The Contractor shall incorporate this entire Section verbatim into any contract or other agreement that it enters into with any Contractor Party.

17.Campaign Contribution Restriction

For all State contracts, defined in Conn. Gen. Stat. §9-612(g)(1) as having a value in a calendar year of $50,000 or more, or a combination or series of such agreements or contracts having a value of $100,000 or more, the authorized signatory to this Agreement expressly acknowledges receipt of the State Elections Enforcement Commission's notice advising state contractors of state campaign contribution and solicitation prohibitions, and will inform its principals of the contents of the notice, as set forth in "Notice to Executive Branch State Contractors and Prospective State Contractors of Campaign Contribution and Solicitation Limitations," attached as Exhibit D.

18. Tangible Personal Property

(a) The Contractor on its behalf and on behalf of its Affiliates, as defined below, shall comply with the provisions of Conn. Gen. Stat. §12-411b, as follows:

(1) For the term of the Contract, the Contractor and its Affiliates shall collect and remit to the State of Connecticut, Department of Revenue Services, any Connecticut use tax due under the provisions of Chapter 219 of the Connecticut General Statutes for items of tangible personal property sold by the Contractor or by any of its Affiliates in the same manner as if the Contractor and such Affiliates were engaged in the business of selling tangible personal property for use in Connecticut and had sufficient nexus under the provisions of Chapter 219 to be required to collect Connecticut use tax;
(2) A customer's payment of a use tax to the Contractor or its Affiliates relieves the customer of liability for the use tax;
(3) The Contractor and its Affiliates shall remit all use taxes they collect from customers on or before the due date specified in the Contract, which may not be later than the last day of the month next succeeding the end of a calendar quarter or other tax collection period during which the tax was collected;
(4) The Contractor and its Affiliates are not liable for use tax billed by them but not paid to them by a customer; and
(5) Any Contractor or Affiliate who fails to remit use taxes collected on behalf of its customers by the due date specified in the Contract shall be subject to the interest and penalties provided for persons required to collect sales tax under chapter 219 of the general statutes.

(b) For purposes of this section of the Contract, the word "Affiliate" means any person, as defined in section 12-1 of the general statutes, that controls, is controlled by, or is under common control with another person. A person controls another person if the person owns, directly or indirectly, more than ten per cent of the voting securities of the other person. The word "voting security" means a security that confers upon the holder the right to vote for the election of members of the board of directors or similar governing body of the business, or that is convertible into, or entitles the holder to receive, upon its exercise, a security that confers such a right to vote. "Voting security" includes a general partnership interest.

(c) The Contractor represents and warrants that each of its Affiliates has vested in the Contractor plenary authority to so bind the Affiliates in any agreement with the State of Connecticut. The Contractor on its own behalf and on behalf of its Affiliates shall also provide, no later than 30 days after receiving a request by the State's contracting authority, such information as the State may require to ensure, in the State's sole determination, compliance with the provisions of Chapter 219 of the Connecticut General Statutes, including, but not limited to, §12-411b.

19. Bid Rigging and/or Fraud – Notice to Contractor

The Connecticut Department of Transportation is cooperating with the U.S. Department of Transportation and the Justice Department in their investigation into highway construction contract bid rigging and/or fraud.

A toll-free "HOT LINE" telephone number 800-424-9071 has been established to receive information from contractors, subcontractors, manufacturers, suppliers or anyone with knowledge of bid rigging and/or fraud, either past or current. The "HOT LINE" telephone number will be available during normal working hours (8:00 am – 5:00 pm EST). Information will be treated confidentially and anonymity respected.

20. Consulting Agreement Affidavit

The Contractor shall comply with Connecticut General Statutes Section 4a-81(a) and 4a-81(b), as revised. Pursuant to Public Act 11-229, after the initial submission of the form, if there is a change in the information contained in the form, a contractor shall submit the updated form, as applicable, either (i) not later than thirty (30) days after the effective date of such change or (ii) prior to execution of any new contract, whichever is earlier.

The Affidavit/Form may be submitted in written format or electronic format through the Department of Administrative Services (DAS) website.

EXHIBIT A

TITLE VI CONTRACTOR ASSURANCES

During the performance of this Contract, the contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "Contractor") agrees as follows:

1. **Compliance with Regulations:** The Contractor shall comply with the regulations relative to nondiscrimination in federally assisted programs of the United States Department of Transportation (hereinafter, "USDOT"), Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time (hereinafter referred to as the "Regulations"), which are herein incorporated by reference and made a part of this contract.

2. **Nondiscrimination:** The Contractor, with regard to the work performed by it during the Contract, shall not discriminate on the grounds of race, color, national origin, sex, age, or disability in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The Contractor shall not participate either directly or indirectly in the discrimination prohibited by Subsection 5 of the Regulations, including employment practices when the Contract covers a program set forth in Appendix B of the Regulations.

3. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment:**
In all solicitations either by competitive bidding or negotiation made by the Contractor for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the Contractor of the Contractor's obligations under this contract and the Regulations relative to nondiscrimination on the grounds of race, color, national origin, sex, age, or disability.

4. **Information and Reports:** The Contractor shall provide all information and reports required by the Regulations or directives issued pursuant thereto and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Connecticut Department of Transportation (ConnDOT) or the Funding Agency (FHWA, FTA and FAA) to be pertinent to ascertain compliance with such Regulations, orders, and instructions. Where any information required of a Contractor is in the exclusive possession of another who fails or refuses to furnish this information, the Contractor shall so certify to ConnDOT or the Funding Agency, as appropriate, and shall set forth what efforts it has made to obtain the information.

5. **Sanctions for Noncompliance:** In the event of the Contractor's noncompliance with the nondiscrimination provisions of this Contract, the ConnDOT shall impose such sanctions as it or the Funding Agency may determine to be appropriate, including, but not limited to:

A. Withholding contract payments until the Contractor is in-compliance; and/or
B. Cancellation, termination, or suspension of the Contract, in whole or in part.

6. **Incorporation of Provisions:** The Contractor shall include the provisions of paragraphs 1 through 5 in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations or directives issued pursuant thereto. The Contractor shall take such action with respect to any subcontract or procurement as the ConnDOT or the Funding Agency may -direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, however, that in the event a Contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the Contractor may request the ConnDOT to enter into such litigation to protect the interests of the Funding Agency, and, in addition, the Contractor may request the United States to enter into such litigation to protect the interests of the United States

EXHIBIT B

CONTRACTOR WORKFORCE UTILIZATION / EQUAL EMPLOYMENT OPPORTUNITY

1. **Project Workforce Utilization Goals:**
   These goals are applicable to all the Contractor's construction work (whether or not it is Federal or Federally assisted or funded) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for the geographical area where the work is actually performed.

   Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of $10,000 the provisions of these specifications which contain the applicable goals for minority and female participation.

   The goals for minority and female utilization are expressed in percentage terms for the contractor's aggregate work-force in each trade on all construction work in the covered area, are referenced in the Appendix A below.

STATE FUNDED PROJECTS (only)
APPENDIX A
(Labor Market Goals)

LABOR MARKET AREA GOAL				***Minority*** **Female**
Bridgeport				**14%** **6.9%**
Ansonia	Beacon Falls	Bridgeport	Derby	
Easton	Fairfield	Milford	Monroe	
Oxford	Seymour	Shelton	Stratford	
Trumbull				
Danbury				**4%** **6.9%**
Bethel	Bridgewater	Brookfield	Danbury	
Kent	New Fairfield	New Milford	Newtown	
Redding	Ridgefield	Roxbury	Sherman	
Washington				
Danielson				**2%** **6.9%**
Brooklyn	Eastford	Hampton	Killingly	
Pomfret	Putnam	Scotland	Sterling	
Thompson	Voluntown	Union	Woodstock	
Hartford				**15%** **6.9%**
Andover	Ashford	Avon	Barkhamsted	

Belin	Bloomfield	Bolton	Bristol
Burlington	Canton	Chaplin	Colchester
Columbia	Coventry	Cromwell	Durham
East Granby	East Haddam	East Hampton	East Hartford
East Windsor	Ellington	Enfield	Farmington
Glastonbury	Granby	Haddam	Hartford
Harwinton	Hebron	Lebanon	Manchester
Mansfield	Marlborough	Middlefield	Middletown
Newington	Plainville	Plymouth	Portland
Rocky Hill	Simsbury	Somers	South Windsor
Southington	Stafford	Suffield	Tolland
Vernon	West Hartford	Wethersfield	Willington
Winchester	Windham	Windsor	Windsor Locks

Lower River 6.9%	**2%**

Chester	Deep River	Essex	Old Lyme
Westbrook			

New Haven 6.9%	**14%**

Bethany	Branford	Cheshire	Clinton
East Haven	Guilford	Hamden	Killingworth
Madison	Meriden	New Haven	North Branford
North Haven	Orange	Wallingford	West Haven
Woodbridge			

New London 6.9%	**8%**

Bozrah	Canterbury	East Lyme	Franklin
Griswold	Groton	Ledyard	Lisbon
Montville	New London	North Stonington	Norwich
Old Lyme	Old Saybrook	Plainfield	Preston
Salem	Sprague	Stonington	Waterford
Hopkinton	RI – Westerly Rhode Island		

Stamford 6.9%	**17%**

Darien	Greenwich	New Canaan	Norwalk
Stamford	Weston	Westport	Wilton

Torrington 6.9%	**2%**

Canaan	Colebrook	Cornwall	Goshen
Hartland	Kent	Litchfield	Morris
Norfolk	North Canaan	Salisbury	Sharon
Torrington	Warren		

Waterbury 6.9%			**10%**
Bethlehem	Middlebury	Naugatuck	Prospect
Southbury	Thomaston	Waterbury	Watertown
Wolcott	Woodbury		

EXHIBIT C

Health Insurance Portability and Accountability Act of 1996 ("HIPAA").

(a) If the Contactor is a Business Associate under the requirements of the Health Insurance Portability and Accountability Act of 1996 ("HIPAA"), the Contractor must comply with all terms and conditions of this Section of the Contract. If the Contractor is not a Business Associate under HIPAA, this Section of the Contract does not apply to the Contractor for this Contract.

(b) The Contractor is required to safeguard the use, publication and disclosure of information on all applicants for, and all clients who receive, services under the Contract in accordance with all applicable federal and state law regarding confidentiality, which includes but is not limited to HIPAA, more specifically with the Privacy and Security Rules at 45 C.F.R. Part 160 and Part 164, subparts A, C, and E; and

(c) The State of Connecticut Agency named on page 1 of this Contract (hereinafter the "Department") is a "covered entity" as that term is defined in 45 C.F.R. § 160.103; and

(d) The Contractor, on behalf of the Department, performs functions that involve the use or disclosure of "individually identifiable health information," as that term is defined in 45 C.F.R. § 160.103; and

(e) The Contractor is a "business associate" of the Department, as that term is defined in 45 C.F.R. § 160.103; and

(f) The Contractor and the Department agree to the following in order to secure compliance with the HIPAA, the requirements of Subtitle D of the Health Information Technology for Economic and Clinical Health Act (hereinafter the HITECH Act), (Pub. L. 111-5, sections 13400 to 13423), and more specifically with the Privacy and Security Rules at 45 C.F.R. Part 160 and Part 164, subparts A, C, and E.

(g) Definitions

(1) "Breach shall have the same meaning as the term is defined in section 13400 of the HITECH Act (42 U.S.C. §17921(1))

(2) "Business Associate" shall mean the Contractor.

(3) "Covered Entity" shall mean the Department of the State of Connecticut named on page 1 of this Contract.

(4) "Designated Record Set" shall have the same meaning as the term "designated record set" in 45 C.F.R. § 164.501.

(5) "Electronic Health Record" shall have the same meaning as the term is defined in section 13400 of the HITECH Act (42 U.S.C. §17921(5))

(6) "Individual" shall have the same meaning as the term "individual"' in 45 C.F.R. § 160.103 and shall include a person who qualifies as a personal representative as defined in 45 C.F.R. § 164.502(g).

(7) "Privacy Rule" shall mean the Standards for Privacy of Individually Identifiable Health Information at 45 C.F.R. part 160 and parts 164, subparts A and E.

(8) "Protected Health Information" or "PHI" shall have the same meaning as the term "protected health information" in 45 C.F.R. § 160.103, limited to information created or received by the Business Associate from or on behalf of the Covered Entity.

(9) "Required by Law"' shall have the same meaning as the term "required by law" in 45 C.F.R. § 164.103.

(10) "Secretary" shall mean the Secretary of the Department of Health and Human Services or his designee.

(11) "More stringent" shall have the same meaning as the term "more stringent" in 45 C.F.R. § 160.202.

(12) "This Section of the Contract" refers to the HIPAA Provisions stated herein, in their entirety.

(13) "Security Incident" shall have the same meaning as the term "security incident" in 45 C.F.R.§ 164.304.

(14) "Security Rule" shall mean the Security Standards for the Protection of Electronic Protected Health Information at 45 C.F.R. part 160 and parts 164, subpart A and C.

(15) "Unsecured protected health information" shall have the same meaning as the term as defined in section 13402(h)(1)(A) of HITECH. Act. (42 U.S.C. §17932(h)(1)(A)).

(h) Obligations and Activities of Business Associates.

(1) Business Associate agrees not to use or disclose PHI other than as permitted or required by this Section of the Contract or as Required by Law.

(2) Business Associate agrees to use appropriate safeguards to prevent use or disclosure of PHI other than as provided for in this Section of the Contract.

(3) Business Associate agrees to use administrative, physical and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of electronic protected health information that it creates, receives, maintains, or transmits on behalf of the Covered Entity.

(4) Business Associate agrees to mitigate, to the extent practicable, any harmful effect that is known to the Business Associate of a use or disclosure of PHI by Business Associate in violation of this Section of the Contract.

(5) Business Associate agrees to report to Covered Entity any use or disclosure of PHI not provided for by this Section of the Contract or any security incident of which it becomes aware.

(6) Business Associate agrees to insure that any agent, including a subcontractor, to whom it provides PHI received from, or created or received by Business Associate, on behalf of the Covered Entity, agrees to the same restrictions and conditions that apply through this Section of the Contract to Business Associate with respect to such information.

(7) Business Associate agrees to provide access, at the request of the Covered Entity, and in the time and manner agreed to by the parties, to PHI in a Designated Record Set, to Covered Entity or, as directed by Covered Entity, to an Individual in order to meet the requirements under 45 C.F.R. § 164.524.

(8) Business Associate agrees to make any amendments to PHI in a Designated Record Set that the Covered Entity directs or agrees to pursuant to 45 C.F.R. § 164.526 at the request of the Covered Entity, and in the time and manner agreed to by the parties.

(9) Business Associate agrees to make internal practices, books, and records, including policies and procedures and PHI, relating to the use and disclosure of PHI received from, or created or received by, Business Associate on behalf of Covered Entity, available to Covered Entity or to the Secretary in a time and manner agreed to by the parties or designated by the Secretary, for purposes of the Secretary determining Covered Entity's compliance with the Privacy Rule.

(10) Business Associate agrees to document such disclosures of PHI and information related to such disclosures as would be required for Covered Entity to respond to a request by an Individual for an accounting of disclosures of PHI in accordance with 45 C.F.R. § 164.528 and section 13405 of the HITECH Act (42 U.S.C. § 17935) and any regulations promulgated thereunder.

(11) Business Associate agrees to provide to Covered Entity, in a time and manner agreed to by the parties, information collected in accordance with clause h. (10) of this Section of the Contract, to permit Covered Entity to respond to a request by an Individual for an accounting of disclosures of PHI in accordance with 45 C.F.R. § 164.528 and section 13405 of the HITECH Act (42 U.S.C. § 17935) and any regulations promulgated thereunder. Business Associate agrees at the Covered Entity's direction to provide an accounting of disclosures of PHI directly to an individual in accordance with 45 C.F.R. § 164.528 and section 13405 of the HITECH Act (42 U.S.C. § 17935) and any regulations promulgated thereunder.

(12) Business Associate agrees to comply with any state or federal law that is more stringent than the Privacy Rule.

(13) Business Associate agrees to comply with the requirements of the HITECH Act relating to privacy and security that are applicable to the Covered Entity and with the requirements of 45 C.F.R. sections 164.504(e), 164.308, 164.310, 164.312, and 164.316.

(14) In the event that an individual requests that the Business Associate (a) restrict disclosures of PHI; (b) provide an accounting of disclosures of the individual's PHI; or (c) provide a copy of the individual's PHI in an electronic health record, the Business Associate agrees to notify the covered entity, in writing, within two business days of the request.

(15) Business Associate agrees that it shall not, directly or indirectly, receive any remuneration in exchange for PHI of an individual without (1) the written approval of the covered entity, unless receipt of remuneration in exchange for PHI is expressly authorized by this Contract and (2) the valid authorization of the individual, except for the purposes provided under section 13405(d)(2) of the HITECH Act,(42 U.S.C. § 17935(d)(2)) and in any accompanying regulations

(16) Obligations in the Event of a Breach

A. The Business Associate agrees that, following the discovery of a breach of unsecured protected health information, it shall notify the Covered Entity of such breach in accordance with the requirements of section 13402 of HITECH (42 U.S.C. 17932(b) and the provisions of this Section of the Contract.
B. Such notification shall be provided by the Business Associate to the Covered Entity without unreasonable delay, and in no case later than 30 days after the breach is discovered by the Business Associate, except as otherwise instructed in writing by a law enforcement official pursuant to section 13402 (g) of HITECH (42 U.S.C. 17932(g)) . A breach is considered discovered as of the first day on which it is, or reasonably should have been, known to the Business Associate. The notification shall include the identification and last known address, phone number and email address of each individual (or the next of kin of the individual if the individual is deceased) whose unsecured protected health information has been, or is reasonably believed by the Business Associate to have been, accessed, acquired, or disclosed during such breach.
C. The Business Associate agrees to include in the notification to the Covered Entity at least the following information:
    1. A brief description of what happened, including the date of the breach and the date of the discovery of the breach, if known.

    2. A description of the types of unsecured protected health information that were involved in the breach (such as full name, Social Security number, date of birth, home address, account number, or disability code).

    3. The steps the Business Associate recommends that individuals take to protect themselves from potential harm resulting from the breach.

    4. A detailed description of what the Business Associate is doing to investigate the breach, to mitigate losses, and to protect against any further breaches.

    5. Whether a law enforcement official has advised either verbally or in writing the Business Associate that he or she has determined that notification or notice to

individuals or the posting required under section 13402 of the HITECH Act would impede a criminal investigation or cause damage to national security and; if so, include contact information for said official.

D. Business Associate agrees to provide appropriate staffing and have established procedures to ensure that individuals informed by the Covered Entity of a breach by the Business Associate have the opportunity to ask questions and contact the Business Associate for additional information regarding the breach. Such procedures shall include a toll-free telephone number, an e-mail address, a posting on its Web site and a postal address. Business Associate agrees to include in the notification of a breach by the Business Associate to the Covered Entity, a written description of the procedures that have been established to meet these requirements. Costs of such contact procedures will be borne by the Contractor.

E. Business Associate agrees that, in the event of a breach, it has the burden to demonstrate that it has complied with all notifications requirements set forth above, including evidence demonstrating the necessity of a delay in notification to the Covered Entity.

(i) Permitted Uses and Disclosure by Business Associate.

(1) General Use and Disclosure Provisions Except as otherwise limited in this Section of the Contract, Business Associate may use or disclose PHI to perform functions, activities, or services for, or on behalf of, Covered Entity as specified in this Contract, provided that such use or disclosure would not violate the Privacy Rule if done by Covered Entity or the minimum necessary policies and procedures of the Covered Entity.

(2) Specific Use and Disclosure Provisions

(A) Except as otherwise limited in this Section of the Contract, Business Associate may use PHI for the proper management and administration of Business Associate or to carry out the legal responsibilities of Business Associate.

(B) Except as otherwise limited in this Section of the Contract, Business Associate may disclose PHI for the proper management and administration of Business Associate, provided that disclosures are Required by Law, or Business Associate obtains reasonable assurances from the person to whom the information is disclosed that it will remain confidential and used or further disclosed only as Required by Law or for the purpose for which it was disclosed to the person, and the person notifies Business Associate of any instances of which it is aware in which the confidentiality of the information has been breached.

(C) Except as otherwise limited in this Section of the Contract, Business Associate may use PHI to provide Data Aggregation services to Covered Entity as permitted by 45 C.F.R. § 164.504(e)(2)(i)(B).

(j) Obligations of Covered Entity.

(1) Covered Entity shall notify Business Associate of any limitations in its notice of privacy practices of Covered Entity, in accordance with 45 C.F.R. § 164.520, or to the extent that such limitation may affect Business Associate's use or disclosure of PHI.

(2) Covered Entity shall notify Business Associate of any changes in, or revocation of, permission by Individual to use or disclose PHI, to the extent that such changes may affect Business Associate's use or disclosure of PHI.

(3) Covered Entity shall notify Business Associate of any restriction to the use or disclosure of PHI that Covered Entity has agreed to in accordance with 45 C.F.R. § 164.522, to the extent that such restriction may affect Business Associate's use or disclosure of PHI.

(k) Permissible Requests by Covered Entity. Covered Entity shall not request Business Associate to use or disclose PHI in any manner that would not be permissible under the Privacy Rule if done by the Covered Entity, except that Business Associate may use and disclose PHI for data aggregation, and management and administrative activities of Business Associate, as permitted under this Section of the Contract.

(l) Term and Termination.

(1) Term. The Term of this Section of the Contract shall be effective as of the date the Contract is effective and shall terminate when the information collected in accordance with clause h. (10) of this Section of the Contract is provided to the Covered Entity and all of the PHI provided by Covered Entity to Business Associate, or created or received by Business Associate on behalf of Covered Entity, is destroyed or returned to Covered Entity, or, if it is infeasible to return or destroy PHI, protections are extended to such information, in accordance with the termination provisions in this Section.

(2) Termination for Cause Upon Covered Entity's knowledge of a material breach by Business Associate, Covered Entity shall either:

(A) Provide an opportunity for Business Associate to cure the breach or end the violation and terminate the Contract if Business Associate does not cure the breach or end the violation within the time specified by the Covered Entity; or

(B) Immediately terminate the Contract if Business Associate has breached a material term of this Section of the Contract and cure is not possible; or

(C) If neither termination nor cure is feasible, Covered Entity shall report the violation to the Secretary.

(3) Effect of Termination

(A) Except as provided in (l)(2) of this Section of the Contract, upon termination of this Contract, for any reason, Business Associate shall return or destroy all PHI received from Covered Entity, or created or received by Business Associate on behalf of Covered Entity. Business Associate shall also provide the information collected in accordance with clause h. (10) of this Section of the Contract to the Covered Entity

within ten business days of the notice of termination. This provision shall apply to PHI that is in the possession of subcontractors or agents of Business Associate. Business Associate shall retain no copies of the PHI.

(B) In the event that Business Associate determines that returning or destroying the PHI is infeasible, Business Associate shall provide to Covered Entity notification of the conditions that make return or destruction infeasible. Upon documentation by Business Associate that return or destruction of PHI is infeasible, Business Associate shall extend the protections of this Section of the Contract to such PHI and limit further uses and disclosures of PHI to those purposes that make return or destruction infeasible, for as long as Business Associate maintains such PHI. Infeasibility of the return or destruction of PHI includes, but is not limited to, requirements under state or federal law that the Business Associate maintains or preserves the PHI or copies thereof.

(m) Miscellaneous Provisions.

(1) Regulatory References. A reference in this Section of the Contract to a section in the Privacy Rule means the section as in effect or as amended.

(2) Amendment. The Parties agree to take such action as in necessary to amend this Section of the Contract from time to time as is necessary for Covered Entity to comply with requirements of the Privacy Rule and the Health Insurance Portability and Accountability Act of 1996, Pub. L. No. 104-191.

(3) Survival. The respective rights and obligations of Business Associate shall survive the termination of this Contract.

(4) Effect on Contract. Except as specifically required to implement the purposes of this Section of the Contract, all other terms of the Contract shall remain in force and effect.

(5) Construction. This Section of the Contract shall be construed as broadly as necessary to implement and comply with the Privacy Standard. Any ambiguity in this Section of the Contract shall be resolved in favor of a meaning that complies, and is consistent with, the Privacy Standard.

(6) Disclaimer. Covered Entity makes no warranty or representation that compliance with this Section of the Contract will be adequate or satisfactory for Business Associate's own purposes. Covered Entity shall not be liable to Business Associate for any claim, civil or criminal penalty, loss or damage related to or arising from the unauthorized use or disclosure of PHI by Business Associate or any of its officers, directors, employees, contractors or agents, or any third party to whom Business Associate has disclosed PHI contrary to the provisions of this Contract or applicable law. Business Associate is solely responsible for all decisions made, and actions taken, by Business Associate regarding the safeguarding, use and disclosure of PHI within its possession, custody or control.

(7) Indemnification. The Business Associate shall indemnify and hold the Covered Entity harmless from and against any and all claims, liabilities, judgments, fines, assessments, penalties, awards and any statutory damages that may be imposed or assessed pursuant to HIPAA, as amended or the

HITECH Act, including, without limitation, attorney's fees, expert witness fees, costs of investigation, litigation or dispute resolution, and costs awarded thereunder, relating to or arising out of any violation by the Business Associate and its agents, including subcontractors, of any obligation of Business Associate and its agents, including subcontractors, under this section of the contract, under HIPAA, the HITECH Act, the Privacy Rule and the Security Rule.

Notice to Executive Branch State Contractors and Prospective State Contractors of Campaign Contribution and Solicitation Limitations

This notice is provided under the authority of Connecticut General Statutes §9-612(g)(2), as amended by P.A. 10-1, and is for the purpose of informing state contractors and prospective state contractors of the following law (italicized words are defined on the reverse side of this page).

CAMPAIGN CONTRIBUTION AND SOLICITATION LIMITATIONS

No *state contractor, prospective state contractor, principal of a state contractor or principal of a prospective state contractor*, with regard to a *state contract* or *state contract solicitation* with or from a state agency in the executive branch or a quasi-public agency or a holder, or principal of a holder of a valid prequalification certificate, shall make a contribution to (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of Governor, Lieutenant Governor, Attorney General, State Comptroller, Secretary of the State or State Treasurer, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee (which includes town committees).

In addition, no holder or principal of a holder of a valid prequalification certificate, shall make a contribution to (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of State senator or State representative, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee.

On and after January 1, 2011, no state contractor, prospective state contractor, principal of a state contractor or principal of a prospective state contractor, with regard to a state contract or state contract solicitation with or from a state agency in the executive branch or a quasi-public agency or a holder, or principal of a holder of a valid prequalification certificate, shall **knowingly** *solicit* contributions from the state contractor's or prospective state contractor's employees or from a *subcontractor* or *principals of the subcontractor* on behalf of (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of Governor, Lieutenant Governor, Attorney General, State Comptroller, Secretary of the State or State Treasurer, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee.

DUTY TO INFORM

State contractors and prospective state contractors are required to inform their principals of the above prohibitions, as applicable, and the possible penalties and other consequences of any violation thereof.

PENALTIES FOR VIOLATIONS

Contributions or solicitations of contributions made in violation of the above prohibitions may result in the following civil and criminal penalties:

Civil penalties—Up to $2,000 or twice the amount of the prohibited contribution, whichever is greater, against a principal or a contractor. Any state contractor or prospective state contractor which fails to make reasonable efforts to comply with the provisions requiring notice to its principals of these prohibitions and the possible consequences of their violations may also be subject to civil penalties of up to $2,000 or twice the amount of the prohibited contributions made by their principals.

Criminal penalties—Any knowing and willful violation of the prohibition is a Class D felony, which may subject the violator to imprisonment of not more than 5 years, or not more than $5,000 in fines, or both.

CONTRACT CONSEQUENCES

In the case of a state contractor, contributions made or solicited in violation of the above prohibitions may resulting the contract being voided.

In the case of a prospective state contractor, contributions made or solicited in violation of the above prohibitions shall result in the contract described in the state contract solicitation not being awarded to the prospective state contractor, unless the State Elections Enforcement Commission determines that mitigating circumstances exist concerning such violation.

The State shall not award any other state contract to anyone found in violation of the above prohibitions for a period of one year after the election for which such contribution is made or solicited, unless the State Elections Enforcement Commission determines that mitigating circumstances exist concerning such violation.
Additional information may be found on the website of the State Elections Enforcement Commission, www.ct.gov/seec. Click on the link to “Lobbyist/Contractor Limitations.”

DEFINITIONS

"State contractor" means a person, business entity or nonprofit organization that enters into a state contract. Such person, business entity or nonprofit organization shall be deemed to be a state contractor until December thirty-first of the year in which such contract terminates. "State contractor" does not include a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision exclusively amongst themselves to further any purpose authorized by statute or charter, or an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person's capacity as a state or quasi-public agency employee.

"Prospective state contractor" means a person, business entity or nonprofit organization that (i) submits a response to a state contract solicitation by the state, a state agency or a quasi-public agency, or a proposal in response to a request for proposals by the state, a state agency or a quasi-public agency, until the contract has been entered into, or (ii) holds a valid prequalification certificate issued by the Commissioner of Administrative Services under section 4a-100. "Prospective state contractor" does not include a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision exclusively amongst themselves to further any purpose authorized by statute or charter, or an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person's capacity as a state or quasi-public agency employee.

"Principal of a state contractor or prospective state contractor" means (i) any individual who is a member of the board of directors of, or has an ownership interest of five per cent or more in, a state contractor or prospective state contractor, which is a business entity, except for an individual who is a member of the board of directors of a nonprofit organization**,** (ii) an individual who is employed by a state contractor or prospective state contractor, which is a business entity, as president, treasurer or executive vice president, (iii) an individual who is the chief executive officer of a state contractor or prospective state contractor, which is not a business entity, or if a state contractor or prospective state contractor has no such officer, then the officer who duly possesses comparable powers and duties, (iv) an officer or an employee of any state contractor or prospective state contractor who has *managerial or discretionary responsibilities with respect to a state contract,* (v) the spouse or a *dependent child* who is eighteen years of age or older of an individual described in this subparagraph, or (vi) a political committee established or controlled by an individual described in this subparagraph or the business entity or nonprofit organization that is the state contractor or prospective state contractor.

"State contract" means an agreement or contract with the state or any state agency or any quasi-public agency, let through a procurement process or otherwise, having a value of fifty thousand dollars or more, or a combination or series of such agreements or contracts having a value of one hundred thousand dollars or more in a calendar year, for (i) the rendition of services, (ii) the furnishing of any goods, material, supplies, equipment or any items of any kind, (iii) the construction, alteration or repair of any public building or public work, (iv) the acquisition, sale or lease of any land or building, (v) a licensing arrangement, or (vi) a grant, loan or loan guarantee. "State contract" does not include any agreement or contract with the state, any state agency or any quasi-public agency that is exclusively federally funded, an education loan, a loan to an individual for other than commercial purposes or any agreement or contract between the state or any state agency and the United States Department of the Navy or the United States Department of Defense.

"State contract solicitation" means a request by a state agency or quasi-public agency, in whatever form issued, including, but not limited to, an invitation to bid, request for proposals, request for information or request for quotes, inviting bids, quotes or other types of submittals, through a competitive procurement process or another process authorized by law waiving competitive procurement.

"Managerial or discretionary responsibilities with respect to a state contract" means having direct, extensive and substantive responsibilities with respect to the negotiation of the state contract and not peripheral, clerical or ministerial responsibilities.

"Dependent child" means a child residing in an individual's household who may legally be claimed as a dependent on the federal income tax of such individual.

"Solicit" means (A) requesting that a contribution be made, (B) participating in any fund-raising activities for a candidate committee, exploratory committee, political committee or party committee, including, but not limited to, forwarding tickets to potential contributors, receiving contributions for transmission to any such committee or bundling contributions, (C) serving as chairperson, treasurer or deputy treasurer of any such committee, or (D) establishing a political committee for the sole purpose of soliciting or receiving contributions for any committee. Solicit does not include: (i) making a contribution that is otherwise permitted by Chapter 155 of the Connecticut General Statutes; (ii) informing any person of a position taken by a candidate for public office or a public official, (iii) notifying the person of any activities of, or contact information for, any candidate for public office; or (iv) serving as a member in any party committee or as an officer of such committee that is not otherwise prohibited in this section.

"Subcontractor" means any person, business entity or nonprofit organization that contracts to perform part or all of the obligations of a state contractor's state contract. Such person, business entity or nonprofit organization shall be deemed to be a subcontractor until December thirty first of the year in which the subcontract terminates. "Subcontractor" does not include (i) a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision exclusively amongst themselves to further any purpose authorized by statute or charter, or (ii) an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person's capacity as a state or quasi-public agency employee.

"Principal of a subcontractor" means (i) any individual who is a member of the board of directors of, or has an ownership interest of five per cent or more in, a subcontractor, which is a business entity, except for an individual who is a member of the board of directors of a nonprofit organization, (ii) an individual who is employed by a subcontractor, which is a business entity, as president, treasurer or executive vice president, (iii) an individual who is the chief executive officer of a subcontractor, which is not a business entity, or if a subcontractor has no such officer, then the officer who duly possesses comparable powers and duties, (iv) an officer or an employee of any subcontractor who has managerial or discretionary responsibilities with respect to a subcontract with a state contractor, (v) the spouse or a dependent child who is eighteen years of age or older of an individual described in this subparagraph, or (vi) a political committee established or controlled by an individual described in this subparagraph or the business entity or nonprofit organization that is the subcontractor.

EXHIBIT E

(state wages will be inserted here)

Project: Rehabilitation Of Salt Sheds

Minimum Rates and Classifications
for Heavy/Highway Construction

Connecticut Department of Labor
Wage and Workplace Standards Division

ID#: **H** 17130

By virtue of the authority vested in the Labor Commissioner under provisions of Section 31-53 of the General Statutes of Connecticut, as amended, the following are declared to be the prevailing rates and welfare payments and will apply only where the contract is advertised for bid within 20 days of the date on which the rates are established. Any contractor or subcontractor not obligated by agreement to pay to the welfare and pension fund shall pay this amount to each employee as part of his/her hourly wages.

Project Number:
FAP Number:
Project: Rehabilitation Of Salt Sheds

Project Town Preston
State Number: 172-407

CLASSIFICATION	Hourly Rate	Benefits
01) Asbestos/Toxic Waste Removal Laborers: Asbestos removal and encapsulation (except its removal from mechanical systems which are not to be scrapped), toxic waste removers, blasters. **See Laborers Group 5 and 7**		
1) Boilermaker	33.79	34% + 8.96
1a) Bricklayer, Cement Masons, Cement Finishers, Plasterers, Stone Masons	32.50	24.55
2) Carpenters, Piledrivermen	29.65	21.00

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2a) Diver Tenders	29.65	21.00
3) Divers	38.11	21.00
4) Painters: (Bridge Construction) Brush, Roller, Blasting (Sand, Water, etc.), Spray	42.75	16.90
4a) Painters: Brush and Roller	30.22	16.90
4b) Painters: Spray Only	33.22	16.90
4c) Painters: Steel Only	30.47	15.40
4d) Painters: Blast and Spray	33.22	16.90

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4e) Painters: Tanks, Tower and Swing	32.22	16.90
5) Electrician (Trade License required: E-1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9)	37.10	22.12
6) Ironworkers: (Ornamental, Reinforcing, Structural, and Precast Concrete Erection)	33.50	27.98 + a
7) Plumbers (Trade License required: (P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2) and Pipefitters (Including HVAC Work) (Trade License required: S-1,2,3,4,5,6,7,8 B-1,2,3,4 D-1,2,3,4 G-1, G-2, G-8, G-9)	38.67	25.56

----LABORERS---- - Last updated 4/11/12

8) Group 1: Laborer (Unskilled), Common or General, acetylene burner, concrete specialist	25.80	16.45
9) Group 2: Chain saw operators, fence and guard rail erectors, pneumatic tool operators, powdermen, air tool operator	26.05	16.45

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10) Group 3: Pipelayers	26.30	16.45
11) Group 4: Jackhammer/Pavement breaker (handheld); mason tenders (cement/concrete), catch basin builders, asphalt rakers, air track operators, block pavers and curb setters	26.30	16.45
12) Group 5: Toxic waste removal (non-mechanical systems)	27.80	16.45
13) Group 6: Blasters	27.55	16.45
Group 7: Asbestos Removal, non-mechanical systems (does not include leaded joint pipe)	26.80	16.45
Group 8: Traffic control signalmen	16.00	16.45

----LABORERS (TUNNEL CONSTRUCTION, FREE AIR). Shield Drive and Liner Plate Tunnels in Free Air.---- Last updated 4/11/12----

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13a) Miners, Motormen, Mucking Machine Operators, Nozzle Men, Grout Men, Shaft & Tunnel Steel & Rodmen, Shield & Erector, Arm Operator, Cable Tenders	31.28	16.45 + a
13b) Brakemen, Trackmen	30.37	16.45 + a

----CLEANING, CONCRETE AND CAULKING TUNNEL----Last updated 4/11/12----

14) Concrete Workers, Form Movers, and Strippers	30.37	16.45 + a
15) Form Erectors	30.68	16.45 + a

----ROCK SHAFT LINING, CONCRETE, LINING OF SAME AND TUNNEL IN FREE AIR:----Last updated 4/11/12----

16) Brakemen, Trackmen, Tunnel Laborers, Shaft Laborers	30.37	16.45 + a

Project: Rehabilitation Of Salt Sheds

17) Laborers Topside, Cage Tenders, Bellman	30.26	16.45 + a
18) Miners	31.28	16.45 + a

----TUNNELS, CAISSON AND CYLINDER WORK IN COMPRESSED AIR: ----Last updated 4/11/12----

18a) Blaster	37.41	16.45 + a
19) Brakemen, Trackmen, Groutman, Laborers, Outside Lock Tender, Gauge Tenders	37.22	16.45 + a
20) Change House Attendants, Powder Watchmen, Top on Iron Bolts	35.35	16.45 + a
21) Mucking Machine Operator	37.97	16.45 + a

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----TRUCK DRIVERS----(*see note below)

Two axle trucks	27.88	17.22 + a
Three axle trucks; two axle ready mix	27.98	17.22 + a
Three axle ready mix	28.03	17.22 + a
Four axle trucks, heavy duty trailer (up to 40 tons)	28.08	17.22 + a
Four axle ready-mix	28.13	17.22 + a
Heavy duty trailer (40 tons and over)	28.33	17.22 + a

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Specialized earth moving equipment other than conventional type on-the road trucks and semi-trailer (including Euclids)	28.13	17.22 + a

----POWER EQUIPMENT OPERATORS----

Group 1: Crane handling or erecting structural steel or stone, hoisting engineer (2 drums or over), front end loader (7 cubic yards or over), Work Boat 26 ft. & Over. (Trade License Required)	35.50	20.50 + a
Group 2: Cranes (100 ton rate capacity and over); Backhoe/Excavator over 2 cubic yards; Piledriver ($3.00 premium when operator controls hammer). (Trade License Required)	35.18	20.50 + a
Group 3: Excavator/Backhoe under 2 cubic yards; Cranes (under 100 ton rated capacity), Gradall; Master Mechanic; Hoisting Engineer (all types of equipment where a drum and cable are used to hoist or drag material regardless of motive power of operation), Rubber Tire Excavator (Drott-1085 or similar);Grader Operator; Bulldozer Fine Grade (slopes, shaping, laser or GPS, etc.). (Trade License Required)	34.44	20.50 + a
Group 4: Trenching Machines; Lighter Derrick; Concrete Finishing Machine; CMI Machine or Similar; Koehring Loader (Skooper)	34.05	20.50 + a
Group 5: Specialty Railroad Equipment; Asphalt Paver; Asphalt Spreader; Asphalt Reclaiming Machine; Line Grinder; Concrete Pumps; Drills with Self Contained Power Units; Boring Machine; Post Hole Digger; Auger; Pounder; Well Digger; Milling Machine (over 24" Mandrell)	33.46	20.50 + a

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Project: Rehabilitation Of Salt Sheds

Group 5 continued: Side Boom; Combination Hoe and Loader; Directional Driller.	33.46	20.50 + a
Group 6: Front End Loader (3 up to 7 cubic yards); Bulldozer (rough grade dozer).	33.15	20.50 + a
Group 7: Asphalt Roller; Concrete Saws and Cutters (ride on types); Vermeer Concrete Cutter; Stump Grinder; Scraper; Snooper; Skidder; Milling Machine (24" and Under Mandrel).	32.81	20.50 + a
Group 8: Mechanic, Grease Truck Operator, Hydroblaster, Barrier Mover, Power Stone Spreader; Welder; Work Boat under 26 ft.; Transfer Machine.	32.41	20.50 + a
Group 9: Front End Loader (under 3 cubic yards), Skid Steer Loader regardless of attachments (Bobcat or Similar); Fork Lift, Power Chipper; Landscape Equipment (including hydroseeder).	31.98	20.50 + a
Group 10: Vibratory Hammer, Ice Machine, Diesel and Air Hammer, etc.	29.94	20.50 + a
Group 11: Conveyor, Earth Roller; Power Pavement Breaker (whiphammer), Robot Demolition Equipment.	29.94	20.50 + a

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Group 12: Wellpoint Operator.	29.88	20.50 + a
Group 13: Compressor Battery Operator.	29.30	20.50 + a
Group 14: Elevator Operator; Tow Motor Operator (Solid Tire No Rough Terrain).	28.16	20.50 + a
Group 15: Generator Operator; Compressor Operator; Pump Operator; Welding Machine Operator; Heater Operator.	27.75	20.50 + a
Group 16: Maintenance Engineer/Oiler	27.10	20.50 + a
Group 17: Portable asphalt plant operator; portable crusher plant operator; portable concrete plant operator.	31.41	20.50 + a
Group 18: Power Safety Boat; Vacuum Truck; Zim Mixer; Sweeper; (minimum for any job requiring CDL license).	28.99	20.50 + a

As of: Thursday, November 15, 2012

Project: Rehabilitation Of Salt Sheds

**NOTE: SEE BELOW

----LINE CONSTRUCTION----(Railroad Construction and Maintenance)----Last updated 9/3/2010----

20) Lineman, Cable Splicer, Dynamite Man	44.36	3% + 13.70
21) Heavy Equipment Operator	39.92	3% + 13.70
22) Equipment Operator, Tractor Trailer Driver, Material Men	37.71	3% + 13.70
23) Driver Groundmen	33.27	3% + 13.70

----LINE CONSTRUCTION----Last updated 4/17/09----

As of: Thursday, November 15, 2012

Project: Rehabilitation Of Salt Sheds

24) Driver Groundmen	30.92	6.5% + 9.70
25) Groundmen	22.67	6.5% + 6.20
26) Heavy Equipment Operators	37.10	6.5% + 10.70
27) Linemen, Cable Splicers, Dynamite Men	41.22	6.5% + 12.20
28) Material Men, Tractor Trailer Drivers, Equipment Operators	35.04	6.5% + 10.45

As of: Thursday, November 15, 2012

Project: Rehabilitation Of Salt Sheds

Welders: Rate for craft to which welding is incidental.

**Note: Hazardous waste removal work receives additional $1.25 per hour for truck drivers.*

***Note: Hazardous waste premium $3.00 per hour over classified rate*

Crane with 150 ft. boom (including jib) - $1.50 extra
Crane with 200 ft. boom (including jib) - $2.50 extra
Crane with 250 ft. boom (including jib) - $5.00 extra
Crane with 300 ft. boom (including jib) - $7.00 extra
Crane with 400 ft. boom (including jib) - $10.00 extra

All classifications that indicate a percentage of the fringe benefits must be calculated at the percentage rate times the "base hourly rate".

Apprentices duly registered under the Commissioner of Labor's regulations on "Work Training Standards for Apprenticeship and Training Programs" Section 31-51-d-1 to 12, are allowed to be paid the appropriate percentage of the prevailing journeymen hourly base and the full fringe benefit rate, providing the work site ratio shall not be less than one full-time journeyperson instructing and supervising the work of each apprentice in a specific trade.

~~Connecticut General Statute Section 31-55a: Annual Adjustments to wage rates by contractors doing state work ~~

The Prevailing wage rates applicable to this project are subject to annual adjustments each July 1st for the duration of the project.

Each contractor shall pay the annual adjusted prevailing wage rate that is in effect each July 1st, as posted by the Department of Labor.

It is the contractor's responsibility to obtain the annual adjusted prevailing wage rate increases directly from the Department of Labor's website.

The annual adjustments will be posted on the Department of Labor's Web page: www.ct.gov/dol.

The Department of Labor will continue to issue the initial prevailing wage rate schedule to the Contracting Agency for the project.

All subsequent annual adjustments will be posted on our Web Site for contractor access.

As of: Thursday, November 15, 2012

Project: Rehabilitation Of Salt Sheds

Effective October 1, 2005 - Public Act 05-50: any person performing the work of any mechanic, laborer, or worker shall be paid prevailing wage

All Person who perform work ON SITE must be paid prevailing wage for the appropriate mechanic, laborer, or worker classification.

All certified payrolls must list the hours worked and wages paid to All Persons who perform work ON SITE regardless of their ownership i.e.: (Owners, Corporate Officers, LLC Members, Independent Contractors, et. al)

Reporting and payment of wages is required regardless of any contractual relationship alleged to exist between the contractor and such person.

~~Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clause (29 CFR 5.5 (a) (1) (ii)).

Please direct any questions which you may have pertaining to classification of work and payment of prevailing wages to the Wage and Workplace Standards Division, telephone (860)263-6790.

As of: Thursday, November 15, 2012

Project: Rehabilitation Of Salt Sheds

Minimum Rates and Classifications
for Heavy/Highway Construction

Connecticut Department of Labor
Wage and Workplace Standards Division

ID#: **H** 17131

By virtue of the authority vested in the Labor Commissioner under provisions of Section 31-53 of the General Statutes of Connecticut, as amended, the following are declared to be the prevailing rates and welfare payments and will apply only where the contract is advertised for bid within 20 days of the date on which the rates are established. Any contractor or subcontractor not obligated by agreement to pay to the welfare and pension fund shall pay this amount to each employee as part of his/her hourly wages.

Project Number:
FAP Number:
Project: Rehabilitation Of Salt Sheds

Project Town Putnam
State Number: 172-407

CLASSIFICATION	Hourly Rate	Benefits
01) Asbestos/Toxic Waste Removal Laborers: Asbestos removal and encapsulation (except its removal from mechanical systems which are not to be scrapped), toxic waste removers, blasters. **See Laborers Group 5 and 7**		
1) Boilermaker	33.79	34% + 8.96
1a) Bricklayer, Cement Masons, Cement Finishers, Plasterers, Stone Masons	32.50	24.55
2) Carpenters, Piledrivermen	29.65	21.00

As of: Thursday, November 15, 2012

Project: Rehabilitation Of Salt Sheds

2a) Diver Tenders	29.65	21.00
3) Divers	38.11	21.00
4) Painters: (Bridge Construction) Brush, Roller, Blasting (Sand, Water, etc.), Spray	42.75	16.90
4a) Painters: Brush and Roller	30.22	16.90
4d) Painters: Blast and Spray	33.22	16.90
4e) Painters: Tanks, Tower and Swing	32.22	16.90
5) Electrician (Trade License required: E-1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9)	37.10	22.12

As of: Thursday, November 15, 2012

Project: Rehabilitation Of Salt Sheds

6) Ironworkers: (Ornamental, Reinforcing, Structural, and Precast Concrete Erection)	33.50	27.98 + a
7) Plumbers (Trade License required: (P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2) and Pipefitters (Including HVAC Work) (Trade License required: S-1,2,3,4,5,6,7,8 B-1,2,3,4 D-1,2,3,4 G-1, G-2, G-8, G-9)	38.67	25.56

----LABORERS---- - Last updated 4/11/12

8) Group 1: Laborer (Unskilled), Common or General, acetylene burner, concrete specialist	25.80	16.45
9) Group 2: Chain saw operators, fence and guard rail erectors, pneumatic tool operators, powdermen, air tool operator	26.05	16.45
10) Group 3: Pipelayers	26.30	16.45
11) Group 4: Jackhammer/Pavement breaker (handheld); mason tenders (cement/concrete), catch basin builders, asphalt rakers, air track operators, block pavers and curb setters	26.30	16.45

As of: Thursday, November 15, 2012

Project: Rehabilitation Of Salt Sheds

12) Group 5: Toxic waste removal (non-mechanical systems)	27.80	16.45
13) Group 6: Blasters	27.55	16.45
Group 7: Asbestos Removal, non-mechanical systems (does not include leaded joint pipe)	26.80	16.45
Group 8: Traffic control signalmen	16.00	16.45

----LABORERS (TUNNEL CONSTRUCTION, FREE AIR). Shield Drive and Liner Plate Tunnels in Free Air.---- Last updated 4/11/12----

13a) Miners, Motormen, Mucking Machine Operators, Nozzle Men, Grout Men, Shaft & Tunnel Steel & Rodmen, Shield & Erector, Arm Operator, Cable Tenders	31.28	16.45 + a
13b) Brakemen, Trackmen	30.37	16.45 + a

As of: Thursday, November 15, 2012

Project: Rehabilitation Of Salt Sheds

----CLEANING, CONCRETE AND CAULKING TUNNEL----Last updated 4/11/12----

14) Concrete Workers, Form Movers, and Strippers	30.37	16.45 + a
15) Form Erectors	30.68	16.45 + a

----ROCK SHAFT LINING, CONCRETE, LINING OF SAME AND TUNNEL IN FREE AIR:----Last updated 4/11/12----

16) Brakemen, Trackmen, Tunnel Laborers, Shaft Laborers	30.37	16.45 + a
17) Laborers Topside, Cage Tenders, Bellman	30.26	16.45 + a
18) Miners	31.28	16.45 + a

As of: Thursday, November 15, 2012

Project: Rehabilitation Of Salt Sheds

----TUNNELS, CAISSON AND CYLINDER WORK IN COMPRESSED AIR: ----Last updated 4/11/12----

18a) Blaster	37.41	16.45 + a
19) Brakemen, Trackmen, Groutman, Laborers, Outside Lock Tender, Gauge Tenders	37.22	16.45 + a
20) Change House Attendants, Powder Watchmen, Top on Iron Bolts	35.35	16.45 + a
21) Mucking Machine Operator	37.97	16.45 + a

----TRUCK DRIVERS----(*see note below)

Two axle trucks	27.88	17.22 + a

As of: Thursday, November 15, 2012

Three axle trucks; two axle ready mix	27.98	17.22 + a
Three axle ready mix	28.03	17.22 + a
Four axle trucks, heavy duty trailer (up to 40 tons)	28.08	17.22 + a
Four axle ready-mix	28.13	17.22 + a
Heavy duty trailer (40 tons and over)	28.33	17.22 + a
Specialized earth moving equipment other than conventional type on-the road trucks and semi-trailer (including Euclids)	28.13	17.22 + a

----POWER EQUIPMENT OPERATORS----

Project: Rehabilitation Of Salt Sheds

Group 1: Crane handling or erecting structural steel or stone, hoisting engineer (2 drums or over), front end loader (7 cubic yards or over), Work Boat 26 ft. & Over. (Trade License Required)	35.50	20.50 + a
Group 2: Cranes (100 ton rate capacity and over); Backhoe/Excavator over 2 cubic yards; Piledriver ($3.00 premium when operator controls hammer). (Trade License Required)	35.18	20.50 + a
Group 3: Excavator/Backhoe under 2 cubic yards; Cranes (under 100 ton rated capacity), Gradall; Master Mechanic; Hoisting Engineer (all types of equipment where a drum and cable are used to hoist or drag material regardless of motive power of operation), Rubber Tire Excavator (Drott-1085 or similar);Grader Operator; Bulldozer Fine Grade (slopes, shaping, laser or GPS, etc.). (Trade License Required)	34.44	20.50 + a
Group 4: Trenching Machines; Lighter Derrick; Concrete Finishing Machine; CMI Machine or Similar; Koehring Loader (Skooper)	34.05	20.50 + a
Group 5: Specialty Railroad Equipment; Asphalt Paver; Asphalt Spreader; Asphalt Reclaiming Machine; Line Grinder; Concrete Pumps; Drills with Self Contained Power Units; Boring Machine; Post Hole Digger; Auger; Pounder; Well Digger; Milling Machine (over 24" Mandrell)	33.46	20.50 + a
Group 5 continued: Side Boom; Combination Hoe and Loader; Directional Driller.	33.46	20.50 + a
Group 6: Front End Loader (3 up to 7 cubic yards); Bulldozer (rough grade dozer).	33.15	20.50 + a

As of: Thursday, November 15, 2012

Project: Rehabilitation Of Salt Sheds

Group 7: Asphalt Roller; Concrete Saws and Cutters (ride on types); Vermeer Concrete Cutter; Stump Grinder; Scraper; Snooper; Skidder; Milling Machine (24" and Under Mandrel).	32.81	20.50 + a
Group 8: Mechanic, Grease Truck Operator, Hydroblaster, Barrier Mover, Power Stone Spreader; Welder; Work Boat under 26 ft.; Transfer Machine.	32.41	20.50 + a
Group 9: Front End Loader (under 3 cubic yards), Skid Steer Loader regardless of attachments (Bobcat or Similar); Fork Lift, Power Chipper; Landscape Equipment (including hydroseeder).	31.98	20.50 + a
Group 10: Vibratory Hammer, Ice Machine, Diesel and Air Hammer, etc.	29.94	20.50 + a
Group 11: Conveyor, Earth Roller; Power Pavement Breaker (whiphammer), Robot Demolition Equipment.	29.94	20.50 + a
Group 12: Wellpoint Operator.	29.88	20.50 + a
Group 13: Compressor Battery Operator.	29.30	20.50 + a

As of: Thursday, November 15, 2012

Project: Rehabilitation Of Salt Sheds

Group 14: Elevator Operator; Tow Motor Operator (Solid Tire No Rough Terrain).	28.16	20.50 + a
Group 15: Generator Operator; Compressor Operator; Pump Operator; Welding Machine Operator; Heater Operator.	27.75	20.50 + a
Group 16: Maintenance Engineer/Oiler	27.10	20.50 + a
Group 17: Portable asphalt plant operator; portable crusher plant operator; portable concrete plant operator.	31.41	20.50 + a
Group 18: Power Safety Boat; Vacuum Truck; Zim Mixer; Sweeper; (minimum for any job requiring CDL license).	28.99	20.50 + a

**NOTE: SEE BELOW

----LINE CONSTRUCTION----(Railroad Construction and Maintenance)----Last updated 9/3/2010----

As of: Thursday, November 15, 2012

Project: Rehabilitation Of Salt Sheds

20) Lineman, Cable Splicer, Dynamite Man	44.36	3% + 13.70
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22) Equipment Operator, Tractor Trailer Driver, Material Men	37.71	3% + 13.70
23) Driver Groundmen	33.27	3% + 13.70

----LINE CONSTRUCTION----Last updated 4/17/09----

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As of: Thursday, November 15, 2012

Project: Rehabilitation Of Salt Sheds

26) Heavy Equipment Operators	37.10	6.5% + 10.70
27) Linemen, Cable Splicers, Dynamite Men	41.22	6.5% + 12.20
28) Material Men, Tractor Trailer Drivers, Equipment Operators	35.04	6.5% + 10.45

As of: Thursday, November 15, 2012

Project: Rehabilitation Of Salt Sheds

Welders: Rate for craft to which welding is incidental.

**Note: Hazardous waste removal work receives additional $1.25 per hour for truck drivers.*

***Note: Hazardous waste premium $3.00 per hour over classified rate*

Crane with 150 ft. boom (including jib) - $1.50 extra
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All classifications that indicate a percentage of the fringe benefits must be calculated at the percentage rate times the "base hourly rate".

Apprentices duly registered under the Commissioner of Labor's regulations on "Work Training Standards for Apprenticeship and Training Programs" Section 31-51-d-1 to 12, are allowed to be paid the appropriate percentage of the prevailing journeymen hourly base and the full fringe benefit rate, providing the work site ratio shall not be less than one full-time journeyperson instructing and supervising the work of each apprentice in a specific trade.

~~Connecticut General Statute Section 31-55a: Annual Adjustments to wage rates by contractors doing state work ~~

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As of: Thursday, November 15, 2012

Project: Rehabilitation Of Salt Sheds

Effective October 1, 2005 - Public Act 05-50: any person performing the work of any mechanic, laborer, or worker shall be paid prevailing wage

All Person who perform work ON SITE must be paid prevailing wage for the appropriate mechanic, laborer, or worker classification.

All certified payrolls must list the hours worked and wages paid to All Persons who perform work ON SITE regardless of their ownership i.e.: (Owners, Corporate Officers, LLC Members, Independent Contractors, et. al)

Reporting and payment of wages is required regardless of any contractual relationship alleged to exist between the contractor and such person.

~~Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clause (29 CFR 5.5 (a) (1) (ii)).

Please direct any questions which you may have pertaining to classification of work and payment of prevailing wages to the Wage and Workplace Standards Division, telephone (860)263-6790.

As of: Thursday, November 15, 2012

Project: Rehabilitation Of Salt Sheds

Minimum Rates and Classifications
for Heavy/Highway Construction

Connecticut Department of Labor
Wage and Workplace Standards Division

ID#: **H** 17132

By virtue of the authority vested in the Labor Commissioner under provisions of Section 31-53 of the General Statutes of Connecticut, as amended, the following are declared to be the prevailing rates and welfare payments and will apply only where the contract is advertised for bid within 20 days of the date on which the rates are established. Any contractor or subcontractor not obligated by agreement to pay to the welfare and pension fund shall pay this amount to each employee as part of his/her hourly wages.

Project Number:
FAP Number:
Project: Rehabilitation Of Salt Sheds

Project Town Thompson
State Number: 172-407

CLASSIFICATION	Hourly Rate	Benefits
01) Asbestos/Toxic Waste Removal Laborers: Asbestos removal and encapsulation (except its removal from mechanical systems which are not to be scrapped), toxic waste removers, blasters. **See Laborers Group 5 and 7**		
1) Boilermaker	33.79	34% + 8.96
1a) Bricklayer, Cement Masons, Cement Finishers, Plasterers, Stone Masons	32.50	24.55
2) Carpenters, Piledrivermen	29.65	21.00

As of: Thursday, November 15, 2012

Project: Rehabilitation Of Salt Sheds

2a) Diver Tenders	29.65	21.00
3) Divers	38.11	21.00
4) Painters: (Bridge Construction) Brush, Roller, Blasting (Sand, Water, etc.), Spray	42.75	16.90
4a) Painters: Brush and Roller	30.22	16.90
4d) Painters: Blast and Spray	33.22	16.90
4e) Painters: Tanks, Tower and Swing	32.22	16.90
5) Electrician (Trade License required: E-1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9)	37.10	22.12

As of: Thursday, November 15, 2012

Project: Rehabilitation Of Salt Sheds

6) Ironworkers: (Ornamental, Reinforcing, Structural, and Precast Concrete Erection)	33.50	27.98 + a
7) Plumbers (Trade License required: (P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2) and Pipefitters (Including HVAC Work) (Trade License required: S-1,2,3,4,5,6,7,8 B-1,2,3,4 D-1,2,3,4 G-1, G-2, G-8, G-9)	38.67	25.56

----LABORERS---- - Last updated 4/11/12

8) Group 1: Laborer (Unskilled), Common or General, acetylene burner, concrete specialist	25.80	16.45
9) Group 2: Chain saw operators, fence and guard rail erectors, pneumatic tool operators, powdermen, air tool operator	26.05	16.45
10) Group 3: Pipelayers	26.30	16.45
11) Group 4: Jackhammer/Pavement breaker (handheld); mason tenders (cement/concrete), catch basin builders, asphalt rakers, air track operators, block pavers and curb setters	26.30	16.45

As of: Thursday, November 15, 2012

Project: Rehabilitation Of Salt Sheds

12) Group 5: Toxic waste removal (non-mechanical systems)	27.80	16.45
13) Group 6: Blasters	27.55	16.45
Group 7: Asbestos Removal, non-mechanical systems (does not include leaded joint pipe)	26.80	16.45
Group 8: Traffic control signalmen	16.00	16.45

----LABORERS (TUNNEL CONSTRUCTION, FREE AIR). Shield Drive and Liner Plate Tunnels in Free Air.---- Last updated 4/11/12----

13a) Miners, Motormen, Mucking Machine Operators, Nozzle Men, Grout Men, Shaft & Tunnel Steel & Rodmen, Shield & Erector, Arm Operator, Cable Tenders	31.28	16.45 + a
13b) Brakemen, Trackmen	30.37	16.45 + a

As of: Thursday, November 15, 2012

Project: Rehabilitation Of Salt Sheds

----CLEANING, CONCRETE AND CAULKING TUNNEL----Last updated 4/11/12----

14) Concrete Workers, Form Movers, and Strippers	30.37	16.45 + a
15) Form Erectors	30.68	16.45 + a

----ROCK SHAFT LINING, CONCRETE, LINING OF SAME AND TUNNEL IN FREE AIR:----Last updated 4/11/12----

16) Brakemen, Trackmen, Tunnel Laborers, Shaft Laborers	30.37	16.45 + a
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As of: Thursday, November 15, 2012

Project: Rehabilitation Of Salt Sheds

----TUNNELS, CAISSON AND CYLINDER WORK IN COMPRESSED AIR: ----Last updated 4/11/12----

18a) Blaster	37.41	16.45 + a
19) Brakemen, Trackmen, Groutman, Laborers, Outside Lock Tender, Gauge Tenders	37.22	16.45 + a
20) Change House Attendants, Powder Watchmen, Top on Iron Bolts	35.35	16.45 + a
21) Mucking Machine Operator	37.97	16.45 + a

----TRUCK DRIVERS----(*see note below)

Two axle trucks	27.88	17.22 + a

As of: Thursday, November 15, 2012

Three axle trucks; two axle ready mix	27.98	17.22 + a
Three axle ready mix	28.03	17.22 + a
Four axle trucks, heavy duty trailer (up to 40 tons)	28.08	17.22 + a
Four axle ready-mix	28.13	17.22 + a
Heavy duty trailer (40 tons and over)	28.33	17.22 + a
Specialized earth moving equipment other than conventional type on-the road trucks and semi-trailer (including Euclids)	28.13	17.22 + a

----POWER EQUIPMENT OPERATORS----

Project: Rehabilitation Of Salt Sheds

Group 1: Crane handling or erecting structural steel or stone, hoisting engineer (2 drums or over), front end loader (7 cubic yards or over), Work Boat 26 ft. & Over. (Trade License Required)	35.50	20.50 + a
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Group 3: Excavator/Backhoe under 2 cubic yards; Cranes (under 100 ton rated capacity), Gradall; Master Mechanic; Hoisting Engineer (all types of equipment where a drum and cable are used to hoist or drag material regardless of motive power of operation), Rubber Tire Excavator (Drott-1085 or similar);Grader Operator; Bulldozer Fine Grade (slopes, shaping, laser or GPS, etc.). (Trade License Required)	34.44	20.50 + a
Group 4: Trenching Machines; Lighter Derrick; Concrete Finishing Machine; CMI Machine or Similar; Koehring Loader (Skooper)	34.05	20.50 + a
Group 5: Specialty Railroad Equipment; Asphalt Paver; Asphalt Spreader; Asphalt Reclaiming Machine; Line Grinder; Concrete Pumps; Drills with Self Contained Power Units; Boring Machine; Post Hole Digger; Auger; Pounder; Well Digger; Milling Machine (over 24" Mandrell)	33.46	20.50 + a
Group 5 continued: Side Boom; Combination Hoe and Loader; Directional Driller.	33.46	20.50 + a
Group 6: Front End Loader (3 up to 7 cubic yards); Bulldozer (rough grade dozer).	33.15	20.50 + a

As of: Thursday, November 15, 2012

Project: Rehabilitation Of Salt Sheds

Group 7: Asphalt Roller; Concrete Saws and Cutters (ride on types); Vermeer Concrete Cutter; Stump Grinder; Scraper; Snooper; Skidder; Milling Machine (24" and Under Mandrel).	32.81	20.50 + a
Group 8: Mechanic, Grease Truck Operator, Hydroblaster, Barrier Mover, Power Stone Spreader; Welder; Work Boat under 26 ft.; Transfer Machine.	32.41	20.50 + a
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Group 11: Conveyor, Earth Roller; Power Pavement Breaker (whiphammer), Robot Demolition Equipment.	29.94	20.50 + a
Group 12: Wellpoint Operator.	29.88	20.50 + a
Group 13: Compressor Battery Operator.	29.30	20.50 + a

As of: Thursday, November 15, 2012

Project: Rehabilitation Of Salt Sheds

Group 14: Elevator Operator; Tow Motor Operator (Solid Tire No Rough Terrain).	28.16	20.50 + a
Group 15: Generator Operator; Compressor Operator; Pump Operator; Welding Machine Operator; Heater Operator.	27.75	20.50 + a
Group 16: Maintenance Engineer/Oiler	27.10	20.50 + a
Group 17: Portable asphalt plant operator; portable crusher plant operator; portable concrete plant operator.	31.41	20.50 + a
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As of: Thursday, November 15, 2012

Project: Rehabilitation Of Salt Sheds

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Effective October 1, 2005 - Public Act 05-50: any person performing the work of any mechanic, laborer, or worker shall be paid prevailing wage

All Person who perform work ON SITE must be paid prevailing wage for the appropriate mechanic, laborer, or worker classification.

All certified payrolls must list the hours worked and wages paid to All Persons who perform work ON SITE regardless of their ownership i.e.: (Owners, Corporate Officers, LLC Members, Independent Contractors, et. al)

Reporting and payment of wages is required regardless of any contractual relationship alleged to exist between the contractor and such person.

~~Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clause (29 CFR 5.5 (a) (1) (ii)).

Please direct any questions which you may have pertaining to classification of work and payment of prevailing wages to the Wage and Workplace Standards Division, telephone (860)263-6790.

As of: Thursday, November 15, 2012

Project: Rehabilitation Of Salt Sheds

Minimum Rates and Classifications
for Building Construction

ID# : B 17130

Connecticut Department of Labor
Wage and Workplace Standards Division

By virtue of the authority vested in the Labor Commissioner under provisions of Section 31-53 of the General Statutes of Connecticut, as amended, the following are declared to be the prevailing rates and welfare payments and will apply only where the contract is advertised for bid within 20 days of the date on which the rates are established. Any contractor or subcontractor not obligated by agreement to pay to the welfare and pension fund shall pay this amount to each employee as part of his/her hourly wages.

Project Number:
State#: 172-407

Project Town Preston
FAP#:

Project: Rehabilitation Of Salt Sheds

CLASSIFICATION	Hourly Rate	Benefits
1a) Asbestos Worker/Insulator (Includes application of insulating materials, protective coverings, coatings, & finishes to all types of mechanical systems; application of firestopping material for wall openings & penetrations in walls, floors, ceilings - Last updated 7/21/11	36.86	25.51
1b) Asbestos/Toxic Waste Removal Laborers: Asbestos removal and encapsulation (except its removal from mechanical systems which are not to be scrapped), toxic waste removers, blasters.**See Laborers Group 7**		
2) Boilermaker	34.65	24.10

As of: **Thursday, November 15, 2012**

Project: Rehabilitation Of Salt Sheds

3a) Bricklayer, Cement Mason, Concrete Finisher (including caulking), Stone Masons	32.50	25.20 + a
3b) Tile Setter	32.94	22.42
3c) Terrazzo Mechanics and Marble Setters	31.69	22.35
3d) Tile, Marble & Terrazzo Finishers	26.25	19.20
3e) Plasterer	32.50	25.20

------LABORERS------

As of: **Thursday, November 15, 2012**

Project: Rehabilitation Of Salt Sheds

4) Group 1: Laborers (common or general), acetylene burners, carpenter tenders, concrete specialists, wrecking laborers, fire watchers.	25.80	16.45
4a) Group 2: Mortar mixers, plaster tender, power buggy operators, powdermen, fireproofer/mixer/nozzleman, fence erector.	26.05	16.45
4b) Group 3: Jackhammer operators, mason tender (brick) and mason tender (cement/concrete)	26.30	16.45
4c) **Group 4: Pipelayers (Installation of water, storm drainage or sewage lines outside of the building line with P6, P7 license) (the pipelayer rate shall apply only to one or two employees of the total crew who primary task is to actually perform the mating of pipe sections) P6 and P7 rate is $26.80	26.05	16.45
4d) Group 5: Air track operators, Sand blasters	26.55	16.45
4e) Group 6: Nuclear toxic waste removers, blasters	28.80	16.45

As of: **Thursday, November 15, 2012**

Project: Rehabilitation Of Salt Sheds

4f) Group 7: Asbestos/lead removal and encapsulation (except it's removal from mechanical systems which are not to be scrapped)	26.80	16.45
4g) Group 8: Bottom men on open air caisson, cylindrical work and boring crew	26.30	16.45
4h) Group 9: Top men on open air caisson, cylindrical work and boring crew	25.80	16.45
4i) Group 10: Traffic Control Signalman	16.00	16.45
5) Carpenter, Acoustical Ceiling Installation, Soft Floor/Carpet Laying, Metal Stud Installation, Form Work and Scaffold Building, Drywall Hanging, Modular-Furniture Systems Installers, Lathers, Piledrivers, Resilient Floor Layers.	29.65	21.00
5a) Millwrights	30.15	21.39

As of: **Thursday, November 15, 2012**

6) Electrical Worker (including low voltage wiring) (Trade License required: E1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9)	37.10	22.12
7a) Elevator Mechanic (Trade License required: R-1,2,5,6)	45.97	23.535+a+b

-----LINE CONSTRUCTION----

Groundman	23.80	3% + 13.70
Linemen/Cable Splicer	43.28	3% + 13.70
8) Glazier (Trade License required: FG-1,2)	33.78	16.90 + a

9) Ironworker, Ornamental, Reinforcing, Structural, and Precast Concrete Erection	33.50	27.98 + a

----OPERATORS----

Group 1: Crane handling or erecting structural steel or stone, hoisting engineer 2 drums or over, front end loader (7 cubic yards or over); work boat 26 ft. and over. (Trade License Required)	35.50	20.50 + a
Group 2: Cranes (100 ton rate capacity and over); Backhoe/Excavator over 2 cubic yards; Piledriver ($3.00 premium when operator controls hammer). (Trade License Required)	35.18	20.50 + a
Group 3: Excavator; Backhoe/Excavator under 2 cubic yards; Cranes (under 100 ton rated capacity), Grader/Blade; Master Mechanic; Hoisting Engineer (all types of equipment where a drum and cable are used to hoist or drag material regardless of motive power of operation), Rubber Tire Excavator (Drott-1085 or similar);Grader Operator; Bulldozer Fine Grade. (slopes, shaping, laser or GPS, etc.).	34.44	20.50 + a
Group 4: Trenching Machines; Lighter Derrick; Concrete Finishing Machine; CMI Machine or Similar; Koehring Loader (Skooper).	34.05	20.50 + a

Project: Rehabilitation Of Salt Sheds

Group 5: Specialty Railroad Equipment; Asphalt Paver; Asphalt Reclaiming Machine; Line Grinder; Concrete Pumps; Drills with Self Contained Power Units; Boring Machine; Post Hole Digger; Auger; Pounder; Well Digger; Milling Machine (over 24" Mandrell)	33.46	20.50 + a
Group 5 continued: Side Boom; Combination Hoe and Loader; Directional Driller; Pile Testing Machine.	33.46	20.50 + a
Group 6: Front End Loader (3 up to 7 cubic yards); Bulldozer (rough grade dozer).	33.15	20.50 + a
Group 7: Asphalt roller, concrete saws and cutters (ride on types), vermeer concrete cutter, Stump Grinder; Scraper; Snooper; Skidder; Milling Machine (24" and under Mandrell).	32.81	20.50 + a
Group 8: Mechanic, grease truck operator, hydroblaster; barrier mover; power stone spreader; welding; work boat under 26 ft.; transfer machine.	32.41	20.50 + a
Group 9: Front end loader (under 3 cubic yards), skid steer loader regardless of attachments, (Bobcat or Similar): forklift, power chipper; landscape equipment (including Hydroseeder).	31.98	20.50 + a

As of: **Thursday, November 15, 2012**

Project: Rehabilitation Of Salt Sheds

Group 10: Vibratory hammer; ice machine; diesel and air, hammer, etc.	29.94	20.50 + a
Group 11: Conveyor, earth roller, power pavement breaker (whiphammer), robot demolition equipment.	29.94	20.50 + a
Group 12: Wellpoint operator.	29.88	20.50 + a
Group 13: Compressor battery operator.	29.30	20.50 + a
Group 14: Elevator operator; tow motor operator (solid tire no rough terrain).	28.16	20.50 + a
Group 15: Generator Operator; Compressor Operator; Pump Operator; Welding Machine Operator; Heater Operator.	27.75	20.50 + a

As of: **Thursday, November 15, 2012**

Project: Rehabilitation Of Salt Sheds

Group 16: Maintenance Engineer/Oiler.	27.10	20.50 + a
Group 17: Portable asphalt plant operator; portable crusher plant operator; portable concrete plant operator.	31.41	20.50 + a
Group 18: Power safety boat; vacuum truck; zim mixer; sweeper; (Minimum for any job requiring a CDL license).	28.99	20.50 + a

------PAINTERS (Including Drywall Finishing)------

10a) Brush and Roller	30.22	16.90
10b) Taping Only/Drywall Finishing	30.97	16.90

As of: **Thursday, November 15, 2012**

10c) Paperhanger and Red Label	30.72	16.90
10e) Blast and Spray	33.22	16.90
11) Plumber (excluding HVAC pipe installation) (Trade License required: P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2)	38.67	25.56
12) Well Digger, Pile Testing Machine	33.01	19.40 + a
13) Roofer (composition)	31.40	17.14
14) Roofer (slate & tile)	31.90	17.14

Project: Rehabilitation Of Salt Sheds

15) Sheetmetal Worker (Trade License required for HVAC and Ductwork: SM-1,SM-2,SM-3,SM-4,SM-5,SM-6)	33.21	30.56
16) Pipefitter (Including HVAC work) (Trade License required: S-1,2,3,4,5,6,7,8 B-1,2,3,4 D-1,2,3,4, G-1, G-2, G-8 & G-9)	38.67	25.56

------TRUCK DRIVERS------

17a) 2 Axle	27.88	17.22 + a
17b) 3 Axle, 2 Axle Ready Mix	27.98	17.22 + a
17c) 3 Axle Ready Mix	28.03	17.22 + a

As of: **Thursday, November 15, 2012**

Project: Rehabilitation Of Salt Sheds

17d) 4 Axle, Heavy Duty Trailer up to 40 tons	28.08	17.22 + a
17e) 4 Axle Ready Mix	28.13	17.22 + a
17f) Heavy Duty Trailer (40 Tons and Over)	28.33	17.22 + a
17g) Specialized Earth Moving Equipment (Other Than Conventional Type on-the-Road Trucks and Semi-Trailers, Including Euclids)	28.13	17.22 + a
18) Sprinkler Fitter (Trade License required: F-1,2,3,4)	40.50	16.85 + a
19) Theatrical Stage Journeyman	22.22	6.53

As of: **Thursday, November 15, 2012**

Project: Rehabilitation Of Salt Sheds

Welders: Rate for craft to which welding is incidental.

**Note: Hazardous waste removal work receives additional $1.25 per hour for truck drivers.*

***Note: Hazardous waste premium $3.00 per hour over classified rate*

Crane with 150 ft. boom (including jib) - $1.50 extra
Crane with 200 ft. boom (including jib) - $2.50 extra
Crane with 250 ft. boom (including jib) - $5.00 extra
Crane with 300 ft. boom (including jib) - $7.00 extra
Crane with 400 ft. boom (including jib) - $10.00 extra

All classifications that indicate a percentage of the fringe benefits must be calculated at the percentage rate times the "base hourly rate".

Apprentices duly registered under the Commissioner of Labor's regulations on "Work Training Standards for Apprenticeship and Training Programs" Section 31-51-d-1 to 12, are allowed to be paid the appropriate percentage of the prevailing journeymen hourly base and the full fringe benefit rate, providing the work site ratio shall not be less than one full-time journeyperson instructing and supervising the work of each apprentice in a specific trade.

The Prevailing wage rates applicable to this project are subject to annual adjustments each July 1st for the duration of the project.

Each contractor shall pay the annual adjusted prevailing wage rate that is in effect each July 1st, as posted by the Department of Labor.

It is the contractor's responsibility to obtain the annual adjusted prevailing wage rate increases directly from the Department of Labor's website.

The annual adjustments will be posted on the Department of Labor's Web page: www.ct.gov/dol

The Department of Labor will continue to issue the initial prevailing wage rate schedule to the Contracting Agency for the project.

All subsequent annual adjustments will be posted on our Web Site for contractor access.

As of: **Thursday, November 15, 2012**

Project: Rehabilitation Of Salt Sheds

Effective October 1, 2005 - Public Act 05-50: any person performing the work of any mechanic, laborer, or worker shall be paid prevailing wage

All Person who perform work ON SITE must be paid prevailing wage for the appropriate mechanic, laborer, or worker classification.

All certified payrolls must list the hours worked and wages paid to All Persons who perform work ON SITE regardless of their ownership i.e.: (Owners, Corporate Officers, LLC Members, Independent Contractors, et. al)
Reporting and payment of wages is required regardless of any contractual relationship alleged to exist between the contractor and such person.

~~Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clause (29 CFR 5.5 (a) (1) (ii)).

Please direct any questions which you may have pertaining to classification of work and payment of prevailing wages to the Wage and Workplace Standards Division, telephone (860)263-6790.

As of: **Thursday, November 15, 2012**

Project: Rehabilitation Of Salt Sheds

Minimum Rates and Classifications
for Building Construction

Connecticut Department of Labor
Wage and Workplace Standards Division

ID# : B 17131

By virtue of the authority vested in the Labor Commissioner under provisions of Section 31-53 of the General Statutes of Connecticut, as amended, the following are declared to be the prevailing rates and welfare payments and will apply only where the contract is advertised for bid within 20 days of the date on which the rates are established. Any contractor or subcontractor not obligated by agreement to pay to the welfare and pension fund shall pay this amount to each employee as part of his/her hourly wages.

Project Number:
State#: 172-407

Project Town Putnam
FAP#:

Project: Rehabilitation Of Salt Sheds

CLASSIFICATION	Hourly Rate	Benefits
1a) Asbestos Worker/Insulator (Includes application of insulating materials, protective coverings, coatings, & finishes to all types of mechanical systems; application of firestopping material for wall openings & penetrations in walls, floors, ceilings - Last updated 7/21/11	36.86	25.51
1b) Asbestos/Toxic Waste Removal Laborers: Asbestos removal and encapsulation (except its removal from mechanical systems which are not to be scrapped), toxic waste removers, blasters.**See Laborers Group 7**		
2) Boilermaker	34.65	24.10

As of: **Thursday, November 15, 2012**

Project: Rehabilitation Of Salt Sheds

3a) Bricklayer, Cement Mason, Concrete Finisher (including caulking), Stone Masons	32.50	25.20 + a
3b) Tile Setter	32.94	22.42
3c) Terrazzo Mechanics and Marble Setters	31.69	22.35
3d) Tile, Marble & Terrazzo Finishers	26.25	19.20
3e) Plasterer	32.50	25.20

------LABORERS------

As of: **Thursday, November 15, 2012**

Project: Rehabilitation Of Salt Sheds

4) Group 1: Laborers (common or general), acetylene burners, carpenter tenders, concrete specialists, wrecking laborers, fire watchers.	25.80	16.45
4a) Group 2: Mortar mixers, plaster tender, power buggy operators, powdermen, fireproofer/mixer/nozzleman, fence erector.	26.05	16.45
4b) Group 3: Jackhammer operators, mason tender (brick) and mason tender (cement/concrete)	26.30	16.45
4c) **Group 4: Pipelayers (Installation of water, storm drainage or sewage lines outside of the building line with P6, P7 license) (the pipelayer rate shall apply only to one or two employees of the total crew who primary task is to actually perform the mating of pipe sections) P6 and P7 rate is $26.80	26.05	16.45
4d) Group 5: Air track operators, Sand blasters	26.55	16.45
4e) Group 6: Nuclear toxic waste removers, blasters	28.80	16.45

As of: **Thursday, November 15, 2012**

Project: Rehabilitation Of Salt Sheds

4f) Group 7: Asbestos/lead removal and encapsulation (except it's removal from mechanical systems which are not to be scrapped)	26.80	16.45
4g) Group 8: Bottom men on open air caisson, cylindrical work and boring crew	26.30	16.45
4h) Group 9: Top men on open air caisson, cylindrical work and boring crew	25.80	16.45
4i) Group 10: Traffic Control Signalman	16.00	16.45
5) Carpenter, Acoustical Ceiling Installation, Soft Floor/Carpet Laying, Metal Stud Installation, Form Work and Scaffold Building, Drywall Hanging, Modular-Furniture Systems Installers, Lathers, Piledrivers, Resilient Floor Layers.	29.65	21.00
5a) Millwrights	30.15	21.39

As of: **Thursday, November 15, 2012**

6) Electrical Worker (including low voltage wiring) (Trade License required: E1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9)	37.10	22.12
7a) Elevator Mechanic (Trade License required: R-1,2,5,6)	45.97	23.535+a+b

-----LINE CONSTRUCTION----

Groundman	23.80	3% + 13.70
Linemen/Cable Splicer	43.28	3% + 13.70
8) Glazier (Trade License required: FG-1,2)	33.78	16.90 + a

9) Ironworker, Ornamental, Reinforcing, Structural, and Precast Concrete Erection	33.50	27.98 + a

----OPERATORS----

Group 1: Crane handling or erecting structural steel or stone, hoisting engineer 2 drums or over, front end loader (7 cubic yards or over); work boat 26 ft. and over. (Trade License Required)	35.50	20.50 + a
Group 2: Cranes (100 ton rate capacity and over); Backhoe/Excavator over 2 cubic yards; Piledriver ($3.00 premium when operator controls hammer). (Trade License Required)	35.18	20.50 + a
Group 3: Excavator; Backhoe/Excavator under 2 cubic yards; Cranes (under 100 ton rated capacity), Grader/Blade; Master Mechanic; Hoisting Engineer (all types of equipment where a drum and cable are used to hoist or drag material regardless of motive power of operation), Rubber Tire Excavator (Drott-1085 or similar);Grader Operator; Bulldozer Fine Grade. (slopes, shaping, laser or GPS, etc.).	34.44	20.50 + a
Group 4: Trenching Machines; Lighter Derrick; Concrete Finishing Machine; CMI Machine or Similar; Koehring Loader (Skooper).	34.05	20.50 + a

Project: Rehabilitation Of Salt Sheds

Group 5: Specialty Railroad Equipment; Asphalt Paver; Asphalt Reclaiming Machine; Line Grinder; Concrete Pumps; Drills with Self Contained Power Units; Boring Machine; Post Hole Digger; Auger; Pounder; Well Digger; Milling Machine (over 24" Mandrell)	33.46	20.50 + a
Group 5 continued: Side Boom; Combination Hoe and Loader; Directional Driller; Pile Testing Machine.	33.46	20.50 + a
Group 6: Front End Loader (3 up to 7 cubic yards); Bulldozer (rough grade dozer).	33.15	20.50 + a
Group 7: Asphalt roller, concrete saws and cutters (ride on types), vermeer concrete cutter, Stump Grinder; Scraper; Snooper; Skidder; Milling Machine (24" and under Mandrell).	32.81	20.50 + a
Group 8: Mechanic, grease truck operator, hydroblaster; barrier mover; power stone spreader; welding; work boat under 26 ft.; transfer machine.	32.41	20.50 + a
Group 9: Front end loader (under 3 cubic yards), skid steer loader regardless of attachments, (Bobcat or Similar): forklift, power chipper; landscape equipment (including Hydroseeder).	31.98	20.50 + a

As of: **Thursday, November 15, 2012**

Project: Rehabilitation Of Salt Sheds

Group 10: Vibratory hammer; ice machine; diesel and air, hammer, etc.	29.94	20.50 + a
Group 11: Conveyor, earth roller, power pavement breaker (whiphammer), robot demolition equipment.	29.94	20.50 + a
Group 12: Wellpoint operator.	29.88	20.50 + a
Group 13: Compressor battery operator.	29.30	20.50 + a
Group 14: Elevator operator; tow motor operator (solid tire no rough terrain).	28.16	20.50 + a
Group 15: Generator Operator; Compressor Operator; Pump Operator; Welding Machine Operator; Heater Operator.	27.75	20.50 + a

As of: **Thursday, November 15, 2012**

Project: Rehabilitation Of Salt Sheds

Group 16: Maintenance Engineer/Oiler.	27.10	20.50 + a
Group 17: Portable asphalt plant operator; portable crusher plant operator; portable concrete plant operator.	31.41	20.50 + a
Group 18: Power safety boat; vacuum truck; zim mixer; sweeper; (Minimum for any job requiring a CDL license).	28.99	20.50 + a

------PAINTERS (Including Drywall Finishing)------

10a) Brush and Roller	30.22	16.90
10b) Taping Only/Drywall Finishing	30.97	16.90

As of: **Thursday, November 15, 2012**

10c) Paperhanger and Red Label	30.72	16.90
10e) Blast and Spray	33.22	16.90
11) Plumber (excluding HVAC pipe installation) (Trade License required: P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2)	38.67	25.56
12) Well Digger, Pile Testing Machine	33.01	19.40 + a
13) Roofer (composition)	31.40	17.14
14) Roofer (slate & tile)	31.90	17.14

Project: Rehabilitation Of Salt Sheds

15) Sheetmetal Worker (Trade License required for HVAC and Ductwork: SM-1,SM-2,SM-3,SM-4,SM-5,SM-6)	33.21	30.56
16) Pipefitter (Including HVAC work) (Trade License required: S-1,2,3,4,5,6,7,8 B-1,2,3,4 D-1,2,3,4, G-1, G-2, G-8 & G-9)	38.67	25.56

------TRUCK DRIVERS------

17a) 2 Axle	27.88	17.22 + a
17b) 3 Axle, 2 Axle Ready Mix	27.98	17.22 + a
17c) 3 Axle Ready Mix	28.03	17.22 + a

As of: **Thursday, November 15, 2012**

Project: Rehabilitation Of Salt Sheds

17d) 4 Axle, Heavy Duty Trailer up to 40 tons	28.08	17.22 + a
17e) 4 Axle Ready Mix	28.13	17.22 + a
17f) Heavy Duty Trailer (40 Tons and Over)	28.33	17.22 + a
17g) Specialized Earth Moving Equipment (Other Than Conventional Type on-the-Road Trucks and Semi-Trailers, Including Euclids)	28.13	17.22 + a
18) Sprinkler Fitter (Trade License required: F-1,2,3,4)	40.50	16.85 + a
19) Theatrical Stage Journeyman	22.22	6.53

As of: **Thursday, November 15, 2012**

Project: Rehabilitation Of Salt Sheds

Welders: Rate for craft to which welding is incidental.

**Note: Hazardous waste removal work receives additional $1.25 per hour for truck drivers.*

***Note: Hazardous waste premium $3.00 per hour over classified rate*

Crane with 150 ft. boom (including jib) - $1.50 extra
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All subsequent annual adjustments will be posted on our Web Site for contractor access.

As of: **Thursday, November 15, 2012**

Project: Rehabilitation Of Salt Sheds

Effective October 1, 2005 - Public Act 05-50: any person performing the work of any mechanic, laborer, or worker shall be paid prevailing wage

All Person who perform work ON SITE must be paid prevailing wage for the appropriate mechanic, laborer, or worker classification.

All certified payrolls must list the hours worked and wages paid to All Persons who perform work ON SITE regardless of their ownership i.e.: (Owners, Corporate Officers, LLC Members, Independent Contractors, et. al)
Reporting and payment of wages is required regardless of any contractual relationship alleged to exist between the contractor and such person.

~~Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clause (29 CFR 5.5 (a) (1) (ii)).

Please direct any questions which you may have pertaining to classification of work and payment of prevailing wages to the Wage and Workplace Standards Division, telephone (860)263-6790.

As of: **Thursday, November 15, 2012**

Project: Rehabilitation Of Salt Sheds

Minimum Rates and Classifications
for Building Construction

ID# : B 17132

Connecticut Department of Labor
Wage and Workplace Standards Division

By virtue of the authority vested in the Labor Commissioner under provisions of Section 31-53 of the General Statutes of Connecticut, as amended, the following are declared to be the prevailing rates and welfare payments and will apply only where the contract is advertised for bid within 20 days of the date on which the rates are established. Any contractor or subcontractor not obligated by agreement to pay to the welfare and pension fund shall pay this amount to each employee as part of his/her hourly wages.

Project Number:
State#: 172-407

Project Town Thompson
FAP#:

Project: Rehabilitation Of Salt Sheds

CLASSIFICATION	Hourly Rate	Benefits
1a) Asbestos Worker/Insulator (Includes application of insulating materials, protective coverings, coatings, & finishes to all types of mechanical systems; application of firestopping material for wall openings & penetrations in walls, floors, ceilings - Last updated 7/21/11	36.86	25.51
1b) Asbestos/Toxic Waste Removal Laborers: Asbestos removal and encapsulation (except its removal from mechanical systems which are not to be scrapped), toxic waste removers, blasters.**See Laborers Group 7**		
2) Boilermaker	34.65	24.10

As of: **Thursday, November 15, 2012**

Project: Rehabilitation Of Salt Sheds

3a) Bricklayer, Cement Mason, Concrete Finisher (including caulking), Stone Masons	32.50	25.20 + a
3b) Tile Setter	32.94	22.42
3c) Terrazzo Mechanics and Marble Setters	31.69	22.35
3d) Tile, Marble & Terrazzo Finishers	26.25	19.20
3e) Plasterer	32.50	25.20

------LABORERS------

As of: **Thursday, November 15, 2012**

Project: Rehabilitation Of Salt Sheds

4) Group 1: Laborers (common or general), acetylene burners, carpenter tenders, concrete specialists, wrecking laborers, fire watchers.	25.80	16.45
4a) Group 2: Mortar mixers, plaster tender, power buggy operators, powdermen, fireproofer/mixer/nozzleman, fence erector.	26.05	16.45
4b) Group 3: Jackhammer operators, mason tender (brick) and mason tender (cement/concrete)	26.30	16.45
4c) **Group 4: Pipelayers (Installation of water, storm drainage or sewage lines outside of the building line with P6, P7 license) (the pipelayer rate shall apply only to one or two employees of the total crew who primary task is to actually perform the mating of pipe sections) P6 and P7 rate is $26.80	26.05	16.45
4d) Group 5: Air track operators, Sand blasters	26.55	16.45
4e) Group 6: Nuclear toxic waste removers, blasters	28.80	16.45

As of: **Thursday, November 15, 2012**

Project: Rehabilitation Of Salt Sheds

4f) Group 7: Asbestos/lead removal and encapsulation (except it's removal from mechanical systems which are not to be scrapped)	26.80	16.45
4g) Group 8: Bottom men on open air caisson, cylindrical work and boring crew	26.30	16.45
4h) Group 9: Top men on open air caisson, cylindrical work and boring crew	25.80	16.45
4i) Group 10: Traffic Control Signalman	16.00	16.45
5) Carpenter, Acoustical Ceiling Installation, Soft Floor/Carpet Laying, Metal Stud Installation, Form Work and Scaffold Building, Drywall Hanging, Modular-Furniture Systems Installers, Lathers, Piledrivers, Resilient Floor Layers.	29.65	21.00
5a) Millwrights	30.15	21.39

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6) Electrical Worker (including low voltage wiring) (Trade License required: E1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9)	37.10	22.12
7a) Elevator Mechanic (Trade License required: R-1,2,5,6)	45.97	23.535+a+b

-----LINE CONSTRUCTION----

Groundman	23.80	3% + 13.70
Linemen/Cable Splicer	43.28	3% + 13.70
8) Glazier (Trade License required: FG-1,2)	33.78	16.90 + a

9) Ironworker, Ornamental, Reinforcing, Structural, and Precast Concrete Erection	33.50	27.98 + a

----OPERATORS----

Group 1: Crane handling or erecting structural steel or stone, hoisting engineer 2 drums or over, front end loader (7 cubic yards or over); work boat 26 ft. and over. (Trade License Required)	35.50	20.50 + a
Group 2: Cranes (100 ton rate capacity and over); Backhoe/Excavator over 2 cubic yards; Piledriver ($3.00 premium when operator controls hammer). (Trade License Required)	35.18	20.50 + a
Group 3: Excavator; Backhoe/Excavator under 2 cubic yards; Cranes (under 100 ton rated capacity), Grader/Blade; Master Mechanic; Hoisting Engineer (all types of equipment where a drum and cable are used to hoist or drag material regardless of motive power of operation), Rubber Tire Excavator (Drott-1085 or similar);Grader Operator; Bulldozer Fine Grade. (slopes, shaping, laser or GPS, etc.).	34.44	20.50 + a
Group 4: Trenching Machines; Lighter Derrick; Concrete Finishing Machine; CMI Machine or Similar; Koehring Loader (Skooper).	34.05	20.50 + a

Project: Rehabilitation Of Salt Sheds

Group 5: Specialty Railroad Equipment; Asphalt Paver; Asphalt Reclaiming Machine; Line Grinder; Concrete Pumps; Drills with Self Contained Power Units; Boring Machine; Post Hole Digger; Auger; Pounder; Well Digger; Milling Machine (over 24" Mandrell)	33.46	20.50 + a
Group 5 continued: Side Boom; Combination Hoe and Loader; Directional Driller; Pile Testing Machine.	33.46	20.50 + a
Group 6: Front End Loader (3 up to 7 cubic yards); Bulldozer (rough grade dozer).	33.15	20.50 + a
Group 7: Asphalt roller, concrete saws and cutters (ride on types), vermeer concrete cutter, Stump Grinder; Scraper; Snooper; Skidder; Milling Machine (24" and under Mandrell).	32.81	20.50 + a
Group 8: Mechanic, grease truck operator, hydroblaster; barrier mover; power stone spreader; welding; work boat under 26 ft.; transfer machine.	32.41	20.50 + a
Group 9: Front end loader (under 3 cubic yards), skid steer loader regardless of attachments, (Bobcat or Similar): forklift, power chipper; landscape equipment (including Hydroseeder).	31.98	20.50 + a

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Group 10: Vibratory hammer; ice machine; diesel and air, hammer, etc.	29.94	20.50 + a
Group 11: Conveyor, earth roller, power pavement breaker (whiphammer), robot demolition equipment.	29.94	20.50 + a
Group 12: Wellpoint operator.	29.88	20.50 + a
Group 13: Compressor battery operator.	29.30	20.50 + a
Group 14: Elevator operator; tow motor operator (solid tire no rough terrain).	28.16	20.50 + a
Group 15: Generator Operator; Compressor Operator; Pump Operator; Welding Machine Operator; Heater Operator.	27.75	20.50 + a

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Group 16: Maintenance Engineer/Oiler.	27.10	20.50 + a
Group 17: Portable asphalt plant operator; portable crusher plant operator; portable concrete plant operator.	31.41	20.50 + a
Group 18: Power safety boat; vacuum truck; zim mixer; sweeper; (Minimum for any job requiring a CDL license).	28.99	20.50 + a

------PAINTERS (Including Drywall Finishing)------

10a) Brush and Roller	30.22	16.90
10b) Taping Only/Drywall Finishing	30.97	16.90

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10c) Paperhanger and Red Label	30.72	16.90
10e) Blast and Spray	33.22	16.90
11) Plumber (excluding HVAC pipe installation) (Trade License required: P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2)	38.67	25.56
12) Well Digger, Pile Testing Machine	33.01	19.40 + a
13) Roofer (composition)	31.40	17.14
14) Roofer (slate & tile)	31.90	17.14

Project: Rehabilitation Of Salt Sheds

15) Sheetmetal Worker (Trade License required for HVAC and Ductwork: SM-1,SM-2,SM-3,SM-4,SM-5,SM-6)	33.21	30.56
16) Pipefitter (Including HVAC work) (Trade License required: S-1,2,3,4,5,6,7,8 B-1,2,3,4 D-1,2,3,4, G-1, G-2, G-8 & G-9)	38.67	25.56

------TRUCK DRIVERS------

17a) 2 Axle	27.88	17.22 + a
17b) 3 Axle, 2 Axle Ready Mix	27.98	17.22 + a
17c) 3 Axle Ready Mix	28.03	17.22 + a

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17d) 4 Axle, Heavy Duty Trailer up to 40 tons	28.08	17.22 + a
17e) 4 Axle Ready Mix	28.13	17.22 + a
17f) Heavy Duty Trailer (40 Tons and Over)	28.33	17.22 + a
17g) Specialized Earth Moving Equipment (Other Than Conventional Type on-the-Road Trucks and Semi-Trailers, Including Euclids)	28.13	17.22 + a
18) Sprinkler Fitter (Trade License required: F-1,2,3,4)	40.50	16.85 + a
19) Theatrical Stage Journeyman	22.22	6.53

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Welders: Rate for craft to which welding is incidental.

**Note: Hazardous waste removal work receives additional $1.25 per hour for truck drivers.*

***Note: Hazardous waste premium $3.00 per hour over classified rate*

Crane with 150 ft. boom (including jib) - $1.50 extra
Crane with 200 ft. boom (including jib) - $2.50 extra
Crane with 250 ft. boom (including jib) - $5.00 extra
Crane with 300 ft. boom (including jib) - $7.00 extra
Crane with 400 ft. boom (including jib) - $10.00 extra

All classifications that indicate a percentage of the fringe benefits must be calculated at the percentage rate times the "base hourly rate".

Apprentices duly registered under the Commissioner of Labor's regulations on "Work Training Standards for Apprenticeship and Training Programs" Section 31-51-d-1 to 12, are allowed to be paid the appropriate percentage of the prevailing journeymen hourly base and the full fringe benefit rate, providing the work site ratio shall not be less than one full-time journeyperson instructing and supervising the work of each apprentice in a specific trade.

The Prevailing wage rates applicable to this project are subject to annual adjustments each July 1st for the duration of the project.

Each contractor shall pay the annual adjusted prevailing wage rate that is in effect each July 1st, as posted by the Department of Labor.

It is the contractor's responsibility to obtain the annual adjusted prevailing wage rate increases directly from the Department of Labor's website.

The annual adjustments will be posted on the Department of Labor's Web page: www.ct.gov/dol

The Department of Labor will continue to issue the initial prevailing wage rate schedule to the Contracting Agency for the project.

All subsequent annual adjustments will be posted on our Web Site for contractor access.

As of: **Thursday, November 15, 2012**

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Effective October 1, 2005 - Public Act 05-50: any person performing the work of any mechanic, laborer, or worker shall be paid prevailing wage

All Person who perform work ON SITE must be paid prevailing wage for the appropriate mechanic, laborer, or worker classification.

All certified payrolls must list the hours worked and wages paid to All Persons who perform work ON SITE regardless of their ownership i.e.: (Owners, Corporate Officers, LLC Members, Independent Contractors, et. al)
Reporting and payment of wages is required regardless of any contractual relationship alleged to exist between the contractor and such person.

~~Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clause (29 CFR 5.5 (a) (1) (ii)).

Please direct any questions which you may have pertaining to classification of work and payment of prevailing wages to the Wage and Workplace Standards Division, telephone (860)263-6790.

As of: **Thursday, November 15, 2012**

Connecticut Department of Labor
Wage and Workplace Standards Division
FOOTNOTES

Please Note: If the "Benefits" listed on the schedule for the following occupations includes a letter(s) (+ a or + a+b for instance), refer to the information below.

Benefits to be paid at the appropriate prevailing wage rate for the listed occupation.

If the "Benefits" section for the occupation lists only a dollar amount, disregard the information below.

Bricklayers, Cement Masons, Cement Finishers, Concrete Finishers, Stone Masons
(Building Construction) and
(Residential- Hartford, Middlesex, New Haven, New London and Tolland Counties)

a. Paid Holiday: Employees shall receive 4 hours for Christmas Eve holiday provided the employee works the regularly scheduled day before and after the holiday. Employers may schedule work on Christmas Eve and employees shall receive pay for actual hours worked in addition to holiday pay.

Elevator Constructors: Mechanics

a. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day, Christmas Day, plus the Friday after Thanksgiving.

b. Vacation: Employer contributes 8% of basic hourly rate for 5 years or more of service or 6% of basic hourly rate for 6 months to 5 years of service as vacation pay credit.

Glaziers

a. Paid Holidays: Labor Day and Christmas Day.

Power Equipment Operators
(Heavy and Highway Construction & Building Construction)

a. Paid Holidays: New Year's Day, Good Friday, Memorial day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day, provided the employee works 3 days during the week in which the holiday falls, if scheduled, and if scheduled, the working day before and the working day after the holiday. Holidays falling on Saturday may be observed on Saturday, or if the employer so elects, on the preceding Friday.

Ironworkers

a. Paid Holiday: Labor Day provided employee has been on the payroll for the 5 consecutive work days prior to Labor Day.

Laborers (Tunnel Construction)

a. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day. No employee shall be eligible for holiday pay when he fails, without cause, to work the regular work day preceding the holiday or the regular work day following the holiday.

Roofers

a. Paid Holidays: July 4th, Labor Day, and Christmas Day provided the employee is employed 15 days prior to the holiday.

Sprinkler Fitters

a. Paid Holidays: Memorial Day, July 4th, Labor Day, Thanksgiving Day and Christmas Day, provided the employee has been in the employment of a contractor 20 working days prior to any such paid holiday.

Truck Drivers

(Heavy and Highway Construction & Building Construction)

a. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas day, and Good Friday, provided the employee has at least 31 calendar days of service and works the last scheduled day before and the first scheduled day after the holiday, unless excused.

Information Bulletin
Occupational Classifications

The Connecticut Department of Labor has the responsibility to properly determine "job classification" on prevailing wage projects covered under C.G.S. Section 31-53.

Note: This information is intended to provide a sample of some occupational classifications for guidance purposes only. It is not an all-inclusive list of each occupation's duties. This list is being provided only to highlight some areas where a contractor may be unclear regarding the proper classification.

Below are additional clarifications of specific job duties performed for certain classifications:

- **ASBESTOS WORKERS**

  Applies all insulating materials, protective coverings, coatings and finishes to all types of mechanical systems.

- **ASBESTOS INSULATOR**

  Handle, install apply, fabricate, distribute, prepare, alter, repair, dismantle, heat and frost insulation, including penetration and fire stopping work on all penetration fire stop systems.

- **BOILERMAKERS**

  Erects hydro plants, incomplete vessels, steel stacks, storage tanks for water, fuel, etc. Builds incomplete boilers, repairs heat exchanges and steam generators.

- **BRICKLAYERS, CEMENT MASONS, CEMENT FINISHERS, MARBLE MASONS, PLASTERERS, STONE MASONS, PLASTERERS. STONE MASONS, TERRAZZO WORKERS, TILE SETTERS**

  Lays building materials such as brick, structural tile and concrete cinder, glass, gypsum, terra cotta block. Cuts, tools and sets marble, sets stone, finishes concrete, applies decorative steel, aluminum and plastic tile, applies cements, sand, pigment and marble chips to floors, stairways, etc.

- **CARPENTERS, MILLWRIGHTS. PILEDRIVERMEN. LATHERS. RESILEINT FLOOR LAYERS, DOCK BUILDERS, DIKERS, DIVER TENDERS**

  Constructs, erects, installs and repairs structures and fixtures of wood, plywood and wallboard. Installs, assembles, dismantles, moves industrial machinery. Drives piling into ground to provide foundations for structures such as buildings and bridges, retaining walls for earth embankments, such as cofferdams. Fastens wooden, metal or rockboard lath to walls, ceilings and partitions of buildings, acoustical tile layer, concrete form builder. Applies firestopping materials on fire resistive joint systems only. Installation of curtain/window walls only where attached to wood or metal studs. Installation of insulated material of all types whether blown, nailed or attached in other ways to walls, ceilings and floors of buildings. Assembly and installation of modular furniture/furniture systems. Free-standing furniture is not covered. This includes free standing: student chairs, study top desks, book box desks, computer furniture, dictionary stand, atlas stand, wood shelving, two-position information access station, file cabinets, storage cabinets, tables, etc.

- **CLEANING LABORER**

  The clean up of any construction debris and the general cleaning, including sweeping, wash down, mopping, wiping of the construction facility, washing, polishing, dusting, etc., prior to the issuance of a certificate of occupancy falls under the *Labor classification.*

- **DELIVERY PERSONNEL**

  If delivery of supplies/building materials is to one common point and stockpiled there, prevailing wages are not required. If the delivery personnel are involved in the distribution of the material to multiple locations within the construction site then they would have to be paid prevailing wages for the type of work performed: laborer, equipment operator, electrician, ironworker, plumber, etc.

  An example of this would be where delivery of drywall is made to a building and the delivery personnel distribute the drywall from one "stockpile" location to further sub-locations on each floor. Distribution of material around a construction site is the job of a laborer/tradesman and not a delivery personnel.

- **ELECTRICIANS**

  Install, erect, maintenance, alteration or repair of any wire, cable, conduit, etc., which generates, transforms, transmits or uses electrical energy for light, heat, power or other purposes, including the Installation or maintenance of telecommunication, LAN wiring or computer equipment, and low voltage wiring. ***License required per Connecticut General Statutes: E-1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9.**

- **ELEVATOR CONSTRUCTORS**

  Install, erect, maintenance and repair of all types of elevators, escalators, dumb waiters and moving walks. ***License required by Connecticut General Statutes: R-1,2,5,6.**

- **FORK LIFT OPERATOR**

  Laborers Group 4) Mason Tenders - operates forklift solely to assist a mason to a maximum height of nine (9) feet only.

  Power Equipment Operator Group 9 - operates forklift to assist any trade, and to assist a mason to a height over nine (9) feet.

- **GLAZIERS**

  Glazing wood and metal sash, doors, partitions, and 2 story aluminum storefronts. Installs glass windows, skylights, store fronts and display cases or surfaces such as building fronts, interior walls, ceilings and table tops and metal store fronts. Installation of aluminum window walls and curtain walls is the "joint" work of glaziers and ironworkers which requires either a blended rate or equal composite workforce.

- **IRONWORKERS**

  Erection, installation and placement of structural steel, precast concrete, miscellaneous iron, ornamental iron, metal curtain wall, rigging and reinforcing steel. Handling, sorting, and installation of reinforcing steel (rebar). Metal bridge rail (traffic), metal bridge handrail, and decorative security fence installation. Installation of aluminum window walls and curtain walls is the "joint" work of glaziers and ironworkers which requires either a blended rate or equal composite workforce. Insulated metal and insulated composite panels are still installed by the Ironworker.

- **INSULATOR**

  Installing fire stopping systems/materials for "Penetration Firestop Systems": transit to cables, electrical conduits, insulated pipes, sprinkler pipe penetrations, ductwork behind radiation, electrical cable trays, fire rated pipe penetrations, natural polypropylene, HVAC ducts, plumbing bare metal, telephone and communication wires, and boiler room ceilings. Past practice using the applicable licensed trades, Plumber, Sheet Metal, Sprinkler Fitter, and Electrician, is not inconsistent with the Insulator classification and would be permitted.

- **LABORERS**

  Acetylene burners, asphalt rakers, chain saw operators, concrete and power buggy operator, concrete saw operator, fence and guard rail erector (except metal bridge rail (traffic), metal bridge handrail, and decorative security fence installation.), hand operated concrete vibrator operator, mason tenders, pipelayers (installation of storm drainage or sewage lines on the street only), pneumatic drill operator, pneumatic gas and electric drill operator, powermen and wagon drill operator, air track operator, block paver, curb setters, blasters, concrete spreaders.

- **PAINTERS**

  Maintenance, preparation, cleaning, blasting (water and sand, etc.), painting or application of any protective coatings of every description on all bridges and appurtenances of highways, roadways, and railroads. Painting, decorating, hardwood finishing, paper hanging, sign writing, scenic art work and drywall hhg for any and all types of building and residential work.

- **LEAD PAINT REMOVAL**

  Painter's Rate
  1. Removal of lead paint from bridges.
  2. Removal of lead paint as preparation of any surface to be repainted.
  3. Where removal is on a Demolition project prior to reconstruction.

  Laborer's Rate
  1. Removal of lead paint from any surface NOT to be repainted.
  2. Where removal is on a *TOTAL* Demolition project only.

- **PLUMBERS AND PIPEFITTERS**

  Installation, repair, replacement, alteration or maintenance of all plumbing, heating, cooling and piping. ***License required per Connecticut General Statutes: P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2 S-1,2,3,4,5,6,7,8 B-1,2,3,4 D-1,2,3,4.***

- **POWER EQUIPMENT OPERATORS**

  Operates several types of power construction equipment such as compressors, pumps, hoists, derricks, cranes, shovels, tractors, scrapers or motor graders, etc. Repairs and maintains equipment. ***License required, crane operators only, per Connecticut General Statutes.**

- **ROOFERS**

  Covers roofs with composition shingles or sheets, wood shingles, slate or asphalt and gravel to waterproof roofs, including preparation of surface. (tear-off and/or removal of any type of roofing and/or clean-up of any and all areas where a roof is to be relaid)

- **SHEETMETAL WORKERS**

  Fabricate, assembles, installs and repairs sheetmetal products and equipment in such areas as ventilation, air-conditioning, warm air heating, restaurant equipment, architectural sheet metal work, sheetmetal roofing, and aluminum gutters. Fabrication, handling, assembling, erecting, altering, repairing, etc. of coated metal material panels and composite metal material panels when used on building exteriors and interiors as soffits, facia, louvers, partitions, wall panel siding, canopies, cornice, column covers, awnings, beam covers, cladding, sun shades, lighting troughs, spires, ornamental roofing, metal ceilings, mansards, copings, ornamental and ventilation hoods, vertical and horizontal siding panels, trim, etc. The sheet metal classification also applies to the vast variety of coated metal material panels and composite metal material panels that have evolved over the years as an alternative to conventional ferrous and non-ferrous metals like steel, iron, tin, copper, brass, bronze, aluminum, etc. Insulated metal and insulated composite panels are still installed by the Iron Worker. Fabrication, handling, assembling, erecting, altering, repairing, etc. of architectural metal roof, standing seam roof, composite metal roof, metal and composite bathroom/toilet partitions, aluminum gutters, metal and composite lockers and shelving, kitchen equipment, and walk-in coolers.

- **SPRINKLER FITTERS**

  Installation, alteration, maintenance and repair of fire protection sprinkler systems. ***License required per Connecticut General Statutes: F-1,2,3,4.**

- **TILE MARBLE AND TERRAZZO FINISHERS**

  Assists and tends the tile setter, marble mason and terrazzo worker in the performance of their duties.

- **TRUCK DRIVERS**

Definitions:

1) "Site of the work" (29 Code of Federal Regulations (CFR) 5.2(l)(b) is the physical place or places where the building or work called for in the contract will remain and any other site where a significant portion of the building or work is constructed, provided that such site is established specifically for the performance of the contact or project;

(a) Except as provided in paragraph (l) (3) of this section, job headquarters, tool yards, batch plants, borrow pits, etc. are part of the "site of the work"; provided they are dedicated exclusively, or nearly so, to the performance of the contract or project, and provided they are adjacent to "the site of work" as defined in paragraph (e)(1) of this section;

(b) Not included in the "site of the work" are permanent home offices, branch plant establishments, fabrication plants, tool yards etc, of a contractor or subcontractor whose location and continuance in operation are determined wholly without regard to a particular State or political subdivision contract or uncertain and indefinite periods of time involved of a few seconds or minutes duration and where the failure to count such time is due to consideration justified by industrial realities (29 CFR 785.47)

2) "Engaged to wait" is waiting time that belongs to and is controlled by the employer which is an integral part of the job and is therefore compensable as hours worked. (29 CFR 785.15)

3) "Waiting to be engaged" is waiting time that an employee can use effectively for their own purpose and is not compensable as hours worked. (29 CFR 785.16)

4) "De Minimus" is a rule that recognizes that unsubstantial or insignificant periods of time which cannot as a practical administrative matter be precisely recorded for payroll purposes, may be disregarded. This rule applies only where there are uncertain and indefinite periods of time involved of a short duration and where the failure to count such time is due to consideration justified by worksite realities. For example, with respect to truck drivers on prevailing wage sites, this is typically less than 15 minutes at a time.

Coverage of Truck Drivers on State or Political subdivision Prevailing Wage Projects

Truck drivers <u>are covered</u> for payroll purposes under the following conditions:

- Truck Drivers for time spent working on the site of the work.

- Truck Drivers for time spent loading and/or unloading materials and supplies on the site of the work, if such time is not de minimus

- Truck drivers transporting materials or supplies between a facility that is deemed part of the site of the work and the actual construction site.

- Truck drivers transporting portions of the building or work between a site established specifically for the performance of the contract or project where a significant portion of such building or work is constructed and the physical places where the building or work outlined in the contract will remain.

For example: Truck drivers delivering asphalt are covered under prevailing wage while" engaged to wait" on the site and when directly involved in the paving operation, provided the total time is not "de minimus"

Truck Drivers <u>are not</u> covered in the following instances:

- Material delivery truck drivers while off "the site of the work"

- Truck Drivers traveling between a prevailing wage job and a commercial supply facility while they are off the "site of the work"

- Truck drivers whose time spent on the "site of the work" is de minimus, such as under 15 minutes at a time, merely to drop off materials or supplies, including asphalt.

These guidelines are similar to U.S. Labor Department policies. The application of these guidelines may be subject to review based on factual considerations on a case by case basis.

For example:

- Material men and deliverymen are not covered under prevailing wage as long as they are not directly involved in the construction process. If, they unload the material, they would then be covered by prevailing wage for the classification they are performing work in: laborer, equipment operator, etc.
- Hauling material off site is not covered provided they are not dumping it at a location outlined above.
- Driving a truck on site and moving equipment or materials on site would be considered covered work, as this is part of the construction process.

Any questions regarding the proper classification should be directed to:
Public Contract Compliance Unit
Wage and Workplace Standards Division
Connecticut Department of Labor
200 Folly Brook Blvd, Wethersfield, CT 06109
(860) 263-6543

Statute 31-55a

Last Updated: June 02, 2008

- Special Notice -

To All State and Political Subdivisions,Their Agents, and Contractors

Connecticut General Statute 31-55a - Annual adjustments to wage rates by contractors doing state work.

Each contractor that is awarded a contract on or after October 1, 2002, for (1) the construction of a state highway or bridge that falls under the provisions of section 31-54 of the general statutes, or (2) the construction, remodeling, refinishing, refurbishing, rehabilitation, alteration or repair of any public works project that falls under the provisions of section 31-53 of the general statutes shall contact the Labor Commissioner on or before July first of each year, for the duration of such contract, to ascertain the prevailing rate of wages on an hourly basis and the amount of payment or contributions paid or payable on behalf of each mechanic, laborer or worker employed upon the work contracted to be done, and shall make any necessary adjustments to such prevailing rate of wages and such payment or contributions paid or payable on behalf of each such employee, effective each July first.

- The prevailing wage rates applicable to any contract or subcontract awarded on or after October 1, 2002 are subject to annual adjustments each July 1st for the duration of any project which was originally advertised for bids on or after October 1, 2002.
- Each contractor affected by the above requirement shall pay the annual adjusted prevailing wage rate that is in effect each July 1st, as posted by the Department of Labor.
- It is the ***contractor's*** responsibility to obtain the annual adjusted prevailing wage rate increases directly from the Department of Labor's Web Site. The annual adjustments will be posted on the Department of Labor Web page: www.ctdol.state.ct.us. For those without internet access, please contact the division listed below.
- The Department of Labor will continue to issue the initial prevailing wage rate schedule to the Contracting Agency for the project. All subsequent annual adjustments will be posted on our Web Site for contractor access.

Any questions should be directed to the Contract Compliance Unit, Wage and Workplace

Standards Division, Connecticut Department of Labor, 200 Folly Brook Blvd., Wethersfield, CT 06109 at (860)263-6790.

Workplace Laws

Published by the Connecticut Department of Labor, Project Management Office

November 29, 2006

Notice

To All Mason Contractors and Interested Parties Regarding Construction Pursuant to Section 31-53 of the Connecticut General Statutes (Prevailing Wage)

The Connecticut Labor Department Wage and Workplace Standards Division is empowered to enforce the prevailing wage rates on projects covered by the above referenced statute.

Over the past few years the Division has withheld enforcement of the rate in effect for workers who operate a forklift on a prevailing wage rate project due to a potential jurisdictional dispute.

The rate listed in the schedules and in our Occupational Bulletin (see enclosed) has been as follows:

Forklift Operator:

- **Laborers (Group 4) Mason Tenders -** operates forklift solely to assist a mason to a maximum height of nine feet only.

- **Power Equipment Operator (Group 9) -** operates forklift to assist any trade and to assist a mason to a height over nine feet.

The U.S. Labor Department conducted a survey of rates in Connecticut but it has not been published and the rate in effect remains as outlined in the above Occupational Bulletin.

Since this is a classification matter and not one of jurisdiction, effective January 1, 2007 the Connecticut Labor Department will enforce the rate on each schedule in accordance with our statutory authority.

Your cooperation in filing appropriate and accurate certified payrolls is appreciated.

Informational Bulletin

THE 10-HOUR OSHA CONSTRUCTION SAFETY AND HEALTH COURSE

(applicable to public building contracts entered into *on or after July 1, 2007,* where the total cost of all work to be performed is at least $100,000)

(1) This requirement was created by Public Act No. 06-175, which is codified in Section 31-53b of the Connecticut General Statutes (pertaining to the prevailing wage statutes);

(2) The course is required for public building construction contracts (projects funded in whole or in part by the state or any political subdivision of the state) entered into on or after July 1, 2007;

(3) It is required of private employees (not state or municipal employees) and apprentices who perform manual labor for a general contractor or subcontractor on a public building project where the total cost of all work to be performed is at least $100,000;

(4) The ten-hour construction course pertains to the ten-hour Outreach Course conducted in accordance with federal OSHA Training Institute standards, and, for telecommunications workers, a ten-hour training course conducted in accordance with federal OSHA standard, 29 CFR 1910.268;

(5) The internet website for the federal OSHA Training Institute is http://www.osha.gov/fso/ote/training/edcenters/fact_sheet.html;

(6) The statutory language leaves it to the contractor and its employees to determine who pays for the cost of the ten-hour Outreach Course;

(7) Within 30 days of receiving a contract award, a general contractor must furnish proof to the Labor Commissioner that all employees and apprentices performing manual labor on the project will have completed such a course;

(8) Proof of completion may be demonstrated through either: (a) the presentation of a *bona fide* student course completion card issued by the federal OSHA Training Institute; *or* (2) the presentation of documentation provided to an employee by a trainer certified by the Institute pending the actual issuance of the completion card;

(9) Any card with an issuance date more than 5 years prior to the commencement date of the construction project shall not constitute proof of compliance;

(10) Each employer shall affix a copy of the construction safety course completion card to the certified payroll submitted to the contracting agency in accordance with Conn. Gen. Stat. § 31-53(f) on which such employee's name first appears;

(11) Any employee found to be in non-compliance shall be subject to removal from the worksite if such employee does not provide satisfactory proof of course completion to the Labor Commissioner by the fifteenth day after the date the employee is determined to be in noncompliance;

(12) Any such employee who is determined to be in noncompliance may continue to work on a public building construction project for a maximum of fourteen consecutive calendar days while bringing his or her status into compliance;

(13) The Labor Commissioner may make complaint to the prosecuting authorities regarding any employer or agent of the employer, or officer or agent of the corporation who files a false certified payroll with respect to the status of an employee who is performing manual labor on a public building construction project;

(14) The statute provides the minimum standards required for the completion of a safety course by manual laborers on public construction contracts; any contractor can exceed these minimum requirements; and

(15) Regulations clarifying the statute are currently in the regulatory process, and shall be posted on the CTDOL website as soon as they are adopted in final form.

(16) Any questions regarding this statute may be directed to the Wage and Workplace Standards Division of the Connecticut Labor Department via the internet website of http://www.ctdol.state.ct.us/wgwkstnd/wgemenu.htm; or by telephone at (860)263-6790.

THE ABOVE INFORMATION IS PROVIDED EXCLUSIVELY AS AN EDUCATIONAL RESOURCE, AND IS NOT INTENDED AS A SUBSTITUTE FOR LEGAL INTERPRETATIONS WHICH MAY ULTMATELY ARISE CONCERNIG THE CONSTRUCTION OF THE STATUTE OR THE REGULATIONS.

Sec. 31-53b. **Construction safety and health course**. **Proof of completion required for employees on public building projects. Enforcement. Regulations**. (a) Each contract entered into on or after July 1, 2007, for the construction, remodeling, refinishing, refurbishing, rehabilitation, alteration or repair of any public building project by the state or any of its agents, or by an political subdivision of the state or any of its agents, where the total cost of all work to be performed by all contractors and subcontractors in connection with the contract is at least one hundred thousand dollars, shall contain a provision requiring that, not later than thirty days after the date such contract is awarded, each contractor furnish proof to the Labor Commissioner that all employees performing manual labor on or in such public building, pursuant to such contract, have completed a course of at least ten hours in duration in construction safety and health approved by the federal Occupational Safety and Health Administration or, in the case of telecommunications employees, have completed at least ten hours of training in accordance with 29 CFR 1910.268.

(b) Any employee required to complete a construction safety and health course required under subsection (a) of this section who has not completed the course shall be subject to removal from the worksite if the employee does not provide documentation of having completed such course by the fifteenth day after the date the employee is found to be in noncompliance. The Labor Commissioner or said commissioner's designee shall enforce this section.

(c) Not later than January 1, 2007, the Labor Commissioner shall adopt regulations, in accordance with the provisions of chapter 54, to implement the provisions of subsections (a) and (b) of this section. Such regulations shall require that the ten-hour construction safety and health courses required under subsection (a) of this section be conducted in accordance with federal Occupational Safety and Health Administration Training Institute standards, or in accordance with 29 CFR 1910.268, as appropriate. The Labor Commissioner shall accept as sufficient proof of compliance with the provisions of subsection (a) or (b) of this section a student course completion card issued by the federal Occupational Safety and Health Administration Training Institute, or such other proof of compliance said commissioner deems appropriate, dated no earlier than five years before the commencement date of such public works project.

(d) For the purposes of this section, "public building" means a structure, paid for in whole or in part with state funds, within a roof and within exterior walls or fire walls, designed for the housing, shelter, enclosure and support or employment of people, animals or property of any kind, including, but not limited to, sewage treatment plants and water treatment plants, "Public building" does not include site work, roads or bridges, rail lines, parking lots or underground water, sewer or drainage systems including pump houses or other utility systems.

CONNECTICUT DEPARTMENT OF LABOR
WAGE AND WORKPLACE STANDARDS DIVISION

CONTRACTORS WAGE CERTIFICATION FORM

I,_____of _____
Officer, Owner, Authorized Rep. Company Name

do hereby certify that the _____
Company Name

_____
Street

_____
City

and all of its subcontractors will pay all workers on the

_____
Project Name and Number

_____
Street and City

the wages as listed in the schedule of prevailing rates required for such project (a copy of which is attached hereto).

_____
Signed

Subscribed and sworn to before me this _____ day of _____,

_____
Notary Public

☞ Return to:

Connecticut Department of Labor
Wage & Workplace Standards Division
200 Folly Brook Blvd.
Wethersfield, CT 06109