PROJECT MANUAL

NAUGATUCK PEDESTRIAN GREENWAY
PHASE I

FINAL PLANS FOR REVIEW SUBMISSION

Borough of Naugatuck

UNDERTAKEN IN COOPERATION WITH THE STATE OF CONNECTICUT

DANNEL P. MALLOY - GOVERNOR

STATE PROJECT #87-143
FAP# PEDS(090)

Consultant
Milone & MacBroom, Inc.
99 Realty Drive
Cheshire, CT 06410

MMI #2129-11

January 5, 2012

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Borough of Naugatuck

LEGAL NOTICE

REQUEST FOR BIDS

Sealed bids for the construction of the following project will be received by the Purchasing Office, Borough of Naugatuck at the Naugatuck City Hall located at 229 Church Street, Naugatuck, CT 06770 until **February 6, 2012 at 11:00 A.M.** local time after which no additional bids will be accepted. No exceptions. Immediately following, the bids will be publicly opened and read.

Naugatuck Pedestrian Greenway Phase I

State Project No. 87-143
FAP# PEDS(090)

The project consists of improvements and additions to existing pedestrian facilities to begin to create a comprehensive greenway along the Naugatuck River. Improvements will begin at Maple Street adjacent to the Route 8 exit ramp and continue to Linden Park and the General Pulaski pedestrian bridge. This project requires a ten percent (10%) DBE set aside. Form 816 Standard Specifications may be purchased at the ConnDOT Plans Sales Office, 160 Pascone Place, Newington, Connecticut. All proposals must be on the form furnished with the Contract Documents.

The minimum rates to be paid labor of the various classifications shall be in accordance with the current schedule of wages established by the State Labor Commissioner as provided in the General Statutes of Connecticut, as revised. The Contract Wage Certification Form is to be submitted to the Labor Commissioner before the award of the contract.

Plans and Specifications will be available on January 5, 2012 and may be examined and/or procured at the Purchasing Office, Naugatuck City Hall located at 229 Church Street, Naugatuck, CT 06770. Copies of the Contract Documents may be purchased for Two Hundred and Fifty Dollars ($250.00) (non-refundable) for each set.

Specifications can also be obtained at no cost from the Borough of Naugatuck web site http://www.naugatuck-ct.gov under the bids section. All firms obtaining plans and specifications must submit contact information by e-mail to whozer@naugatuck-ct.gov Contact information must be submitted seven days in advance of the bid opening to be considered.

A mandatory Pre-Bid Meeting will be held on Tuesday, January 17, 2012 and will commence at the Office of the Borough Engineer,, Naugatuck City Hall, at 2:00 P.M. local time.

Bids must be accompanied by a certified check or Bid Bond in writing on forms provided by the Borough of Naugatuck in the amount of at least one-third (33-1/3%) of the amount of the Bid and payable to the order of the Borough of Naugatuck. The successful Bidder will be required to furnish and pay for a Performance Bond and a Payment Bond in the amount of one hundred percent (100%) of the Contract price.

The right is reserved by the Borough of Naugatuck to reject any or all Bids, to waive any informalities or defects in Bids, and to make such time extensions as may be necessary in order to review and compare Bids, to obtain such supplemental information as may be necessary to review Bids and to accept Bid(s) that, in the judgment of the Borough of Naugatuck, will be in the Borough's best interest.

Date: January 5, 2012

Borough of Naugatuck, Connecticut

INFORMATION FOR BIDDERS

Borough of Naugatuck

Naugatuck Pedestrian Greenway Phase 1

1. Proposals Received

Sealed proposals for the Naugatuck Pedestrian Greenway Phase 1 will be received by the Purchasing Office, Borough of Naugatuck, 229 Church Street, Naugatuck, CT 06770 until **February 6, 2012 at 11:00 A.M**. local time. Immediately following, the bids will be publicly opened and read.

2. Location and Description of Work

This project is for sidewalk and pedestrian trail improvements at Maple Street, Linden Park, General Pulaski Pedestrian Bridge, and General Pulaski Walk.

3. Schedule of Construction and Time of Completion

The attention of the Bidder is called to the provisions of the General Requirements, Section K.6, and requiring submittal of a schedule of operations.

The attention of the Bidder is called to the requirements of Article XXX of the Contract that the work be started within ten (10) calendar days of the date of the Notice to Proceed and that all work, including cleanup and removal of all tools and equipment, be completed within one hundred eighty (180) consecutive calendar days.

The Bidder's attention is especially directed to Article XXXII of the Contract "Damages for Failure to Complete on Time".

4. Plans and Specifications

Copies of the Plans and Specifications may be seen and obtained at the Purchasing Office, Borough of Naugatuck, 229 Church Street, Naugatuck, CT 06770.

Specifications can also be obtained at no cost from the Borough of Naugatuck web site http://www.naugatuck-ct.gov under the bids section. All firms obtaining plans and specifications must submit contact information by e-mail to whozer@naugatuck-ct.gov Contact information must be submitted seven days in advance of the bid opening to be considered.

The construction contract for the Naugatuck Pedestrian Greenway State Project 87-143, will be entered into by the successful bidder and the Borough of Naugatuck. The State of Connecticut Department of Transportation Standard Specifications for Roads, Bridges and Incidental Construction, Form 816, 2004 along with the contract drawings and supplemental specifications contained herein will detail the general requirements for materials, methods of installation, measurement and basis of payment to be required in this project. Any references to the State of Connecticut, the Department, the commissioner, Engineer, or other terms indicating the State of Connecticut and her agents as party to the contract shall for this project mean the Borough of Naugatuck and her designated agents or employees.

Where insurance is required to be carried in the name of the State of Connecticut and the State of Connecticut is to be held harmless, this shall be done in the name of the Borough

of Naugatuck and the Borough of Naugatuck shall be held harmless.

All requirements for material testing, certificates of the compliance or material certifications shall be done as if this were a contract being entered into with the State of Connecticut.

It is the intent of this contract to maintain all standard requirements of Form 816 without attempting to redefine every term within the 816 to the "Borough of Naugatuck".

The bidder shall, therefore, be aware that the Borough of Naugatuck and her agents shall inspect and administrate this contract, make contract interpretations, determine the acceptability of the work and approve requests for payments. The Contractor shall be responsible for the requirements stated in Form 816 and in the construction drawings.

5. Addenda and Interpretations

No interpretations of the meaning of the Plans, Specifications, or other pre-bid documents will be made to any Bidder orally.

Every request for such interpretation shall be in writing, addressed to James Stewart, Borough of Naugatuck Department of Public Works, 246 Rubber Avenue, Naugatuck, CT 06770. To be given consideration, such requests must be received at least six (6) days prior to the date fixed for the opening of bids. Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the specifications, which, if issued, will be mailed by certified mail with return receipt requested to all prospective Bidders, at the respective address furnished for such purposes, not later than four (4) days prior to the date fixed for the opening of bids. Failure of any Bidder to receive any such addendum or interpretations shall not relieve such Bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the Contract Documents.

6. Familiarity of the Work

Each Bidder shall fully inform himself prior to bidding as to existing conditions and limitations under which the work is to be performed, and shall include in his bid a sum to cover the cost of items necessary to perform the work as set forth in the Contract Documents. No allowance will be made to a Bidder because of lack of such examination or knowledge. The submission of a bid will be considered as conclusive evidence that the Bidder has made such examination.

Where borings or other exploration data are shown on the Plans or made available to the Bidder, it is understood that such data were obtained in the usual manner, and with reasonable care, and are to be interpreted and used as the Bidder sees fit. There is no expressed or implied agreement that the depths or the character of the material and water levels have been correctly indicated, and the Bidder is cautioned to take into account that condition affecting the work may differ from those indicated.

The Owner assumes no responsibility whatsoever with respect to ascertaining for the Contractor such facts concerning physical characteristics at the site of the project.

The Contractor agrees that he shall make no claim for and has no right to additional payment or extension of time for completion of the work, or any other concessions, because of any interpretations or misunderstanding on his part of this Contract, or because of any failure on his part to fully acquaint himself with all conditions relating to the work. Permission for making borings, test pits, or other investigations of subsurface conditions will be arranged for by the Owner upon receipt of a written request thereof.

7. Soil and Groundwater Conditions

Soil borings have been made along the shoulder of the Route 8 Union City on-ramp. Boring logs and report are included in the contract drawings and project manual.

In bidding on this Contract, each Bidder acknowledges that he has made whatever investigation of subsurface conditions he has deemed necessary for the purpose of bidding

8. Estimate of Work

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

9. Qualification of Bidders

A Bidder shall be a contractor who is experienced in the construction of the projects of this type. The Proposal shall contain adequate proof of the qualifications of the Bidder to perform, in a satisfactory manner and within the time specified, all the work covered by the Plans and Specifications. This proof shall be fully recorded on the pages titled "References", which shall become part of the Proposal.

10. Disqualification of Bidders

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

11. Preparation of Proposals

The Proposal must be made upon the forms contained herein. The blank spaces in the Proposals must be filled in correctly where indicated. The Bidder must state, both in words and in numerals, written or printed in ink, the prices for which he proposes to do each Item of the work contemplated. In case of discrepancy between the words and the numerals, the words shall govern. Ditto marks are not considered writing, or printing, and shall not be used. The Bidder shall sign his Proposal correctly. If an individual makes the Proposal, his name and post office address must be shown. If made by a firm, partnership, or corporation, the Proposal must be signed by an official of the firm, partnership, or corporation authorized to sign contracts, and must show the post office address of the firm, partnership, or corporation.

Each bid must be submitted in a sealed envelope bearing on the outside the name of the Bidder, this address, and name of the project for which the bid is submitted. If forwarded by mail, the sealed envelope containing the bid must be enclosed in another envelope

addressed to: Purchasing Office, Borough of Naugatuck, City Hall, 229 Church Street, Naugatuck, CT 06770.

12. Irregular Proposals

The Borough of Naugatuck reserves the right to reject any proposals if they show any omission, alteration of form, additions not called for, conditional bids, or irregularities of any kind.

13. Proposal Guarantee

No proposal will be considered unless accompanied by a certified check in U.S. dollars, or bid bond using an insurance company licensed to do business in the State of Connecticut in an amount equal to at least one-third (33%) of the amount of the bid and payable to the order of the Borough of Naugatuck, said check or bid bond to be returned to the Bidder unless forfeited as hereinafter stipulated. Such checks or bid bonds will be returned to all bidders within five (5) days after the execution of the Contract and the furnishing of the required security by the successful Bidder.

14. Withdrawal of Proposals

If a Bidder wishes to withdraw his Proposal, he may do so before the time fixed for the opening of bids by communicating his purpose to the office of the Mayor. Upon such notice, the Proposal will be handed to him unopened.

15. Execution of Contract

The party to whom the Contract is awarded, or his authorized representative, will be required to attend at the office of the Mayor, Borough of Naugatuck, with the sureties offered by him, or them, and a current certificate of Corporate good standing issued by the Office of the Secretary of State in which the corporation is incorporated, and execute the Contract within five (5) days from the date of the award. If the party entering into this contract is a corporation, a Corporate Resolution duly executed by the president and Secretary of the Corporation authorizing the Corporation to enter into this Contract shall be provided. In case of his failure or neglect to do so, the Owner may, at its opinion, determine that the Bidder has abandoned the Contract and thereupon the Proposal and acceptance shall be null and void, and bid security accompanying the Proposal shall be forfeited as liquidated damages to the Owner. If the party entering into this contract is a partnership, a partnership resolution duly executed by a majority of the general partners authorizing the partnership to enter into this contract shall be provided.

16. Bonds

The successful Bidder, at the time of the execution of the Contract, shall furnish a Performance Bond in an amount at least equal to one hundred percent (100%) of the Contract prices as security for the faithful performance of this Contract and also a Payment bond in an amount not less than one hundred percent (100%) for the Contract prices as security for the payment of all persons performing labor on the project under this Contract and furnishing materials in connection with this Contract. All Bonds shall be in the forms prescribed by Law or Regulation and be acceptable to the Owner. Surety companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State of Connecticut. Bidder shall provide evidence that Surety Company is licensed to conduct business in the State of Connecticut. All sureties shall be in full force throughout the guarantee period and until the retainage is released.

17. Responsibility of the Contractor

Attention is hereby particularly directed to the provisions of the Contract and Specifications whereby the Contractor shall be responsible for any loss or damage that may happen in the work, or any part thereof, during its progress and also whereby the Contractor shall make good any defects for faults that may occur within one (1) year after date of final estimate. He shall indemnify and save harmless the Owner and Engineer from any damages or costs to which they may be put by reason of injury to the person or property of another resulting from negligence or carelessness in the performance of the work under this Contract.

18. Insurance

Before execution of the Contract, the Bidder will be required to file with the Borough of Naugatuck a certificate of insurance. The certificate, executed by an insurance company satisfactory to the Borough of Naugatuck shall name the Borough of Naugatuck and the State as additional insured parties on the form furnished with these specifications. The form #CON-32 furnished by the "State of Connecticut Department of Transportation", entitled "Certificate of Insurance" is the only acceptable evidence of insurance and shall state that at a minimum, with respect to the contract, the bidder carries insurance in accordance with the requirements and stipulations listed below.

Unless requested otherwise by the Borough of Naugatuck, the Bidder and its insurer shall not assert the defense of governmental immunity in the adjustment of claims or in the defense of any claim or suit brought against the Borough of Naugatuck and the State. The Bidder shall assume and pay all cost and billing for premiums and audit charges earned and payable under the required insurance.

A. Workmen's Compensation Insurance: With respect to all operations the Bidder performs and all those performed for it by subcontractors, the Bidder shall carry workmen's compensation insurance in accordance with the requirements and the laws of the State.

B. Contractor's Public Liability and Property Damage Insurance: With respect to the Project operations the Bidder performs and also those performed for it by subcontractors, the Bidder shall carry regular Contractor's Public Liability Insurance. The insurance shall provide coverage for each accident or occurrence in the amount of $1,000,000for all damages resulting from (1) bodily injury to, or death of, persons and/or (2) injury to or destruction of property. Subject to that limit per accident or occurrence, the policy shall provide a total or aggregate coverage of $2,000,000 for all damages during the policy period.

C. Automobile Liability Insurance: The operation of all motor vehicles, including those hired or borrowed, used in connection with the project, shall be covered by Automobile Liability Insurance. The insurance shall provide coverage for each accident or occurrence in the amount of $1,000,000 for all damages resulting from (1) bodily injury to, or death of, persons and/or (2) injury to or destruction of

property. If an insurance policy shows an aggregate limit as part of the automobile liability coverage, the aggregate limit must be at least $2,000.000.

D. With respect to the project operations the Bidder performs and also those performed for it by subcontractors, the Bidder shall carry for and on behalf of the Borough of Naugatuck, and State, insurance which shall provide coverage for each accident or occurrence in the amount of $1,000,000 for all damages resulting from (1) bodily injury to or death of person and/or (2) injury to or destruction of property. Subject to that limit per accident or occurrence, the policy shall provide a total or aggregate coverage of $2,000,000 for all damages during the policy period.

E. Railroad's Protective Liability Insurance: When the contract involves work on, over or under the right of way of any railroad company, the Bidder shall, with respect to the project operations it performs and also those performed for it by subcontractors, carry Railroad Protective Liability Insurance for and on behalf of the railroad company. The insurance shall provide coverage for each accident and occurrence in the amount of $2,000,000 for all damages resulting from (1) bodily injury to or death of persons and/or (2) injury to or destruction of property. Subject to that limit per accident or occurrence, the policy shall provide a total or aggregate coverage of $6,000,000 for all damages during the policy period.

F. Blasting: When explosives are to be used in the prosecution of the work, the insurance required under paragraphs B, D, and E above shall also contain provisions for protection, in the amounts stated, against damage claims due to such use of explosives.

G. Termination or change of Insurance: Each insurance policy shall be endorsed to provide that the insurance company shall notify the Borough of Naugatuck by certified mail at least thirty (30) days in advance of termination, or any change in the policy. No such change shall be made without prior written approval of the appropriate Official.

H. Claims: Each insurance policy shall state that the insurance company shall agree to investigate and defend the Borough of Naugatuck and State against all damages, even if groundless.

I. Compensation: There shall be no direct compensation allowed the Bidder on account of any premium or other change necessary to take out and keep in effect all insurance or bonds, but the cost thereof shall be considered included in the general cost of the work.

19. Care and Protection of Property

The Contractor shall take particular care to avoid damages to all private property and to private improvements within the Boroughs' right of way. He shall make good any damages to the satisfaction of the Inspector. There shall be no additional compensation for the repair or restoration of private property, or private improvements. within the Boroughs' right of way.

20. Sales Tax

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

21. Compliance with Federal and State Regulations

The Contractor shall be responsible for full compliance with any Federal and/or State laws, regulations and standards, as applicable to any project fully or partially funded by State and/or Federal funding agency. This project is funded, in part, by the State and Federal government.

22. Permits

All licenses and permits for complying with any applicable Federal, State, and Municipal laws, codes and regulations in connection with the prosecution of the work shall be obtained by the Contractor, at no additional cost to the Owner.

23. Sedimentation and Erosion Control Plan

The Contractor shall prepare a sedimentation and erosion control plan for the work if applicable.

24. Contractor's Right to Terminate Work

If the work should be stopped under an order of any court or other public authority, for a consecutive period of not less than thirty (30) days, through no act or fault of the Contractor or of anyone employed by him, then the Contractor may terminate this Contract and recover from the Owner payment for all work executed.

25. Wage Rates

The Bidder's attention is directed to Section 40 of the General Requirements in connection with wage rates.

26. Power of Attorney

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

27. Right to Reject

The Owner reserves the right to reject any or all proposals or to accept any bid, should it deem it to be in the best interest of the Owner.

PROPOSAL FORMS/BID FORMS

NAUGATUCK PEDESTRIAN GREENWAY
PHASE I
Naugatuck, Connecticut

BIDDER'S NAME: _____

PROPOSAL NUMBER:

State Project # 87-143, FAP# PEDS(090)

BASE BID SCHEDULE

ITEM NO.	ITEM/DESCRIPTION	UNIT	QTY	UNIT PRICES BID IN FIGURES	UNIT PRICES BID IN WRITING	AMOUNT IN FIGURES
0201001A	Clearing and Grubbing	LS	LS			
0202002	Earth Excavation	CY	285			
0202101	Rock Excavation	CY	15			
0202447	Cold Milling Removal of Bituminous Concrete	SY	500			
0202451A	Test Pit Excavation	EA	6			
0202512	Cut Concrete Sidewalk	LF	30			
0202513A	Removal of Concrete Sidewalk	SY	60			
0202529	Cut Bituminous Concrete Pavement	LF	800			

ITEM NO.	ITEM/DESCRIPTION	UNIT	QTY	UNIT PRICES BID IN FIGURES	UNIT PRICES BID IN WRITING	AMOUNT IN FIGURES
0202532A	Removal of Bituminous Type Pavement	SY	1,260			
0202540A	Partial Removal of Steel Bin Wall	LS	LS			
0202541A	Removal of Debris at Bridge Pier	LS	LS			
0203001	Structural Excavation - Earth (Complete)	CY	30			
0203101	Structural Excavation - Rock (Complete)	CY	10			
0205001	Trench Excavation 0'-4' Deep	CY	16			
0205002	Rock in Trench Excavation 0'-4' Deep	CY	1			
0209001	Formation of Subgrade	SY	900			
0210100A	Anti-Tracking Pad	SY	250			
0212002	Subbase	CY	250			
0219001	Sedimentation Control System	LF	1,500			

ITEM NO.	ITEM/DESCRIPTION	UNIT	QTY	UNIT PRICES BID IN FIGURES	IN WRITING	AMOUNT IN FIGURES
0219011	Sedimentation Control at Catch Basin	EA	8			
0406005A	Permanent Pavement Repair	SY	15			
0406442	Superpave 0.5" (Entrance Ramp)	Ton	250			
0406444	Superpave 1.0" (Entrance Ramp)	Ton	300			
0507215	Special Type C-L Catch Basin	Ea	1			
0507000	Remove Catch Basin	Ea.	1			
0507601	Manhole (Storm)	Ea.	1			
0601101	Class 'C' Concrete	CY	20			
0601445A	Embankment Wall (Site No. 1)	LS	LS			
0601446A	Embankment Wall (Site No. 2)	LS	LS			
0601651A	Retaining Wall (Site No. 3)	LS	LS			

ITEM NO.	ITEM/DESCRIPTION	UNIT	QTY	UNIT PRICES BID IN FIGURES	UNIT PRICES BID IN WRITING	AMOUNT IN FIGURES
0601652A	Retaining Wall (Site No. 4)	LS	LS			
0602001	Deformed Steel Bars	LB	2,300			
0603061A	Structural Steel (Site No. 1)	LS	LS			
0651001	Bedding Material	CY	6			
0651012	15" R.C. Pipe	LF	20			
0651837	15" C.C.M. Pipe	LF	38			
0811001	Concrete Curb	LF	85			
0815001	Bituminous Concrete Lip Curbing	LF	55			
0821127	Removal of Precast Concrete Barrier Curb	LF	390			
0822017	Temporary Precast Concrete Barrier Curb with Chain Link Fence	LF	40			
0821176	Precast Concrete Barrier Curb (27" X 42")	LF	200			

ITEM NO.	ITEM/DESCRIPTION	UNIT	QTY	UNIT PRICES BID IN FIGURES	UNIT PRICES BID IN WRITING	AMOUNT IN FIGURES
0901003A	Removable Ornamental Steel Bollard	EA	6			
0906202A	Three Rail Wood Fence	LF	145			
0912518A	Remove & Reset Metal Beam Rail	LF	65			
0913000	Remove Chain Link Fence	LF	370			
0914015A	Ornamental Metal Fence (3.5' High)	LF	24			
0914016A	Ornamental Metal Fence (4.5' High)	LF	610			
0914019A	Ornamental Metal Fence (6' High)	LF	165			
0921001	Concrete Sidewalk	SF	775			
0921015A	Unit Paver Sidewalk	SY	210			
0922001	Bituminous Concrete Sidewalk	SY	118			
0922250A	Bituminous Concrete Trail	SY	1,200			

ITEM NO.	ITEM/DESCRIPTION	UNIT	QTY	UNIT PRICES BID IN FIGURES	UNIT PRICES BID IN WRITING	AMOUNT IN FIGURES
0939001A	Sweeping for Dust Control	HR	50			
0944002A	Furnish and Place Topsoil	SY	2,250			
0949000A	Wood Chip Mulch	SY	250			
0949068A	Hemerocallis "Stella D'oro" (Stella D'oro Daylily)	EA	130			
0949085A	Clethra alnifolia 'Hummingbird' (Dwarf Summersweet)	EA	4			
0949231A	Ilex glabra 'Shamrock' (Shamrock Inkberry)	EA	11			
0949255A	Juniperus horizontalis 'Mother Lode' (Mother Lode Juniper)	EA	30			
0949298A	Fothergilla gardenii (Dwarf Fothergilla)	EA	21			
0949398A	Azalea 'Delaware Valley White' (Delaware Valley White Azalea)	EA	6			
0949493A	Ulmus americana 'Princeton' (American Elm)	EA	5			
0949710A	Amerlanchier canadensis (Shadblow)	EA	2			

ITEM NO.	ITEM/DESCRIPTION	UNIT	QTY	UNIT PRICES BID IN FIGURES	UNIT PRICES BID IN WRITING	AMOUNT IN FIGURES
0949756A	Acer saccharum 'Green Mountain' (Sugar Maple)	EA	5			
0949833A	Acer rubrum 'Red Sunset' (Red Maple)	EA	2			
0949850A	Carpinus betulus 'Frans Fontaine' (Frans Fontaine Hornbeam)	EA	3			
0949913A	Betula nigra 'Heritage' (Heritage River Birch)	EA	4			
0950019A	Turf Establishment - Lawn	SY	1,635			
0950029A	Turf Establishment - New England Mix	SY	615			
0952001	Selective Pruning and Thinning	LS	LS			
0952051A	Control & Removal of Invasive Species	SY	400			
0953001	Sod	SY	115			
0969060A	Construction Field Office, Small	Month	6			
0970006A	Traffic Person (Uniformed Officer)	Est.	1	$10,000	Ten thousand dollars	

ITEM NO.	ITEM/DESCRIPTION	UNIT	QTY	UNIT PRICES BID IN FIGURES	UNIT PRICES BID IN WRITING	AMOUNT IN FIGURES
0971001A	Maintenance & Protection of Traffic	LS	LS			
0974000	Removal of Existing Masonry	CF	60			
0975002	Mobilization	LS	LS			
0978002	Traffic Drum	EA	8			
0979003A	Construction Barricade Type III	EA	6			
0980001	Construction Staking	LS	LS			
0981100	42" Traffic Cone	Ea	25			
0992084A	Information Kiosk	EA	1			
0992085A	Information Sign	EA	3			
0992090A	Bench	EA	5			
0992091A	Trash Receptacle	EA	4			

ITEM NO.	ITEM/DESCRIPTION	UNIT	QTY	UNIT PRICES BID IN FIGURES	UNIT PRICES BID IN WRITING	AMOUNT IN FIGURES
0992092A	Bike Rack	EA	3			
0992095A	Gateway Sign	EA	1			
1001001	Trenching and Backfilling	LF	425			
1003892A	Concrete Foundation (provided by CL&P)	EA	1			
1003912A	Remove Concrete Light Standard Base	EA	2			
1003916A	Remove and Relocate Light Standard	EA	2			
1008128	2.5" Polyvinyl Chloride Conduit in Trench	LF	375			
1008215A	2" Rigid Metal Conduit Under Pavement	LF	100			
1010901A	Remove and Relocate Concrete Handhole	EA	1			
1010902	Remove Concrete Handhole	EA	1			
1012031	No.2 Single Conductor	LF	1,125			

ITEM NO.	ITEM/DESCRIPTION	UNIT	QTY	UNIT PRICES BID IN FIGURES	UNIT PRICES BID IN WRITING	AMOUNT IN FIGURES
1015001	No. 8 Bare Copper Grounding Conductor	LF	375			
1015021	3/4" x 10' Ground Rod	EA	1			
1205209	Type DE-9 Delineator	Ea	1			
1206023A	Removal and Relocation of Existing Signs	LS	LS			
1208906A	Sign Face Sheet Aluminum - Bright Wide Angle Retroreflective Sheeting	SF	20			
1210101	4" White Epoxy Resin Pavement Markings	LF	455			
1210102	4" Yellow Epoxy Resin Pavement Markings	LF	705			
1220011A	Construction Signs - Type III Reflective Sheeting	SF	250			
1208928	Sign Face - Sheet Aluminum (Type III Reflective Sheeting)	SF	35			

Base Bid Total (in words)	
_____	$_____
_____	

ADD ALTERNATE #1

ITEM NO.	ITEM/DESCRIPTION	UNIT	QTY	UNIT PRICES BID IN FIGURES	UNIT PRICES BID IN WRITING	AMOUNT IN FIGURES
0063512A	Add Alternate #1 (River Access Area Complete)	LS	LS			

Add Alternate #1 Total (in words)	
_____	$_____
_____	

ADD ALTERNATE #2

ITEM NO.	ITEM/DESCRIPTION	UNIT	QTY	UNIT PRICES BID IN FIGURES	UNIT PRICES BID IN WRITING	AMOUNT IN FIGURES
0063513A	Add Alternate #2 (Tree Planting Complete)	LS	LS			

Add Alternate #2 Total (in words)	
_____	$_____
_____	

ADD ALTERNATE #3

ITEM NO.	ITEM/DESCRIPTION	UNIT	QTY	UNIT PRICES BID IN FIGURES	UNIT PRICES BID IN WRITING	AMOUNT IN FIGURES
0601019A	Chemically Stain Concrete	SF	1,850			
0603253A	Disposal of Lead Debris	BBL	10			
0603444A	Lead Health Protection Program (LHPP)	LS	LS			

ITEM NO.	ITEM/DESCRIPTION	UNIT	QTY	UNIT PRICES BID IN FIGURES	UNIT PRICES BID IN WRITING	AMOUNT IN FIGURES
0603563A	Class I Containment & Collection of Surface Debris (Site No. 1)	LS	LS			
0603923A	Abrasive Blast Cleaning And Field Painting of the Structure (Site No. 1)	LS	LS			
0914013A	Ornamental Metal Fence (2.25' High)	LF	410			
0914050	Removal of Existing Bridge Rail	LF	410			
1002008A	Light Pole and Fixtures (Decorative)	EA	2			
1002101	Light Standard Foundation - Type I	EA	2			
1003595A	Decorative Light Pole and Light Fixture (Bridge)	EA	5			
1008012A	1" Rigid Metal Conduit - Surface	LF	385			
1008212A	1" Rigid Metal Conduit Under Pavement	LF	45			
1015021	3/4" x 10' Ground Rod	EA	2			
1017103A	Service Entrance and Cabinet (100A Service)	LS	LS			

Add Alternate #3 Total (in words)	
_____	$_____
_____	

Bidders must provide a bid for each alternate. If no bid is provided for any of the alternates contained in the bid proposal or if any bid for such an alternate is obviously unbalanced either in excess or below reasonable fair market values, then the entire bid will be considered nonresponsive, and the bid will be rejected.

The award of the Contract will be made to the lowest responsible bidder based on **BASE BID TOTAL**, which may be combined with any combination of Bid Alternate Totals that the Borough determines is in its own best interests to select. By submission of the Bid, each bidder certifies that his bid has been arrived at independently, without consultation, communication, or agreement as to any matter related to this Bid with any other Bidder or with any competitor.

Signature	Date
Print Name	Tel
Corporation Name	Fax
Address	E-mail

PROPOSAL/BID FORM

Borough of Naugatuck

Naugatuck Pedestrian Greenway Phase I

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

The Bidder acknowledges receipt of the following addenda:

Addendum No._____ Dated: _____

Addendum No._____ Dated: _____

Addendum No._____ Dated: _____

Addendum No._____ Dated: _____

Addendum No._____ Dated: _____

Addendum No._____ Dated: _____

The undersigned agrees that he shall execute the Contract within the ten (10) days after the date of award, and shall commence work within the ten (10) days after date of the Notice to Proceed and shall progress therewith to its entire completion within the time stipulated in the Contract.

The Bidder agrees that this bid shall be good and may not be withdrawn for a period of ninety (90) days after the scheduled closing time for receiving bids.

If this Proposal shall be accepted by the Owner and the undersigned shall fail to contract as aforesaid, and to give bonds in a sum equal to one hundred percent (100%) of the Contract price, as determined by the canvass of bids, and with surety or sureties satisfactory to the Owner within ten (10) days from the date of the award, then the Owner may, at its option, determine that the Bidder has abandoned the Contract: thereupon, the Proposal and acceptance shall be null and void, and the bid security, for not less than one third (33%) of the amount of the bid, accompanying this Proposal, shall become the property of the said Owner as liquidated damages for the delay and additional expense to the Owner caused thereby if said Proposal shall be rejected, or if said Proposal shall be accepted and the Bidder shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said Proposal) and shall furnish a Bond for his faithful performance of said Contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said Proposal, the accompanying bid security shall be returned to the undersigned making bid.

Seal
(if bid is by a Corporation)

Firm or Corporation_____

By:_____
(Duly Authorized)

Street Address_____

City_____ State_____ Zip_____

Telephone _____

_____ Fax _____
Date

REFERENCES

The Bidder is required to fill out the following form to enable the Owner to make inquiries and judge as to the Bidder's experience, skill, available financial resources, credit, and business standing.

1. Number of years the bidder has been in business as a General Contractor: _____

2. List three (3) projects of similar nature to the project described herein that the Bidder has completed, with name, address, and telephone number of a reference for each project. Include approximate construction cost:

_____

_____

_____

_____

_____

_____

_____

3. List projects presently under construction by the Bidder, dollar amount of the contract, and percent completed:

_____

_____

_____

_____

_____

_____

_____

4. Has the Bidder ever failed to complete work awarded; and if so, state where and why:

_____

_____

_____

5. Does the Bidder plan to sublet any part of this work; and if so, give details:

_____

_____

_____

_____

_____

6. List equipment Bidder owns that is available for this project:

_____

_____

_____

_____

_____

_____

_____

_____

7. List equipment the Bidder plans to rent or purchase for this project:

_____

_____

_____

_____

_____

_____

_____

8. If the Bidder has worked under the direction of a Consulting Borough of Naugatuck Inspector, list recent projects with the name, address, and telephone number of the Consultant:

_____

_____

_____

_____

9. List name, address, and telephone number for the following:

Surety:_____

Bank:_____

Major Material Supplier:_____

_____
Bidder

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned,

as Principal, and _____as Surety, are

hereby held and firmly bound unto _____as OWNER in the penal sum of

_____

for the payment of which, well and truly to be made, we hereby jointly and severally bind

ourselves, successors and assigns.

Signed, this _____ day of _____, 2012.

The Condition of the above obligation is such that whereas the Principal has submitted to

_____a certain BID, attached hereto and hereby made a part hereof to enter into a

contract in writing, for the traffic signal installation at Andrew Ave. and Rubber Ave.

NOW, THEREFORE,

(a) If said BID shall be rejected, or

(b) If said BID shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said BID) and shall furnish a BOND for his faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said BID,

then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its BOND shall be in no way impaired or affected by any extension of the time within which the OWNER may accept such BID; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

_____(L.S.)
Principal

_____
Surety

By:_____

IMPORTANT - Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the project is located.

CONTRACT FORMS

CONTRACT AND AGREEMENT

THIS AGREEMENT, made this _____ day of _____ in the year 20___,

Between the Borough of Naugatuck, with its principal office and place of business at 229

Church Street, Connecticut 06770, acting herein through it's Mayor and

_____ , a _____ , with an office and

place of business at _____ , hereinafter called the contractor.

WITNESSETH: That the parties to this agreement in consideration of the undertakings, promises, and agreements on the part of the other herein contained, hereby undertake, promise, and agree as follows:

I Definitions

The word "Owner" as used herein shall mean the Borough of Naugatuck, acting through its properly authorized representatives.

The words "as directed", "as required", "as permitted", "as allowed", or phrases of like effect or import, used herein shall mean that the direction, requirement, permission, or allowance of the Borough of Naugatuck Inspector is intended and similarly the words "approved", "reasonable", "suitable", "proper", "satisfactory", or words of like effect or import, unless otherwise particular specified herein, shall mean approved, reasonable, suitable, proper, or satisfactory in the judgment of the Borough of Naugatuck Inspector.

The word "Contractor" shall mean _____or it's duly authorized agents.

II Contract Includes

The indices, headings and subheadings are for convenience only and do not form a part of the Contract Documents.

The Contractor shall, at his own sole cost and expense, furnish all labor, materials, and other services necessary for the completion of this Contract and shall complete and finish the same in the most thorough, workmanlike, and substantial manner, in every respect, to the satisfaction and approval of the Borough of Naugatuck Inspector, in the manner and within the time hereinafter limited, and in strict accordance with the Advertisement, Information for Bidders, Proposal, General Requirements, Detailed Specifications, and Addenda hereto attached, and the Contract Drawings herein referred to, (collectively the "contract documents"), which contract documents are hereby made a part of this Contract as fully as if the same were repeated at length herein.

Addendum No. ___ Dated: _____ Addendum No. ___ Dated: _____

Addendum No. ___ Dated: _____ Addendum No. ___ Dated: _____

Addendum No. ___ Dated: _____ Addendum No. ___ Dated: _____

III Specifications and Contract Drawings Supplementary

The said Specifications and Contract Drawings are intended to supplement each other, and together constitute one complete set of Specifications and Contract Drawings, so that any

work exhibited in the one and not in the other shall be executed just as if it had been set forth in both, in order that the work shall be completed in every respect according to the complete design or designs as decided and determined by the Borough of Naugatuck Inspector. Should anything be omitted from the Specifications and Contract Drawings, the Contractor shall promptly notify the Borough of Naugatuck Inspector. From time to time during the progress of the work, the Borough of Naugatuck Inspector will furnish such supplementary or working drawings as are necessary to show changes or define the work in more detail, and these also shall be considered as Contract Drawings. When discrepancies exist between the Contract Drawings and Specifications, the Specifications shall govern.

IV Modifications

The Contractor, in entering into this Contract, understands that the Owner reserves the right to modify, to the extent herein provided, the arrangement, character, grade, or size of the work or appurtenances whenever, in the Owner's opinion, it shall be deemed necessary or advisable to do so. Minor changes in the work, not involving extra cost and consistent with the purposes of the work, may be made by verbal order, but no modifications involving extra work or material changes shall be made unless ordered in writing by the Borough of Naugatuck Inspector; and if the modification requires additional cost, a purchase order must be issued prior to work commencing. The Contractor shall and will accept such modifications when ordered in writing by the Owner through the Borough of Naugatuck Inspector, and the same shall not vitiate or void this Contract.

Any such modifications so made shall not, however, subject the Contractor to increased expense without equitable compensation, which shall be determined by the Borough of Naugatuck Inspector. If such modifications result in a decrease n the cost of work involved, and equitable deduction from the Contract price, to be determined by the Borough of Naugatuck Inspector, shall be made. The Borough of Naugatuck Inspector's determination of such additional compensation, or of any such deduction, shall be based upon the unit prices in the Contractor's bid, unless the modification involves work not included in such bids and then in the event, the modification shall be as set forth in Section XXVIII prior to the commencement of additional work. In no event shall any modification in the work shown on the Plans and Specifications be made unless the nature and extent thereof has first been certified by the Borough of Naugatuck Inspector in writing and sent to the Contractor.

V Correction of Errors and Omissions

The Plans and Specifications forming part of this Contract are intended to be explanatory of each other, but should any discrepancy appear, or misunderstanding arise, as to the import of anything contained in either, the explanation and decision of the Borough of Naugatuck Inspector shall be final and binding on the Contractor; and all directions and explanations required, to complete and make effective any of the provisions of the Contract and Specifications, shall be given by the Borough of Naugatuck Inspector. Corrections of errors and omissions in the Drawings or Specifications may be made by the Borough of Naugatuck Inspector when such corrections are necessary for the proper fulfillment of the Contract Documents as construed by the Borough of Naugatuck Inspector. The effect of such corrections shall date from the time that the Borough of Naugatuck Inspector gives due notice thereof to the Contractor.

VI Borough of Naugatuck Inspector's Decision

All work under this Contract shall be done to the satisfaction of the Borough of Naugatuck Inspector, who shall determine the amount, quality, acceptability, and fitness of the several items of work and materials which are to be paid for hereunder. He also shall decide all questions which may arise as to the fulfillment of the terms of the Contract, Plans and Specifications. The determination of the Borough of Naugatuck Inspector in all such matters shall be final and binding upon the parties thereto.

VII Inspection of Work

It is agreed that the Owner may, at its pleasure, appoint and employ, at its own expense, such persons as may be necessary, who are to act as Borough of Naugatuck Inspectors, inspections, or agents, for the purpose of determining, in the Borough's interest, that the materials furnished and the work done, as the work progresses, conforms to the requirements of the Contract Documents. Such persons shall have unrestricted access to all parts of the work and to other places at and where the preparation of the materials and other parts of the work to be done under this Contract are carried on and conducted. They shall be given, by the Contractor, all facilities and assistance required to carry out their work of inspection.

It is not the function of the Borough of Naugatuck Inspector to supervise or direct the manner in which the work to be done under this Contract is carried on or conducted. The Borough of Naugatuck Inspector is not responsible for construction means, methods, techniques, sequences, or procedures, or for safety precautions and programs in connection with the work, and he will not be responsible for the Contractor's failure to carry out the work in accordance with the Contract Documents.

The Borough of Naugatuck Inspector shall have authority to reject and shall reject any work or material, or any part thereof, which does not, in his opinion, conform to the Contract Drawings, working drawings, Specifications, and Contract, and it shall be permissible for him to do so at any time during the progress of the work.

No work shall be done except in the presence of the Borough of Naugatuck Inspector or his assistants. No material of any kind shall be used upon the work until it has been inspected and accepted by the Borough of Naugatuck Inspector. Any materials or workmanship found at any time to be defective, or not of the quality or character required by the Contract Drawings and Specifications, shall be remedied at once regardless of previous inspection.

Such inspection shall not relieve the Contractor from any obligation to perform said work strictly in accordance with the Contract Drawings and Specifications, and work not so constructed shall be removed and made good by the Contractor at this own expense and free of all expense to the Owner, whenever so ordered by the Owner, without reference to any previous oversight or error in inspection.

VIII Address of Contractor

The address in the Proposal, upon which this Contract is based, shall be the Contractor’s place of business as set forth in this agreement. The delivering at the above-named place any such notice, letter, or other communication to the Contractor shall be deemed proper service to the Contractor. The notice letter or other communication may be mailed or delivered, from the Borough to the Contractor. The date of said service shall be the date of such delivery. Nothing herein contained shall be deemed to preclude or render inoperative the service of any notice, letter, or other communication upon the Contractor or his representative personally.

IX Obligation of the Contractor

The Contractor shall, at his own expense, provide any and all manner of supervisor, insurance, taxes, labor, materials, apparatus, scaffolding, appliances, tools, machinery, power, transportation, and whatever else may be required of every description necessary to do and complete the work and shall be solely answerable for the same and for the safe, proper, and lawful construction, maintenance, and use thereof. The Contractor shall cover and protect the work from damage and shall make good all injury to the same occurring before completion of this Contract. The Contractor shall employ only competent workmen and shall provide experienced superintendents and foremen on each part of the work.

The Contractor shall, at their own expense, wherever necessary or required, maintain fences, provide watchmen, maintain lights, place additional timber and braces, and take such other precautions as may be necessary to protect life, property, and structures, vehicles and pedestrians and shall be liable for all damages, occasioned in any way by his act or neglect or that of this agent, employees, or workmen. He shall provide access at all times to private property.

X Occupational Safety and Health Act

The applicable sections of the Occupational Safety and Health Act of 1970 (Williams-Steiger Act) shall apply and be made a part of this Contact. The Contractor's attention is particularly directed to the record keeping requirements of this Act.

XI Nondiscrimination in Employment

The Contractor agrees and warrants that, in the performance of this Contract, he will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color, sex, religion, or national origin in any manner prohibited by State, Federal, County or Municipal law.

XII Personal Attention and Competent Workmen

The Contractor shall give his personal attention constantly to the faithful prosecution of the work and shall be present, either in person or by a duly authorized representative, on the site of the work continually during its progress to receive directions or instructions from the Borough of Naugatuck Inspector. The Contractor shall employ at the site, during the performance of the work, a competent superintendent or foreman who shall be satisfactory to the Borough of Naugatuck Inspector and who shall not be changed, except with the consent of the Borough of Naugatuck Inspector, unless he shall cease to be an employee of the Contractor. Such superintendent or foreman shall represent and have full authority to act for the Contractor in his absence, and all directions and instructions given such superintendent or foreman shall be as binding as if given to the Contractor.

The Contractor shall employ only competent, skillful men to do the work, and whenever the Borough of Naugatuck Inspector shall notify the Contract in writing that any man on the work is, in his opinion, incompetent, unfaithful, disorderly, or otherwise unsatisfactory, such man shall be discharged from the work and shall not again be employed on it, except with the consent of the Borough of Naugatuck Inspector.

XIII Public Safeguards

The Contractor agrees to conduct the work at all times in such a manner that public travel shall not be inconvenienced needlessly nor shall it be wholly obstructed at any point.XIV Materials and Workmanship

It is the intent of the Specifications to describe fully and definitely the character of materials and workmanship furnished regarding all ordinary features and to require first-class work and materials in all particulars. For any unexpected features arising during the progress of the work and not fully covered herein, the Specifications shall be interpreted by the Borough of Naugatuck Inspector to require first class work and materials in all respects, and such interpretation shall be accepted by the Contractor.

XV Materials and Manufactured Articles

All materials and workmanship shall be subject to the approval of the Borough of Naugatuck Inspector and shall be in conformity with approved modern practice.

Unless otherwise specifically provided for in the Specifications, all materials

incorporated in the work shall be new, of standard and first-class quality, and of the best workmanship and design. No inferior or low grade, material will be either approved or accepted, and all work of assembly and construction must be done in a neat, first-class, and workmanlike manner.

XVI Unnoticed Defects

The inspection of the work and materials by the Borough of Naugatuck Inspector shall not relieve the Contractor of any of his obligations to fulfill this Contract, as herein described, and defective work shall be made good and unsuitable materials shall be rejected, notwithstanding that such work and materials had been previously overlooked by the Borough of Naugatuck Inspector and accepted or estimated for payment. If the work, or any part thereof, shall be found defective at any time before final acceptance of the whole work, the Contractor shall forthwith make good such defects, in a manner satisfactory to the Borough of Naugatuck Inspector.

XVII Care and Protection of Work

From the commencement of the work until the completion of the same, the Contractor shall be solely responsible for the care of the work covered by the Contract and for the materials delivered at the site intended to be used in the work; and all injury, damage, or loss of the same, from whatever cause, shall be made good at his expense before the final estimate is made. He shall provide suitable means of protection for all materials intended to be used in the work and for all work in progress as well as for completed work. He shall take all necessary precautions to prevent injury or damage to the work under construction by flood, freezing or inclement weather at any and all times. The methods used for this purpose shall be subject to the approval of the Borough of Naugatuck Inspector, but shall not relieve the Contractor from liability for inadequate protection of the work or materials.

XVIII Assignment of Contract

The Contractor shall have no right or power to assign this Contact, in whole or in part, nor to assign any right arising, or moneys due or to grow due thereunder, without prior written approval of the Owner.

XIX Subcontracting

The Contractor may utilize the services of specialty subcontractors on those parts of the work which, under normal contracting practices, are performed by specialty subcontractors. The Contractor shall not award the work to a subcontractor(s) without prior written approval of the Owner. The Contractor shall be fully responsible to the Owner for the acts and omissions of his subcontractors, and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons directly employed by him.

XIX Subcontracting (continued)

The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work to bind subcontractors to the Contractor by the terms of these Contract Documents, insofar as applicable to the work of subcontractors, and to give the Contractor the same power as regards terminating any subcontract that the Owner may exercise over the Contractor under any provisions of these Contract Documents.

Nothing contained in this contract shall create any contractual relation between any subcontractor and the Owner.

XX Liability of Contractor for Employees

Each and every employee of the Contractor and each and every of his subcontractors engaged in the said work shall, for all purposes, be deemed and taken to be the exclusive servants of the Contractor and not for any purpose or in any manner in the employment of the Owner. The Contractor shall, in no manner, be relieved from responsibility or liability on account of any fault or delay in the execution of the said work, or any part thereof, by any such employee, or any such subcontractor, or any material men, whatsoever.

XXI Coordination With Other Contractors and Utilities

During the progress of the work, existing utilities may be found to be in close proximity to or in conflict with the work being installed. The Contractor shall make every effort to identify and locate these utilities before working in the area. If it is known or found that these utilities exist the Contractor shall contact the appropriate utility and alert them to the situation. Should an existing utility be found to be in close proximity to the work the Contractor shall take all the necessary precautions to protect the utilities and his work. Should existing utilities be found to conflict with the work the Contractor shall arrange with the utility company for their adjustment. No additional compensation will be made for delays, inconvenience or damage sustained by the Contractor due to interference from the above-noted utility appurtenances or the operation of locating, installing or moving them or the inability of others to perform their work in a timely manner.

XXII Permits, Laws, Codes, Ordinances and Insurance

The Contractor shall keep himself fully informed of all existing and current codes, ordinances, and regulations and Municipal, County, State or National laws in any way limiting or controlling the actions or operations of those engaged upon the work or affecting the materials supplied to or by them. He shall, at all times, observe and comply with all such valid and legally binding ordinances, laws, and regulations and shall protect and indemnify the Owner and its representatives and agents against any claim or liability arising from, or based on, any violation of the same. He shall obtain and pay for all necessary permits and pay all fees required in connection with the Contract. Contractor shall provide the types and amounts of insurance as set forth in Section 19, Information of Bidders and maintain in effect. He shall take out and carry appropriate employer's liability insurance and public liability insurance.

XXIII Patent Rights

The Contractor shall indemnify and save harmless the Owner and its officers, agents, and representatives from all claims for damages arising from the infringements, or alleged infringements, of any Letters Patent or patent rights covering any material, appliance, or device used in or upon the work or any part thereof.

XXIII Patent Rights (continued)

All royalties for patents or patent infringement claims, that might be involved in the construction or use of the work, shall be included in the Contract amount; and the Contractor shall satisfy all demands that may be made at any time for such and shall be liable for any damage or claims for patent infringements; and the Contractor shall, at his own expense, defend any and all suits or proceedings that may be instituted against the Owner for infringement, or alleged infringement, of any patent or patents involved, or alleged to be involved, in the work; and in case of any award for damages, the said Contractor shall pay such award.

XXIV Defense of Suits

The Contractor shall indemnify and hold harmless the Owner and it's consultants, agents and employees from and against all claims, damages, losses, and expenses, including, but not limited to, attorney fees, ("indemnification expense") arising out of or resulting from the performance of the work or arising out of or resulting from the Contract Documents, including, without limitation, all indemnification expense regarding personal injury or death and/or damage

to real or personal property or motor vehicles.

In claims against any person or entity indemnified under this section by an employee or the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under this Section shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under worker's or workmen's compensation acts, disability benefit acts or other employee benefit acts.

XXV Claims for Labor and Materials

The Contractor shall indemnify and save harmless the Owner from all claims expenses and for judgments regarding labor done or materials furnished under this Contract, or any alterations or modifications thereof, including without limitation, reasonable Attorney's fees. Contractor shall furnish the Owner with a Mechanic's Lien Waiver from all persons who have done work, or furnished materials under this Contract. In case such waiver is not furnished, an amount necessary or sufficient, within the discretion of the Owner, to meet the claims of the persons aforesaid, shall be retained, as herein specified, from the money due the Contractor under this Contract until the liabilities aforesaid shall be fully discharged or satisfactorily secured.

XXVI Completion of Work by Owner

If the work to be done under this Contract shall be abandoned by the Contractor; or if this Contract shall be assigned, or the work sublet by him, otherwise than as herein specified; or if at any time the Owner shall be of the opinion that the performance of the Contract is unnecessarily or unreasonably delayed; or if the Contractor is willfully violating any of the conditions or covenants of this Contract, or of the Specifications, or is executing the same in bad faith or not in accordance with the terms thereof; of if the work be not fully completed within the time named in this Contract for its completion, or within the time to which the completion of the Contract may be extended by the Owner, the Owner may notify the Contractor to discontinue all work, or any part thereof under his Contract, by a written notice to be served upon the Contractor as herein provided.

The Contractor shall, within five (5) days of the service of said written notice, discontinue the work, or such part thereof, and the Owner shall thereupon have the power to contract for the completion of the Contract, in the manner prescribed by law; or to place such and so many persons as it may be deemed advisable, by contract or otherwise, to work, and complete the work herein described, or such part thereof; or to take possession of and use any of the materials, plant, tools, equipment, supplies, and property of every kind provided by the Contractor for the purpose of his work; and to procure other materials and equipment for the completion of the same; and to charge the expense of said labor, materials and equipment to the Contractor.

The expense so charged shall be deducted and paid by the Owner out of such moneys as may be due, or may at any time thereafter grow due to the Contractor under and by virtue of this
Contract, or any art thereof; and in case such expense shall exceed the amount which would have

XXVI Completion of Work by Owner (continued)

been payable under the Contract, if the same had been completed by the Contractor, the Contractor or his surety shall pay the amount of such excess to the Owner within five (5) days of written demand therefore; and in case such expense shall be less than the amount which would have been payable under this Contract, if the same had been completed by the Contractor, the owner shall pay such difference to the Contractor within five (5) days of written demand.

XXVII Partial and Final Estimates

On, or about, the last day of the month, the Borough of Naugatuck Inspector shall make an approximate estimate of the value of the work done and of the materials incorporated into the work.

The Owner will pay the Contractor, within 30 days of receipt of an estimate, ninety-five percent (95%) of the total estimated value of the work done, as estimated by the Borough of Naugatuck Inspector less previous payments. Partial payments will not be made whenever the amounts of the estimate or estimates of work done since the last previous estimate are less than $2,000.00.

The Borough of Naugatuck Inspector shall, as soon as practicable after the completion of work, make a final certificate of the entire amount of the work done under this Contract, and the value thereof, and the Owner shall, within thirty (30) days after such final estimate is approved, pay the entire sum so found to be due hereunder, after deducting there from all previous payments and also all percentages and deductions to be retained under any of the provisions of this Contract.

Before payment of each estimate, the Contractor shall provide the Owner with a mechanic's lien waiver from the Contractor and all persons who have done work or furnished materials under this Contract.

XXVIII Payment

The Owner, in consideration of the faithful performance by the Contractor of all and singular his covenants, promises, and agreements contained herein, agrees to pay the Contractor for the full completion by him of the work embraced in this Contract, in the manner and within he time herein specified and limited, and to the satisfaction and approval of the Borough of Naugatuck Inspector, the prices stipulated in the said Proposal hereto attached, such payment to be made at the times and in the manner and upon the conditions herein expressly provided. The Owner also agrees to pay in addition such amounts as may be agreed upon for modifications and for extra work.

XXIX Guarantee

The Contractor guarantees that the work done under this Contract and the materials furnished by him and used in the construction of the same are free from defects or flaws. The guarantee is for a term of one (1) year from, and after, the date upon which the final estimate of the Borough of Naugatuck Inspector is formally approved by the Owner. It is hereby agreed and understood that this guarantee shall not include making any repairs made necessary by any cause or causes other than defective materials furnished by, or defective work done by, the Contractor.

XXX Rate of Progress and Time of Completion

The Contractor shall commence work within ten (10) calendar days of the date of the Notice to Proceed. The rate of progress shall be such that the whole work, inclusive of any add alternates, shall be performed and the grounds cleaned-up in accordance with the Contract and Specifications within one hundred eighty (180) calendar days unless extensions of time shall be made for the reasons, and in the manner, stated under Article XXXIII, "Extension of Time".

The above calendar days includes time for the Contractor to obtain approval of a Erosion and Sediment Control Plan, as applicable.

XXXI Extension of Time

The Contractor expressly covenants and agrees that, in undertaking to complete the work within the time mentioned, he has taken into consideration, and made allowance for, all of the ordinary delays and hindrances incidental to such work, whether growing out of delays in securing materials or workmen or otherwise. Should the Contractor, however, be substantially delayed in the prosecution and completion of the work by any changes, additions, or omissions therein ordered in writing by the Borough of Naugatuck Inspector, or by fire, lightning, earthquake, tornado, cyclone, riot, insurrection, or war, or by the abandonment of the work by the workman engaged therein through no fault of the Contractor, or by the discharge of all or any material number of workmen in consequence of difficulties arising between the Contractor and such workmen, or by the neglect, delay, or default of any other contractor of the Owner, then the Contractor may, within five (5) days after the occurrence of the delay for which he claims allowance, notify the Borough of Naugatuck Inspector thereof in writing, and thereupon, and not otherwise, the Contractor shall be allowed such additional time for the completion of the work as the Borough of Naugatuck Inspector, in his discretion, shall award in writing, and his decision shall be final and conclusive upon the parties.

XXXII Damages for Failure to Complete on Time

The Contractor shall pay to the Owner for each and every calendar day (including Saturdays, Sundays, and holidays) that he shall be in default in completing the entire work in the time stipulated in Article XXXII, or within the extension of time he may be granted as provided in Article XXXIII, the sum of Five Hundred Dollars ($500.00) per day. This sum is hereby agreed upon not as a penalty but as liquidated damages which Owner will suffer by reason of such default, time being of the essence of the Contract and a material consideration thereof. The Owner shall have the right to deduct the amount of any such damages from any monies due the Contractor under this Contract.

XXXIII No Waiver of Rights

No certificate given or payment made under this Contract, except the final certificate or final payment, shall be evidence of the performance of the Contract either wholly or in part, and no payment shall be construed to be an acceptance of defective work or improper materials. No act of the Owner or of the Borough of Naugatuck Inspector, or of any representatives of either of them in inspecting the work, nor any extension of time for the completion of the work, shall be regarded or taken as an acceptance of such work, or any part thereof, or materials used therein or thereof, either wholly or in part; but such acceptance shall be evidenced only by the final certificate of the Borough of Naugatuck Inspector.

Before any final certification shall be allowed, the Contractor shall be required, and he hereby agrees, to sign and attest on said certificate a statement that he accepts the same in full payment and settlement of all claims on account of work done and material furnished under this Contract, and furthermore, that all claims for materials provided or labor performed have been paid and satisfied in full. No waiver of any breach of this Contract by the Owner or anyone acting for it, or on its behalf, shall be held as a waiver of any other or subsequent breach thereof.

XXXIV Mandatory Negotiation

Contractor and the Owner agree that they will attempt to negotiate in good faith any dispute of any nature arising under this contract. The parties shall negotiate in good faith at not less than two negotiation sessions prior to seeking any resolution of any dispute under the provisions of arbitration paragraph of this contract. Each party shall have the right to legal representation at any such negotiation session.

XXXV Arbitration

Any dispute or question arising under the provisions of this contract which has not been

resolved under the mandatory negotiation paragraph of this contract shall be determined by arbitration. Arbitration proceedings shall occur at a neutral location in Waterbury, Connecticut, and shall be conducted in accordance with the rules then applicable of the American Arbitration Association. Arbitration shall proceed before a pane of one arbitrator to be selected by American Arbitration Association. The decision of the Arbitrator shall be final and may be entered in any court having jurisdiction thereof. Each party shall pay one-half of all costs and expenses of such arbitration.

XXXVI Owner's Right to Use

The Owner reserves the right to use or occupy any portion of the work considered by the Borough of Naugatuck Inspector as ready for use or occupancy. Such use or occupancy shall not be held, in any way, as final acceptance of the work or any portion thereof, or as a waiver of any portion of this Contract.

XXXVII Verification of Data

The quantities of work to be done and the materials to be furnished under this Contract, as given in the accompanying "Information for Bidders" and on the Proposal form, are approximate estimates for the purpose of comparing bids on a uniform basis. Neither the Owner nor the Borough of Naugatuck Inspector are to be held responsible for the data or information given relative to said quantities or that given on the Plans relative to existing conditions. The Contractor has judged for himself as to such quantities and as to other circumstances affecting the cost of the performance of this Contract, and he shall not at any time assert that there was any misunderstanding in regard to the character or amount of work to be done and materials and labor to be furnished.

XXXVIII Contractor's Wage Certification Form

If applicable the Contractor or his authorized agent will be required to sign the Contractor's Wage Certification Form at the time of Contract execution.

XXXIX Verbal Statements Not Binding

It is understood and agreed that the written terms and provisions of this Agreement shall supersede all prior verbal statements of the Borough of Naugatuck Inspector or other representatives of the Owner, and such statements shall not be effective or be construed as entering into or forming a part of, or altering in anyway whatsoever, the written Agreement.

XXXX Final Estimate Constitutes Release

It is agreed that acceptance by the Contractor of the last payment made, under the provisions of Article XXVII, shall operate as and shall be a release to the Owner, and every agent thereof, from all claims and liability to Contractor for anything done or furnished for, or relating to, the work or for any act or neglect of the Owner or any agent thereof.,

No payment, however, final or otherwise, shall operate to release the Contractor or his sureties from any obligations under this Contract.

XXXXI Delays or Termination by Governmental Authorities

Notwithstanding any other provision(s) of this contract, the parties agree that in the event of a stop work order from the State Department of Transportation, Department of Environmental Protection, or any other State or Federal agency, no additional compensation will be made by Owner to Contractor for delays, inconvenience or damage sustained by Contractor due to such

order, including, without limitation, damages for loss of use of equipment or idle equipment. Similarly, in the event of a termination of the project by the State DOT, DEP or any other State or Federal agency, no additional compensation will be made by Owner to Contractor for the termination, or for any delay, inconvenience or damage sustained by Contractor due to such termination, including, without limitation, damages for loss of use of equipment or idle equipment. In the event of such termination, the Borough of Naugatuck Inspector shall prepare a final certificate for the entire amount of work done up to the effective date of termination. The provisions of Sections XXIX (Guarantee) shall apply to all work completed as of the effective date of any stop Work order, as if the effective date was the date upon which the final estimate of the Borough of Naugatuck Inspector is formally approved by the Borough.

XXXXII Validity of Agreement

The provision of this Agreement shall be binding upon the Parties and their respective successor or assigns.

IN WITNESS WHEREOF, the said parties hereto have caused this instrument to be signed by their respective duly constituted officers, attested, and sealed pursuant to proper resolutions.

Signed and sealed
in the presence of

_____

_____ _____
Borough of Naugatuck
Mayor

_____

_____ _____
(Duly Authorized)
Contractor

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that

_____
(Name of Contractor)

_____
(Address of Contractor)

a _____, hereinafter called Principal and
(Corporation, Partnership, or Individual)

_____
(Name of Surety)

_____
(Address of Surety)

hereinafter called Surety, are held and firmly bound unto

_____
(Name of Owner)

_____
(Address of Owner)

hereinafter called OWNER, in the penal sum of _____Dollars, $(_____) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the OWNER, dated the _____day of _____, 20__, a copy of which is hereto attached and made a part hereof for the construction of:

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, an any extensions thereof which may be granted by the OWNER, with or without notice to the Surety and during the one year guaranty period, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the OWNER from all costs and damages which may suffer by reason of failure to do so, and shall reimburse and repay the OWNER all outlay and expense which the OWNER may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect. PROVIDED, FURTHER, that the said surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in anyway affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in _____counterparts each one of Which shall be deemed an original, this the_____day of _____, 2012.

ATTEST:

Principal

_____ By _____(s)

(Principal) Secretary

(SEAL)

_____ _____

(Witness as to Principal) (Address)

_____ _____

(Address)

_____ _____

Surety

ATTEST:

_____

(Surety) Secretary

(SEAL)

_____ By_____

Witness as to Surety Attorney-in-Fact

_____ _____

(Address) (Address)

_____ _____

NOTES: Date of BOND must not be prior to date of Contract.
If CONTRACTOR is Partnership, all partners should execute BOND.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the PROJECT is located.

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: that

_____

(Name of Contractor)

_____

(Address of Contractor)

a _____, hereinafter called Principal and
(Corporation, Partnership, or Individual)

_____

(Name of Surety)

_____

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto

_____

(Name of Owner)

_____

(Address of Owner)

hereinafter called OWNER, in the penal sum of

_____Dollars, $(_____)

in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the OWNER, dated the _____day of _____, 2012, a copy of which is hereto attached and made a part hereof for the construction of:

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, an any extensions thereof which may be granted by the OWNER, with or without notice to the Surety and during the one year guaranty period, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the OWNER from all costs and damages which may suffer by reason of failure to do so, and shall reimburse and repay the OWNER all outlay and expense which the OWNER may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in anyway affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the

SPECIFICATIONS.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in _____counterparts each one of which shall be deemed an original, this the_____day of _____, 20__.

ATTEST:

_____ Principal
(Principal) Secretary By _____(s)

(SEAL)

_____ _____
(Witness as to Principal) (Address)

_____ _____
(Address)

_____ _____
Surety

ATTEST:

_____
(Surety) Secretary

(SEAL)

_____ By_____
Witness as to Surety Attorney-in-Fact

_____ _____
(Address) (Address)

_____ _____

NOTES: Date of BOND must not be prior to date of Contract.
If CONTRACTOR is Partnership, all partners should execute BOND.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the PROJECT is located.

STATE OF CONNECTICUT
LABOR DEPARTMENT

REGULATION OF WAGES

CONTRACTORS WAGE CERTIFICATION FORM

I, _____ of _____

do hereby certify that the _____
Company Name

_____
Street

_____
City, State, Zip Code

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 or prevailing rates required for such project (a copy of which is attached hereto).

_____
Signed

Subscribed and sworn to before me this _____day _____ , 2012.

_____
Notary Public

Return to: Labor Department
Regulation of Wages
200 Folly Brook Blvd.
Wethersfield, CT 06209

Town Attorney Certification

CERTIFICATE OF OWNER'S ATTORNEY

I, the undersigned,_____

the duly authorized and acting legal representative of_____

do hereby certify as follows:

I have examined the attached Contract (s) and surety bonds and the manner of execution thereof, and I am of the opinion that each of the aforesaid Agreements have been duly executed by the proper parties thereto acting through their duly authorized representatives; that said representatives have full power and authority to execute said Agreements on behalf of the respective parties named thereon; and that the foregoing Agreements constitute valid and legally binding obligations upon the parties executing the same in accordance with terms, conditions, and provisions thereof.

Town Attorney_____ Date:_____

Department of Revenue Services
Discovery Unit
25 Sigourney Street
Hartford CT 06106-5032
(Rev. 10/05)

Form AU-766
Guarantee Bond

Purpose: A nonresident contractor working in Connecticut and a surety company licensed to do business in Connecticut use **Form AU-766** to post a guarantee bond with the Department of Revenue Services (DRS) for a specific project in the state. The guarantee bond ensures all taxes due to the State of Connecticut from the contractor are paid to DRS. Read the instructions on the reverse side before you complete this form. If you need help, call **860-541-7538,** Monday through Friday, during business hours.

Part I: Nonresident Contractor Information

Name	Connecticut Tax Registration No.
Address (Street or PO Box, City, State, and ZIP Code)	

Part II: Person Doing Business With a Nonresident Contractor Information

Name	Connecticut Tax Registration No., Federal ID No., or SSN
Address (Street or PO Box, City, State, and ZIP Code)	

Part III: Surety Company Information

Name	Bond No.	Amount of Bond
Address (Street or PO Box, City, State, and ZIP Code)		

Part IV: Project Information ☐ Check the box if this bond is for a change order.

Physical Location of Project (Street, City or Town)		Name of Project
Commencement Date	Completion Date for Nonresident Contractor	Total Contract Price or Amount of Change Order

Conditions of the obligation for the project detailed above:

- The nonresident contractor has entered into a contract related to real property at a Connecticut location.
- The nonresident contractor and the surety company are posting a bond of 5% of the total contract price, including any change orders and add-ons, with DRS to ensure that all taxes that become due and owing during the period of the contract will be paid.
- A bond must be posted within 120 days of the commencement of the contract or 30 days after the completion of the contract, whichever is earlier.
- If the nonresident contractor pays all taxes, interest, and penalties within three years from the last day of the month succeeding the reporting period in which the contractor posted the bond, the bond expires; otherwise the obligation remains in full force.
- This bond jointly and severally binds the nonresident contractor and the surety company, their heirs, executors, administrators, successors, and assigns for payment of this obligation.

Nonresident Contractor Declaration: I, the nonresident contractor named above or its authorized agent, declare under the penalty of law that I have examined Form AU-766 and, to the best of my knowledge and belief it is true, complete, and correct. I understand the penalty for willfully delivering a false document or return to DRS is a fine of not more than $5,000, or imprisonment for not more than five years, or both.

Print Name	Title
Authorized Signature	Date

Surety Company Declaration: I, an authorized agent of the surety company named above, declare under the penalty of law that I have examined this Form AU-766 and, to the best of my knowledge and belief it is true, complete, and correct. I understand the penalty for willfully delivering a false document or return to DRS is a fine of not more than $5,000, or imprisonment for not more than five years, or both.

Seal:

Print Name	Title
Authorized Signature	Date

General Instructions

A nonresident contractor and a surety company licensed to do business in Connecticut must execute **Form AU-766**, *Guarantee Bond*, to post a guarantee bond with the Department of Revenue Services (DRS) for a specific project in Connecticut. A power of attorney for the person signing the bond on behalf of the surety company **must** be attached to the bond, carry the corporate seal of the surety company, and bear the same date as the execution date of the bond.

A nonresident contractor has the option of filing a guarantee bond or a cash bond instead of the customer making a deposit with DRS under Conn. Gen. Stat. §12-430(7)(B). Under this option, the nonresident contractor has 120 days from the commencement of the contract or 30 days after the completion of the contract, whichever is earlier, to file a guarantee bond or a cash bond (Form AU-72) with DRS.

Return Form AU-766 to: Department of Revenue Services
Discovery Unit
25 Sigourney Street
Hartford CT 06106-5032

See **Special Notice 2005(12)**, *Nonresident Contractor Bonds and Deposits*, for more information.

Nonresident contractor means a contractor who does not maintain a regular place of business in Connecticut.

Regular place of business means:

- Any bona fide office, factory, warehouse, or other space in Connecticut at which a contractor is doing business in its own name in a regular and systematic manner; **and**
- Which place is continuously maintained, occupied, and used by the contractor in carrying on its business through its employees regularly in attendance to carry on the contractor's business in the contractor's own name.

A regular place of business **does not include**:

- A place of business for a statutory agent for service of process or a temporary office whether or not it is located at the site of construction;
- Locations used by the contractor only for the duration of the contract, such as short-term leased offices, warehouses, storage facilities, or facilities that do not have full time staff with regular business hours; **or**
- An office maintained, occupied, and used by a person affiliated with a contractor.

Contract price means the total contract price, including deposits, amounts held as retainage, costs for any change orders, or charges for add-ons.

Person doing business with a nonresident contractor means **any** person who makes payments of the contract price to a nonresident contractor, and includes, but is not limited to property owners, governmental, charitable or religious entities, and resident or nonresident general contractors or subcontractors. An owner or tenant of residential real property is not a person doing business with a nonresident contractor and is not required to comply with the provisions of Conn. Gen. Stat. §12-430(7). However, the nonresident contractor doing business with such an owner or tenant must comply with the bond requirements under Conn. Gen. Stat. §12-430(7)(F).

Commencement of the contract means the time when the nonresident contractor signs the contract, but, in any event, occurs no later than when the work under the contract actually starts. If a change order is made after the commencement of the original contract, the change order commences when it is signed by the nonresident contractor, but, in any event, occurs no later than when the work under the change order actually starts.

Form AU-766(Back) (Rev. 10/05)

Completion of the contract means the time when the nonresident contractor makes the final periodic billing for the contract. The final periodic billing may be due before payment of any retainage becomes due. If a change order is made after the final periodic billing for the original contract, the change order is complete when the nonresident contractor bills for the change order.

Residential real property means real property used exclusively for residential purposes and consisting of three or fewer dwelling units in one of which the owner or tenant resides.

Any bond that bears an erasure or alteration, regardless of its nature, must have the change authenticated by a notation in the margin. The notation should describe the correction and be signed in the name of the surety company by the officer who executed the bond and must bear the corporate seal of the surety company.

Specific Instructions

Part I: Enter the name and complete address of the nonresident contractor furnishing the bond. Include the nonresident contractor's Connecticut tax registration number. The name and address of the nonresident contractor appearing on the bond must agree with the name and address on **Form REG-1**, *Business Taxes Registration Application*, filed with DRS. (If the information originally provided on Form REG-1 is now incorrect, you must notify the DRS Registration Unit in writing of the correct information.) If the nonresident contractor is a corporation, the corporate name appearing on the bond must be the same shown in the records of the Office of the Secretary of State, or similar agency of another state if the nonresident contractor is not a Connecticut corporation.

Part II: Enter the name and complete address of the person doing business with the nonresident contractor. If the nonresident contractor is the general contractor, enter the name and address of the owner or tenant of the property who has entered the contract. If the nonresident contractor is a subcontractor, enter the name and address of the general contractor.

Enter the Connecticut tax registration number of the person doing business with the nonresident contractor. If the person doing business with the nonresident contractor does not have a Connecticut tax registration number, enter that person's Federal Employer Identification Number or Social Security Number.

Part III: Enter the name and complete address of the surety company that guarantees this bond. Include the bond number.

Part IV: Check the box if the deposit is for a change order occurring after the bond for the initial contract was furnished to DRS.

Enter the name of the project and the complete address including the street address and the city or town where the project is physically located.

Enter the commencement date of this project or change order.

Enter the date by which the nonresident contractor is expected to complete work on this project or change order.

Enter, in words and figures, the total amount to be paid to the nonresident contractor under the contract. Indicate if this amount is an estimate.

Declarations: An authorized representative for the nonresident contractor and the surety company must sign and date the declaration on Form AU-766. The name of the nonresident contractor and the surety company must be exactly as it appears on the bond. The corporate seal of the surety company must be affixed by its signature on Form AU-766.

NON-COLLUSION AFFIDAVIT OF PRIME BIDDER

State of _____)
) ss.
County of _____)

_____, being first duly sworn, deposes and says that:

1. He is _____ of _____ herein referred to as the Bidder that has submitted the attached Bid;

2. He is fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such Bid;

3. Such Bid is genuine and is not a collusive or sham bid;

4. Neither the said Bidder nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affidavit, has in any way colluded, conspired, connived or agreed, directly or indirectly, with any other Bidder, firm or person to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted or to refrain from bidding in connection with such Contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other Bidder, firm or person to fix the price or prices in the attached Bid or of any other Bidder, or, to fix any overhead, profit or cost element in the bid price or the bid price of any other Bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the Borough of Naugatuck or any person interested in the proposed Contract; and

5. The price or prices quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affidavit.

(Signed) _____

_____
Title

Subscribed and sworn before me

This _____day of _____, 2012

_____

_____
(Notary Public)

My Commission expires_____

NON-COLLUSION AFFIDAVIT OF SUBCONTRACTOR

State of _____)
) ss.
County of _____)

_____, being first duly sworn, deposes and says that:

1. He is _____ of _____ herein referred to as the "Subcontractor";

2. He is fully informed respecting the preparation and contents of the Subcontractor's Proposal submitted by the Subcontractor to _____, the Contractor for certain work in connection with the _____Contract pertaining to the _____Project in Naugatuck, Connecticut;

3. Such Subcontractor's Proposal is genuine and is not a collusive or sham Proposal;

4. Neither the Subcontractor nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affidavit, has in any way colluded, conspired, connived or agreed, directly or indirectly, with any other Bidder, firm or person to submit a collusive or sham Proposal in connection with such Contract, or refrain from submitting a Proposal in connection with such Contract, or has in any manner, directly or indirectly, sought by unlawful agreement or connivance with any Bidder, firm or person to fix the price or prices in said Subcontractor's Proposal , or to fix any overhead, profit or cost element of the price or prices in said Subcontractor's Proposal, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the Borough of Naugatuck or any person interested in the proposed Contract; and

5. The price or prices quoted in the Subcontractor's Proposal are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affidavit.

(Signed) _____

_____
Title

Subscribed and sworn before me

This _____day of _____, 2012

_____

_____
(Notary Public)

My commission expires_____

(a) No proposed subcontractor shall be disapproved by the Borough of Naugatuck except for cause.

(b) The Contractor shall be fully responsible to the Borough of Naugatuck for the acts and omissions of his subcontractors, and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons directly employed by him.

(c) The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work to require compliance by each subcontractor with the applicable provisions of this Contract for _____

(d) Nothing contained in this Contract shall create any contractual relationship between any subcontractor and the Borough of Naugatuck.

OTHER CONTRACTS

The Borough of Naugatuck may award, or may have awarded, other Contracts for additional work, and the Contractor shall cooperate fully with such other Contractors, by scheduling his own work with that to be performed under other Contracts as may be directed by the Borough of Naugatuck. The Contractor shall not commit or permit any act which will interfere with the performance of work by any other Contractor as scheduled.

GENERAL REQUIREMENTS

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GENERAL REQUIREMENTS

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Borough of Naugatuck
Naugatuck Pedestrian Greenway Phase I

GENERAL REQUIREMENTS

1. Scope of Work

The work to be completed under this contract is the Naugatuck Pedestrian Greenway Phase I, which shall include improvements to sidewalks, and pedestrian pathways, the General Pulaski pedestrian bridge, the installation of modular unit walls, signage and new decorative pedestrian lighting and landscaping. Also included in the work is topsoil and turf establishment, plantings, installation of electrical conduit, sign relocation, detour signage, traffic barriers and other work described in the Contract Documents.

The Borough reserves the right to decrease the Scope of Work to be done under this Contract, select bid or alternate items in its best interest, or to omit any work in order to bring the cost within available funds. Exercise by the Borough of the above rights shall not constitute any grounds or basis of claim for damages or for anticipated profits on work omitted.

2. Standards

Wherever reference is made in this Contract to the Standard of any technical society or other recognized organization, these shall be construed to mean the latest standard adopted and published at the date of advertisement for bids.

Abbreviations are defined as follows:

ASTM --	American Society of Testing and Materials.
ANSI --	American National Standards Institute
ASA --	American Standards Association
ACI --	American Concrete Institute
AASHTO --	American Association of State Highway and Transportation Officials
ASME --	American Society of Mechanical Town of Deep River Inspectors
IEEE --	Institute of Electrical and Electronics Engineers
AWWA--	American Water Works Association
ACPA--	American Concrete Pipe Association

3. Contract Drawings and Working Drawings

The work is shown on the accompanying Contract Drawings. Such additional working drawings, as required because of changes or to provide greater detail, will be provided by the Engineer.

4. Alterations

The Engineer may make alterations to the line, grade, plan, form, dimensions, or materials of the work, or any part thereof, either before or after the commencement of the work. If such alterations increase the quantity of work, such increase will be paid for according to the quantity of such extra work actually done and at the prices stipulated for such work under unit price Items of the Contract. In case no unit price is applicable, the alterations will be paid for as extra work defined in Article XXVIII of the Contract.

5. Planimeter

The use of the planimeter shall be considered satisfactory for estimating quantities where geometric and analytic methods would be comparatively laborious.

6. Contractor's Schedule of Operations

The Contractor shall submit, within ten (10) days of the date of the Notice to Proceed, a preliminary schedule of operations for the project to the Inspector for approval. The approved preliminary schedule shall be used to prepare a detailed schedule of the principal construction events including all proposed purchase and delivery dates for items with critical delivery times. A supplemental bar graph shall also be prepared based on this construction schedule. The detailed schedule and supplemental bar graph shall be submitted within ten (10) days of the date of the Notice to Proceed.

The status of the project shall be evaluated monthly by the Contractor and shall be compared to the original schedule which shall be revised, if necessary, and reissued.

7. Coordination with Other Contractors and Utilities

During the progress of the work, other contractors and/or utilities may be engaged in performing work in the area. The Contractor shall coordinate the work to be done under this Contract with the work of others.

8. Cost Breakdown

Prior to the first estimate for payment to the Contractor, the Contractor shall submit to the Engineer for approval a detailed cost breakdown of the various amounts to be paid for within each Lump Sum Item, as applicable. It shall also include, but not necessarily be limited to, proportional amounts for bonds, insurance and miscellaneous works which are to be paid for throughout the life of the Contract, and which are not specifically included for payment under other Items and/or Division of the Contract.

9. Estimated Quantities

To aid the Inspector in determining quantities to be paid for, the Contractor shall, whenever requested, give the Inspector access to the proper invoices, bills of lading, or other pertinent

documents and shall provide methods and assistance necessary for weighing or measuring materials.

10. Payment for Miscellaneous Work

No direct payment will be made to the Contractor for furnishing and providing miscellaneous temporary works, plants, and services, including Contractor's office, sanitary requirements, water supply, power, tools, equipment, lighting, telephone systems, store houses, store yards, safety devices, permits, insurances, bonds, watchmen, cleanup and the like, or other items specified under these General Requirements, unless payment therefore has been specifically provided. Compensation for the same is understood to be included in the scheduled prices hereinbefore given for the various kinds of work contemplated.

11. Drawings and Information to be Furnished by the Contractor

For materials and equipment not supplied by the Owner, the Contractor shall promptly furnish to the Engineer, for his information, three (3) copies of drawings in detail of the materials, equipment, piping, and structural details for any part of the work for which Drawings are not to be issued by the Inspector. Before placing orders for any manufactured item or part of structure, he shall also submit three (3) copies, for approval, of detailed lists and descriptions of the various materials, fixtures, fittings and supplies which he proposes to use in the work, and also the names of individuals or companies who propose to furnish or manufacture the same. Copies of the results of all tests of materials and equipment shall be furnished by the Contractor immediately following the performance of required tests.

Prior to the submittal of shop drawings, the Contractor shall check, approve, initial and date the drawings and shall also indicate by reference the Specification and/or Plan which covers the item. Submittals will be returned to the Contractor if they have not been properly processed by him.

Approval by the Inspector of shop drawings for any material, apparatus, device and layout shall not relieve the Contractor from the responsibility of furnishing same of proper dimension, size, quality, quantity and all performance characteristics to efficiently perform the requirements and intent of the Contract Documents. Approval shall not relieve the Contractor from the responsibility for errors of any sort on the shop drawings. If the shop drawings deviate from the Contract Documents, the Contractor shall advise the Inspector of the deviations in writing, including the reasons for the deviation.

In the event the Contractor obtains the Engineer's approval for the material, manufactured items, or equipment, other than that which is shown on the Plans or specified herein, the Contractor shall, at his own expense, make any changes as required in the structures, buildings, piping, or any other portion of the work necessary to accommodate the approved material, manufactured item, or equipment.

12. Substitution Clause

Whenever in the Plans and Specifications any item of equipment or material is designated by reference to a particular brand, manufacturer or trade name, it is understood that an approved equal product, acceptable to the Inspector, may be substituted by the Contractor, except where expressly noted as "no substitutions."

13. Contract Limits

The Contractor shall confine his activities to within street lines, easements, and right-of-way.

The Contractor shall take particular care to protect trees and shrubs and private personal property. He shall make good any damage to the satisfaction of the Inspector.

The Contractor shall not enter upon or make use of any private property along the line of work, outside the limits of the rights-of -way, except when written permission is secured from the owner of said property and a copy delivered to the Inspector. The Contractor shall be held responsible for all damages or injury, done by himself or those in his employ, to any private or public property of any character during the prosecution of the work. The Contractor shall restore or repair at his own expense, in a manner satisfactory to the Inspector, such property as may be damaged by his operations during the prosecution of the work.

In case of failure on the part of the Contractor to restore or repair such property in a manner satisfactory to the Owner, the Owner may, upon 48 hour notice to the Contractor, proceed with such restoration or repair. The expense of such restoration or repair shall be deducted from any monies which are due or may become due the Contractor under this Contract.

14. Work in Easements

Not applicable in this Contract.

15. Cleaning up the Site

During the progress of the work, the Contractor shall keep the construction areas in a neat condition, free from accumulations of waste materials and rubbish. Lunch papers, bottles, lumber cut-offs, drinking cups and like rubbish shall be removed from the site daily. No alcoholic beverages will be permitted at the construction site(s).

On, or before the completion of the work, and before acceptance and final payment shall be made, the Contractor shall clean and remove, from the site and adjacent property all surplus and discarded materials, rubbish, and temporary structures and restore, in an acceptable manner, all property and leave the whole area in a neat and presentable condition.

16. Storage of Materials

Materials shall be stored so as to insure the preservation of their quality and fitness for the work. When considered necessary, they shall be placed on wooden platforms and covered or stored in a

suitable building, as directed by the Inspector. Stored materials shall be located so as to facilitate prompt inspections.

Materials and equipment supplied by the Owner shall be jointly inspected by the Owner and the Contractor and shall, upon acceptance by the Contractor, become the Contractor's responsibility to make good any damage to the materials and equipment until they have been incorporated and accepted in the work.

17. Removal of Condemned Materials

The Contractor shall remove from the site of the work, without delay, all rejected and condemned materials of any kind brought to or incorporated in the work. No such rejected or condemned materials shall again be offered for use by the Contractor.

18. Hauling Materials

Before starting any work, the Contractor shall arrange, with the Municipal or State officials having jurisdiction, for the use of routes of travel for hauling materials, including surplus earth and rock, that will result in minimum inconvenience to the traveling public. Routes of travel so scheduled shall be adhered to throughout the course of the work, unless otherwise approved.

19. Accommodation of Traffic

During the progress of the work, all streets shall be kept open for the passage of traffic and pedestrians and shall not be obstructed unless authorized by the authority having jurisdiction over same. Driveways, sidewalks, and areas of roadway shall be closed as short a time as possible while work is in progress and passage shall be restored by the close of work every day, by properly placed backfill or approved bridging. The Contractor shall take such measures at his own expense as may be necessary to keep the street open for traffic and shall give advance notice to the Fire and Police Departments, and the Board of Education of his proposed street operations. He further agrees to be responsible for all legal notices to the public concerning the state of the roads while the work is in progress.

Warning signs shall be provided along all streets while work is in progress and, where traffic direction is required, flag men shall be designated by the Contractor to direct traffic past the equipment, machinery or construction operations. Barricades and lights shall be provided as required to protect life and property. Where trenches have been cut in streets on which traffic may pass at times, warning signs shall be placed at frequent intervals and maintained until the street is safe for travel. All such work and operations shall be in accordance with requirements of the Owner and the Specification herein. The use of unauthorized or unapproved signs, barricades, or traffic delineators will not be permitted.

The Contractor shall construct, maintain, without extra compensation, such adequate and proper bridges over excavations as may be necessary or directed for the purpose of accommodating pedestrians and vehicles. Ingress and egress to private property, satisfactory to the Inspector, shall be continuously provided.

Should the Contractor or his employees neglect to set out and maintain barricades or lights, as required in the Specifications, the Inspector may immediately and without notice arrange for furnishing, installing and maintaining barricades or lights and any other precaution deemed necessary. The cost thereof shall be borne by the Contractor and may be deducted from any amount due or to become due to the Contractor under this Contract.

The Contractor shall be held responsible for any damages that may have to be paid as a consequence of the Contractor's failure to protect the public.

20. Temporary Roads

The Contractor shall be responsible for providing and maintaining such temporary access roads, to and along right-of-way, as are necessary for transportation of materials and equipment. Where such roads are on private property he shall obtain permission for their construction and use and pay all costs pertaining thereto.

21. Dust Control

The Contractor shall take all necessary precautions to prevent and abate nuisance caused by dust arising from his operations. Approved methods applicable to various parts of the work, such as application of water spray or calcium chloride, shall be employed. This also applies to maintaining temporary paving nuisance-free until permanent paving is placed. The area of construction along roadways shall be broom swept each day after completion of the day's work and the application of water as necessary, all at no additional cost to the owner.

22. Working Conditions

In prosecuting the work of this Contract, the Contractor shall provide working conditions on each operation that shall be as safe and healthful as the nature of the operation permits. He shall comply with all safety and sanitary rules, laws and regulations.

23. Work in Inclement Weather

During freezing, storm or inclement weather, no work shall be performed except such as can be done satisfactorily and in such manner as to secure first-class construction throughout.

24. Working Hours

The Contractor's working schedule shall be confined to a five (5) day week, Monday through Friday, and the working day shall be confined between the hours of 7:00 a.m. and 5:00 p.m. current local time.

Unless otherwise especially permitted, no work shall be done between the hours of 5:00 p.m. and 7:00 a.m. except as necessary for the proper care and protection of the work already performed. If it shall become absolutely necessary to perform work at night, the Inspector shall be informed,

at least 24 hours in advance, of the beginning of the performance of such work. Only such work shall be done at night as can be done satisfactorily and in a first-class manner. Good lighting and all other necessary facilities for carrying out and inspecting the work shall be provided and maintained at all points where such work is being done.

25. Emergency Work

The Contractor shall file, with the Borough of Naugatuck Engineer, the name and telephone number of a person authorized by him who may be contacted regarding emergency works at the job site that may be required during non-working hours for reasons of public safety.

This person shall be readily available and full Authority to deal with any emergency that may occur.

26. Sedimentation and Erosion Control

The Contractor shall prepare a sedimentation and erosion control plan for the work if applicable.

27. Work Near Brook(s) and Stream(s)

Care shall be taken to prevent, or reduce to a minimum, any damage to any water body from pollution by debris, sedimentation, or other material, or from manipulations of equipment and/or materials near such water bodies and on abutting property. Particular care shall be taken to prevent gasoline, diesel fuel, and other oils from entering any water body.

28. Work Within or Near Areas Designated as Inland Wetlands

Care shall be taken to prevent, or reduce to a minimum, any damage to any inland wetland from pollution by debris, sedimentation, or other material, or from manipulations of equipment and/or materials near such water bodies and on abutting property. Particular care shall be taken to prevent gasoline, diesel fuel, and other oils from entering any inland wetland.

29. Soil and Groundwater Conditions

The Owner assumes no responsibility whatsoever with respect to ascertaining for the Contractor such facts concerning physical characteristics at the site of the project. The Contractor agrees that he will make no claim for and has no right to additional payment for extension of time for completion of the work, or any other concession because of any interpretations or misunderstanding on his part of this Contract, or because of any failure on his part to fully acquaint himself with all conditions relating to the work.

30. General Sanitary Requirements

Not applicable this Contract.

31. Water Supply and Electrical Energy

Not applicable this Contract.

32. Contractor's Officer

Not applicable this Contract

33. Resident Engineer's Office

Not applicable this Contract.

34. Explosives and Blasting

Not applicable this Contract.

35. Sheeting, Shoring and Bracing

Where necessary, the sides of trenches and excavations shall be supported by adequate sheeting, shoring and bracing. The Contractor shall be held accountable and responsible for the sufficiency of all sheeting, shoring and bracing used and for all damage to persons or property resulting from the improper quality, strength, placing maintaining or removing of the same. Where sheeting is removed, care shall be taken not to disturb the new work or existing utilities and structures.

No sheeting is to be left in place unless expressly permitted by the Engineer. No direct payment will be made for sheeting, shoring, and bracing and compensation for such work and all expenses incidental thereto shall be considered as included in the unit prices bid for the various Items of this Contract.

36. Existing Structures

All known surface and underground structures, except electric and telephone service connections, and water, gas and sewer service pipes, on or immediately adjacent to the work, are shown on the Plans. Sewer, drainage, water and gas pipes, manholes and similar structures located in or adjacent to the location of the structures included in this Contract, are shown on the Contract Drawings. This information is shown for the convenience of the Contractor in accordance with the best information available, but is not guaranteed to be correct or complete. The Contractor shall explore the route ahead of trenching and shall uncover all known obstructing pipes sufficiently to determine their location. Necessary changes in location may be made by the Engineer to avoid unanticipated obstructions.

Wherever water or gas mains, electric or telephone ducts, or electric or telephone poles are encountered and may be in any way interfered with, the Contractor shall keep the utility company involved fully informed in advance. The Contractor shall cooperate with the utility company in the protection, removal, relocation and replacement of such structures.

The Contractor shall, at his own expense, sustain in their places and protect from direct or

indirect injury all utilities, pipes, poles, conduit, walls, buildings and other structures and property in the vicinity of his work, and he shall be responsible for all damage and assume all expense for direct or indirect injury caused by his work to any of them or to any person or property by reason of injury to them.

Guard rails, posts, guard cables, signs, poles, markers, mailboxes, fences, walls and stone walls, and other private improvements, which are temporarily removed, damaged or destroyed to facilitate installation of the sewer, shall be replaced and restored to a condition as good as or better than existed and to the satisfaction of the Owner or Inspector.

The Contractor shall, at his own expense, retain the services of a licensed surveyor to replace property markers, on or adjacent to privately owned property, which have been disturbed during the course of construction.

37. Marking New Underground Plant

All new underground plant shall be marked with warning tape in accordance with State of Connecticut Public Act 16-345 and DPUC Regulations.

38. Operation of Water Valves

Unless otherwise permitted, existing water valves shall not be operated by the Contractor. Whenever the operation of a water valve is necessary, the Contractor shall make arrangements, at least 24 hours in advance of the need, to have the Owner's forces perform the required operations. Contractor must prepare and distribute customer notices to all affected customers at least 24 hours prior to any shutdown of service.

39. Testing Laboratories

The inspector in coordination with the Contractor shall provide the State DOT with all samples of materials to be tested, and all necessary paperwork required, under this contract.

40. Wage Rates

The wages paid on an hourly basis to any mechanic, laborer, or workman employed upon the work herein contracted to be done, and amount of payment or contribution paid or payable on behalf of each such employee to any employee welfare fund, as defined in Section 31-53 of the 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 employee welfare fund, shall pay to each employee, as part of his wages, the amount of payment or contribution for his classification on each pay day.

The Contractor shall comply with all Connecticut General Statutes pertaining to the payment of prevailing wages. The Contractor shall provide to the Borough weekly certified payrolls of his employees and any subcontractors employed on the work.

41.

Notice to the Contractor - State Required Forms

The Apparent Low Bidder will be required to submit the following State Required forms to the Borough of Naugatuck:

1 - DBE Participation Approval Request

2 - Contractor's Proposed Progress Chart

3 - Certificate of Compliance with Connecticut General Statute Section 31-57-b

4 - CON 83 - Anticipated Source of material

5 - CON 32 - Certification of Insurance

The Borough of Naugatuck will provide a copy of the above applicable forms to the Apparent Low Bidder.

SUPPLEMENTAL CONDITIONS

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SUPPLEMENTAL CONDITIONS

These Supplemental Conditions amend or supplement the General Conditions of the Construction Contract and other provisions of the Contract Documents as indicated below. All provisions which are not so amended or supplemented remain in full force and effect.

1. DEFINITIONS

A. The Terms used in these Supplemental Conditions which are defined in the General Conditions of the Construction Contract have the meanings assigned to them in the General Conditions.

B. Wherever used in the Contract Documents, the following words have the meanings indicated, which are applied to both the singular and the plural thereof:

"Project Manual" - shall mean the bound volume containing the following Contract Documents:

Requests For Bids
Information For Bidders
Signed copy of the Bid Proposal Forms, with all attachments required for bidding
Contract Forms
General Requirements
Supplemental Conditions
State Wage Rates
Technical Specifications
Performance Bond and Payment Bond
Construction drawings entitled **"Naugatuck Pedestrian Greenway Phase I"**
Certificate of Insurance
Addenda

The word "Remove," where it applies to existing materials, shall mean remove entirely from the site unless material is approved by the Engineer for re-use. In addition, the word "remove" shall imply the patching of all remaining work affected by removal. All existing materials which have been removed shall become the Contractor's property unless otherwise specified.

"As Necessary" or "As Required" - Work referred to as "As Necessary" shall be that work which is required for completed construction, but is not necessarily shown or described in the Contract Documents.

The word "Furnish" or the word "Supply" - shall mean purchase, delivery, and off-loading at the job site including all documentation, storage, and protection.

The word "Install" or the word "Apply" - shall mean set in place complete for normal use or service, all in accordance with the Contract Documents.

The word "Provide" - shall mean furnish (or supply) and install (or apply).

The words "Approved Equal" - shall mean any product which in the opinion of the Engineer is comparable in quality, durability, appearance, strength, performance, design, physical dimension, and arrangement to the product specified, and will function properly in accordance with the design intent.

The word "Product" - shall mean any item of equipment or material provided under the Contract Documents.

2. SCOPE OF WORK

The work to be completed under this contract is the Naugatuck Pedestrian Greenway Phase I, which shall include improvements to sidewalks, and pedestrian pathways, the General Pulaski pedestrian bridge, the installation of modular unit walls, signage and new decorative pedestrian lighting and landscaping. Also included in the work is topsoil and turf establishment, plantings, installation of electrical conduit, sign relocation, detour signage, traffic barriers and other work described in the Contract Documents.

The Borough reserves the right to decrease the Scope of Work to be done under this Contract, select bid or alternate items in its best interest, or to omit any work in order to bring the cost within available funds. Exercise by the Borough of the above rights shall not constitute any grounds or basis of claim for damages or for anticipated profits on work omitted.

3. TIME FOR COMPLETION

The Contractor shall commence work upon a written "Notice to Proceed" from the Owner and the Contractor shall fully complete this Contract within one hundred and eighty (180) days from the date of the written "Notice to Proceed."

4. LIQUIDATED DAMAGES

The Contractor shall proceed with the work at such rate of progress to ensure full completion within the time requirements stated above. It is expressly understood and agreed by and between the Contractor and the Borough that the Contract time for the completion of the work described herein shall be reasonable, taking into consideration the climatic and economic conditions and other factors prevailing in the locality of the work.

If the Contractor shall fail to complete the work within the Contract times, or extension of time granted by the Borough, then the Contractor and his sureties shall be liable for and shall pay to the Borough for each and every calendar day that he shall be in default in completing any given assignment in the time stipulated above, the sum of $500.00. This sum is hereby agreed upon, not as a penalty, but as fixed liquidated damages which the Owner will suffer by reason of such default, time being of the essence of the Contract and a

material consideration thereof. The Owner shall have the right to deduct the amount of any such damages from any monies due the Contractor under this Contract.

5. PAYMENTS AND RETAINAGE

Monthly applications for payment shall be submitted to the Borough Engineer for consideration. Payment shall be made within thirty days after approval of the application for payment by the Borough.

An amount of 95 percent (95%) of the estimated amount due, less any payments previously made and/or any moneys to be held will be paid to the Contractor monthly. The balance will be retained by the Borough until final completion of the work. Final payment will not be made until final completion and acceptance by the Borough of all work covered by the Contract. The Contractor agrees that he will indemnify and save the Borough harmless for all claims growing out of the lawful demands of subcontractors, laborers, suppliers, and assignees.

6. PAYMENT OF WAGES

The Contract Documents contain a copy of the minimum wage rate schedule issued by the State of Connecticut Labor Department. Said wage rate schedule shall be posted at a conspicuous location on the project site.

The Contractor is cautioned that wage rates are continually changing and he shall ensure himself that the enclosed schedule is the latest issue, this being his responsibility.

7. FAIR EMPLOYMENT PRACTICES

The successful Contractor shall agree that neither he nor his subcontractors will refuse to hire or employ or to bar or to discharge from employment an individual, or to discriminate against him in compensation or ill terms, conditions, or privileges of employment because of race, color, religious creed, age, sex, national origin, or ancestry, except in the case of a bona fide occupational qualification or need.

The terms stated above are taken from Section 31-126 of the Connecticut General Statutes "Unfair Employment Practices."

8. CONTRACT DRAWINGS

The Contract Drawings, dated January 5, 2012 for this project are as follows:

Sheet Title	Sheet in Set	Sheet
Title Sheet	01	-
Detailed Estimate Sheet	02	DE
Index Sheet	03	IN
Notes and Legend	04	NL

Site Plan – Existing Conditions	05-12	EX (1-8)
Site Plan – Layout & Landscaping	13-18	LA (1-6)
Site Plan – Grading, Utilities, Sediment & Erosion Controls	19-22	GR (1-4)
Electrical Drawings	23-26	EL-1 – EL-4
Sediment and Erosion Control Notes & Details	27	SD (1)
Site Details	28-29	SD (2-3)
Signage and Pavement Markings	30	SPM (1)
Structural Plans & Details	31-42	S (1-12)
Maintenance and Protection of Traffic	43-46	MPT (1-4)
Detour Plan	47-48	D (1-2)

Refer to Title Sheet for list of Connecticut DOT Standard Drawings.

9. SAFETY

The Contractor shall perform all work in accordance with the latest local, state, and federal governmental laws and regulations including, but not limited to, the governmental safety regulations of the Department of Labor and Office of Safety and Health Administration suggested practices.

10. LINES, GRADES, AND MEASUREMENTS

The controlling lines and grades shall be as shown on the Contract Drawings. Additional batter boards, lines, grades and forms shall be furnished and set by the Contractor if he through willfulness or carelessness removes, or permits to be removed, any reference marks establishing said controlling lines and grades, before the performance of the work requires such removal. The replacement of such reference marks shall be at the Contractor's expense.

The Contractor shall make all measurements and check all dimensions necessary for the proper construction of the work as directed or as called for in the Specifications.

During the performance of the work, he shall make all necessary measurements to prevent misfitting in said work and be responsible therefore for the accurate construction of the entire work.

11. BLASTING AND EXPLOSIVES

The use of explosives will only be permitted when it is absolutely necessary, with prior approval from the Owner and in accordance with the Technical Specifications.

12. PUBLIC ACCESS

Roads, including driveways, sidewalks, and crossings shall remain passable while work is in progress except as noted and shown on the detour plans.

13. UTILITIES

Utilities may be located within the area and may be adjacent to the construction work.

The Contractor shall make all the necessary arrangements with any utility that must be protected or relocated in order to accomplish the work. The Contractor shall be solely responsible for the protection of the operating condition of all active utilities within the areas of construction and he shall take all necessary precautions to avoid damage to existing utilities. Any cost of temporary relocations for the Contractor's convenience shall be paid for by the Contractor.

The Contractor shall avail himself of the Connecticut Underground Utility Protection Plan ("Call Before You Dig"), 2040 Whitney Avenue, Hamden, CT 06517, Connecticut (Telephone Toll Free: 1-800-922-4455) for notifications to utility companies prior to excavating.

14. TEMPORARY UTILITIES

Unless otherwise provided for in the Specifications, the Contractor shall pay the cost of all temporary light, heat, electric power and water required for completion of the Contract. The necessary temporary utilities shall be installed at the start of the project.

15. TOILET ACCOMMODATIONS AND DRINKING WATER

The Contractor shall provide necessary sanitary toilet accommodations and drinking water for the workers. Separate facilities shall be provided for female workers.

16. SEQUENCE OF CONSTRUCTION

Prior to the start of construction, the Contractor shall prepare and submit a sequence of construction for approval by the Engineer.

17. BEST MANAGEMENT PRACTICES FOR PROTECTION OF THE ENVIRONMENT

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

b. No equipment, materials, or machinery shall be stored, cleaned, or repaired within 25 feet of any wetland or watercourse.

c. No construction shall proceed until a method to prevent construction debris, paint, spent blast materials, or other materials from entering the wetland or watercourse has been implemented as the sequence of construction necessitates. These materials shall be collected and disposed of in an environmentally safe manner as determined by Federal, State, and local laws. The applicant shall monitor wind velocities and storm events during the conduct of such work, and shall cause such activity to cease if storm or wind conditions threaten to cause deposits of materials in the waterway.

d. No objectionable materials resulting from any clearing activity shall be disposed of in any wetland or watercourse. This includes but is not limited to: stumps, tree roots, matted roots, wood chips, and other debris.

e. No fill or materials shall be deposited in surrounding wetlands or watercourses.

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

g. Dumping of oil or other deleterious materials on the ground is forbidden. The applicant shall provide a means of catching, retaining, and properly disposing of drained oil, removed oil filters, or other deleterious material. All oil spills shall be reported immediately to the DEP/Hazardous Materials office at (860) 424-3338. Failure to do so may result in the imposition of a fine under Section 22a-450 of the Connecticut General Statutes.

h. Every precaution shall be used while working in the vicinity of a waterway to prevent and minimize degradations of the existing water quality. All activities shall conform and be at all times consistent with applicable water quality standards, and management practices of the Federal Clean Water Act (1972), Connecticut's Water Quality Standards and other applicable State laws, and as defined in Form 816, Section 1.10, entitled "Environmental Compliance".

18. CALL-BEFORE-YOU-DIG

The Contractor's attention is called to the fact that they are obligated, by State Law, to notify the Public Utilities Control Authority (1-800-922-4455) 48 hours prior to beginning any digging or discharging of explosives. This one "Call-Before-You-Dig" system will assure that each utility company will have marked its lines in the field before any digging activity commences. The Contractor assumes all responsibilities for any damage to the various utility services, and all liabilities arising therefrom.

The Contractor shall make the necessary arrangements with the respective utility companies and provide grades for the resetting and adjusting of private utility company manhole and grade boxes, and the relocation of poles and hydrants; all at no additional costs to the Borough. Any delays, which are caused by conflicts with utility lines, shall not be considered as a basis of extending the time for completion.

19. DUST CONTROL

The contractor shall be responsible for controlling dust from its operations, and when ordered by the Engineer shall use whatever methods necessary for dust control, in a manner satisfactory to the Engineer. No additional payment for this work will be made, and all costs including labor, materials, and equipment shall be considered to be included in the various contract unit prices.

20. DESCRIPTION OF WORK

All materials furnished and used in the completed work shall be new, of best quality, and recognized as standard in construction practices. Whenever a specification number of reference is given, the subsequent amendments (if any) shall be included. The standards set forth in the selection of materials and supplies are intended to conform to those standards adopted by the Owner. Preference in manufacture shall be given to adopted standards, and the Contractor shall further familiarize themselves with the requirements of the Owner when the occasion or choice of materials or supplies so demands.

21. METHODS OF CONSTRUCTION

No materials shall be used which are known or found to be defective in any way. Notice shall be given to the Owner of any defective or imperfect material. Defective or unfit material, found to have been used, shall be removed and replaced by the Contractor with sound and unobjectionable material without additional expense to the Owner. All materials furnished by the Contractor are subject to thorough inspections and tests by the Owner. The Contractor shall submit samples as stated in the Specifications or as required by the Owner, of the various materials used on the contract for testing purposes. All ordering lists shall be submitted for approval to the Owner by the Contractor.

22. MOBILIZATION

This item shall consist of all the work necessary for the movement of personnel and equipment to and from the project site, including obtaining necessary permits from CDOT District IV office.

23. EXISTING CONDITIONS

Before submitting the bid, the Contractor shall examine the site, become familiar with the conditions, and verify the information in the Contract Drawings. Any discrepancy between the information provided in the Contract Documents and actual field conditions,

the Contractor shall make a note of it and bring it to the attention of the Engineer prior to bid. No claims for extras will be allowed based upon differences that could have been discovered by the Contractor prior to bid.

24. EXISTING STORM AND SEWER LINES

The Contractor shall be responsible for maintaining and protecting all existing storm drainage and sewer lines encountered in the work under this contract. Hand excavation and adequate bracing and shoring shall be employed where required to insure the structural integrity of said existing structures. The Contractor shall hold the Borough of Naugatuck harmless and shall be solely responsible for any liabilities or damages arising from their work near, under, or through existing sewers and culverts. The Contractor shall repair and replace, as required by the Borough, any existing sewers or culverts damaged as a result of their work. No payment by the Borough for work covered in this section, unless authorized in writing by the Borough of Naugatuck.

25. SURPLUS EXCAVATED MATERIAL

All surplus excavated material shall remain onsite. Contractor to coordinate with the Borough's engineering and public works department on placement of surplus excavated material. Contract lump sum prices, and no separate payment will be made for any work involved in this section.

26. DAILY CLEANUP

The Contractor shall at the end of each workday, keep the project area clean, and free from debris, excavation materials, or any other items considered as trash. These items shall be disposed of daily in a legal manner at an approved dumping site. No extra payment shall be made for any work involved in this section.

27. CONSTRUCTION SCHEDULE

At the preconstruction meeting held by the Borough, the Contractor shall furnish a detailed anticipated construction schedule for review and approval by the Borough prior to monthly payments to the Contractor. This construction schedule shall be revised to show progress to date and anticipated future progress and submitted to the Borough.

28. PROJECT MEETINGS

Regularly scheduled project meetings with Borough staff, the Contractor, and the Engineer are required on a weekly basis to review progress of the work. Meetings are to be held at a site adjacent to or on the work site as determined by the Borough of Naugatuck. The meetings are to be chaired by a designated representative of the Borough of Naugatuck.

29. UTILITY COORDINATION

The Contractor shall coordinate with ConnDOT Department of Facilities Design – Illumination for all work associated with removal and relocation of highway illumination and the removal and installation of conduit and handholes.

The Contractor shall coordinate with Connecticut Light & Power (CL&P) on the installation of the premium decorative light fixtures. The Contractor is responsible for obtaining the proper concrete bases from CL&P for the lights, installing all conduits, handholes, trenching and backfilling, and concrete foundations. CL&P will install light poles and fixtures and electrify the lights under separate contract with the Borough of Naugatuck.

TECHNICAL SPECIFICATIONS

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INTRODUCTION TO THE TECHNICAL SPECIFICATIONS

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

Within the Technical Specification of this Contract, the following definitions shall apply:

1. **Standard Specifications** shall mean Division II – Construction Details and Division III – Materials Section of 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 2010 (collectively referred to as the "Standard Specifications"). The Standard Specifications are hereby incorporated by reference and made part of this contract, as modified herein. Within the referred to portions of the Standard Specifications wherein the following terms are used, they shall mean respectively:

State, Department, Commissioner	Borough/Borough of Naugatuck, Milone & MacBroom, Inc. (MMI) Consulting Engineer & Landscape Architects or other representatives
Inspector	Representative of MMI, the Local Public Agency or other duly authorized representative
Laboratory	Laboratory designated by the Engineer, Local Public Agency or Owner

2. **Applicable Safety Code** shall mean the latest edition including any and all amendments, revisions, and additions thereto of the Federal Department of Labor, Occupational Safety and Health Administration's "Occupational Safety and Health Standards" and "Safety and Health Regulations for Construction," the State of Connecticut, Labor Department, "Construction Safety Code," or State of Connecticut "Building Code," whichever is the more stringent for the applicable requirement.

3. **Items**: Reference within the text of these Specifications to items without a number but title only are Technical Specification Items within this Contract. Sections or Articles referred to with a number refer to the State of Connecticut Department of Transportation, Bureau of Highways Specifications Sections or Articles.

4. **Local Regulatory Agency (ies)**: Local Regulatory Agency(ies) shall be defined as the governing body or authority having jurisdiction over or responsibility for a particular activity within the scope of this Contract. They may be as specifically defined within the Special Conditions, otherwise the Contractor shall be responsible to determine same in the local area of the Contract.

5. "These Specifications" where used in the text of the Technical Specifications Items shall mean the Technical Specifications of this Contract.

The work performed hereunder shall conform to the State of Connecticut Department of Transportation Standard Specifications for Roads, Bridges and Incidental Construction, Form 816, (Standard Specifications), dated 2004 and supplements, as amended or supplemented herein.

Please note that while Form 816 applies in terms of Division II – Construction Details and Division III – Materials, in many cases, as outlined in These Specifications, Description, Method of Measurement and Basis of Payment have been modified.

Applicable sections of Form 816 include at least the following. Other sections not specifically listed herein may also be required.

SECTION	TITLE
2.01	Clearing and Grubbing
2.02	Roadway Excavation, Formation of Embankment & Disposal of Surplus Material
2.05	Trench Excavation
2.09	Subgrade
2.12	Subbase
3.04	Processed Aggregate Base
4.06	Bituminous Concrete
5.07	Reset Manhole (Storm)
9.39	Sweeping for Dust Control
9.44	Topsoil
9.50	Turf Establishment
9.70	Trafficperson
9.71	Maintenance and Protection of Traffic
9.75	Mobilization
9.77	Traffic Cone
9.78	Traffic Drum
9.80	Construction Staking
10.01	Trenching and Backfilling
12.01	Epoxy Resin Pavement Markings, Symbols and Legends

NOTICE TO CONTRACTOR – PROTECTION OF EXISTING UTILITIES

The Contractor must "Call Before you Dig" at 1-800-922-4455 prior to the beginning of any excavation. The Contractor must be aware of existing utilities located within the project limits. The Contractor will be responsible for satisfactory repairs to any utilities damaged due to his operations.

Coordination with public and private utility custodians/owners will be required at the onset of construction. The Contractor will be required to reset or adjust all manhole covers and utility valve/gate boxes within the limits of the roadway prior to paving and sidewalk installation as required. There will be no separate payment for this work.

The following is a list of utility contact people:

ConnDOT - Facilities Design (Illumination) Mr.Frank Cocozza Electrical Engineer 2800 Berlin Turnpike, Unit 1305 PO Box 317546 Newington, CT 06131-7546 Phone 860-594-3176 Email: Frank.Cocozza@ct.gov	**CL&P.** Mr. Vincent Tata, Electrical Service Designer Engineering/New Service 250 Freight St. Waterbury, CT 06702 Phone: 203-597-4423 Email: Tatavj@nu.com
Borough of Naugatuck Mr. Wayne Zirolli Borough Engineer 229 Church Street Naugatuck, CT 06770 Phone: 203-720-7006 Email: wzirolli@naugatuck-ct.gov	

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.

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 - LOCALIZED PAINT REMOVAL

Description: The Contractor shall remove, contain, and collect existing paint from localized areas of steel structures where the Contractor will be flame-cutting, arc gouging, or welding to accomplish other work items in the contract. The paint removal is required because of the presence of hazardous paint (e.g., containing lead or other hazardous metals). The paint removal is required to comply with OSHA and DEP regulations. Additional information on hazardous paint removal and definitions of the terms used within this special provision may be obtained from the latest edition of the "SSPC-GUIDE 6 Guide for Containing Debris Generated During Paint Removal Operations" (SSPC Guide 6).

Construction Methods: All Contractor activities associated with the work described and specified herein shall be conducted in accordance with all applicable Federal, State of Connecticut and local safety regulations and guidelines. In addition, the firm removing the paint must meet the requirements set forth in Section 4 of "SSPC Qualification Procedure No. QP4 Standard Procedure for Evaluating the Qualifications of Contractors Disturbing Hazardous Paint During Demolition and Repair Work."

1 - Locations of Paint Removal: Prior to applying the heat of welding equipment to localized areas of steel superstructures, the existing paint shall be removed to a minimum of 6" from wherever the heat will be applied, or as directed by the Engineer. The locations of the paint removal shall be reviewed and accepted by the Engineer prior to commencement of the work. Such acceptance by the Engineer does not relieve the Contractor of his responsibility for complying with applicable OSHA and DEP regulations.

2 - Containment of Paint Debris: A containment enclosure or enclosures shall be erected to collect the paint debris. This containment enclosure shall be designed and erected to contain, as well as facilitate the collection of debris from the paint removal operations. The containment enclosure shall conform to the requirements found within the SSPC Guide 6. The class of the containment enclosure shall be a minimum of Class 3P or Class 3C depending upon the method of removal, modified to include paragraphs A) through E).

A) The containment materials shall be air and water impenetrable and fire resistant.

B) With the exception of the entryways, all seams in the containment enclosure shall be lapped a minimum of two (2) feet and shall be tied off at intervals not to exceed twelve (12) inches.

C) All attachments to bridge parapets and/or the underside of the bridge deck shall be sealed to prevent the escape of dust and debris

D) The area between beams under the bridge deck shall be sealed to prevent the escape of dust and debris.

E) Drawings and details of the containment enclosure shall be submitted to the Engineer for review prior to any paint removal. Review of the containment enclosure by the Engineer shall in no way relieve the Contractor of his responsibility for the containment enclosure.

3 - Methods of Paint Removal: Where required, the existing paint shall be removed by chemical stripping, needle guns with vacuum attachments, or by any of the closed abrasive blast cleaning techniques described in SSPC Guide 6. Open abrasive blast cleaning will not be permitted.

The Contractor is advised that chemical paint strippers may require several days and multiple applications to completely remove the existing paint, especially in temperatures below 60° F.

The Contractor is also advised that chemical paint strippers may not be effective in removing some paints.

4 - Storage of Collected Debris: All of the debris resulting from the paint removal operations shall be contained and collected. Debris within containment enclosures shall be removed by vacuum collection prior to disassembly of the enclosures. The debris, rust, and paint chips shall be stored in leak-proof storage containers at the project site. Debris storage shall be in accordance with Connecticut Hazardous Waste Management Regulations. The storage containers and storage locations shall be reviewed by the Engineer and shall be located in areas not subject to ponding. Storage containers shall be placed on pallets and closed and covered with tarps at all time except during placement, sampling, and disposal of the debris.

The Contractor shall report any cracks in the structural steel to the Engineer so that the cracks may be examined before being painted.

The Contractor shall notify the Engineer when section loss is observed during the cleaning of structural steel. Significant section loss shall be noted and measured by the Engineer, who shall promptly notify the Office of Bridge Safety and Evaluation.

The Contractor is liable for any fines, costs, or remediation costs incurred as a result of his failure to be in compliance with this Notice and all federal, state, and local laws.

The work required under this Notice will not be paid for directly, but the cost of localized paint removal shall be considered included for payment in the applicable items where localized paint removal is required.

Disposal of collected paint debris and chemical stripper residue shall be paid for under item "Disposal of Lead Debris."

NOTICE TO CONTRACTOR – PAINT SYSTEM

The Contractor shall use the same paint system for the new structural steel and the field painting of the existing structure.

NOTICE TO CONTRACTOR – TRAFFICPERSONS

Local police officers shall be used whenever traffic is impeded (i.e., during the installation, relocation or removal of construction signing, pavement markings or lane closures are in operation) as determined by the Naugatuck Police Department. This work will be paid for under the item "Trafficperson (Uniformed Officer)".

NOTICE TO CONTRACTOR – EXCAVATIONS AND TRENCHES

The Contractor shall provide suitable lighted barriers or barricades, traffic cone and drums, and signs erected and maintained at all times, around all open ditches, trenches, excavations, or other work potentially dangerous to pedestrians and vehicular traffic. Such barriers or barricades shall be as directed by the Engineer. The Contractor may be required to employ trafficperson and take other such reasonable means or precautions as the Engineer may direct, or as may be needed to prevent damage or injury to persons, vehicles or other property, and to minimize the inconvenience and damage to the public by his construction operations.

The Contractor shall perform his operations to maintain public access to properties along the streets. The Contractor shall confine his occupancy of public or traveled ways to the smallest space compatible with the efficient and safe performance of the work contemplated by the Contract. Whenever any excavation or trench will obstruct traffic in or to any public street, private driveway, or property entrance, the Contractor shall take such steps as required to maintain necessary traffic and access including temporary bridging of freshly placed concrete or the use of temporary gravel roadway surfaces. The Contractor shall use appropriate materials to bridge work including, but not limited to steel plates and wood platforms, as appropriate to maintain access to the existing properties.

NOTICE TO CONTRACTOR – SIGN MATERIALS

Construction Signs shall conform to the following: Prior to using the construction signs and their portable supports, 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).

Portable sign supports shall be designed and fabricated so that the signs do not blow over or become displaced by the wind from passing vehicles. Portable sign supports shall be approved by the Engineer before they are used.

Mounting height of signs on portable sign supports shall be a minimum of 1 foot and a maximum of 2 feet, measured from the pavement to the bottom of the sign.

All sign faces shall be rigid and reflectorized. Reflective sheeting shall conform to the requirements of Article M.18.09.01 (Type III). Sheet aluminum sign blanks shall conform to the requirements of Article M.18.13. Metal sign posts shall conform to the requirements of Article M.18.14. Application of reflective sheeting, legends, symbols, and borders shall conform to the requirements specified by the reflective sheeting manufacturer. Attachments shall be provided so that the signs can be firmly attached to the portable sign supports or metal posts without causing damage to the signs.

The following types of construction signs shall not be used: mesh, non-rigid, roll-up.

The following portable sign support systems or equivalent systems that meet the above requirements may be used:

> Korman Model #SS548 flexible sign stand with composite aluminum sign substrate (APOLIC)
>
> Traffix “Little Buster” dual spring folding sign stand with corrugated polyethylene (0.4 in. thick) sign substrate (InteCel)

Traffic cones, traffic drums, and barricades shall conform to the following Articles of the Standard Specification; 9.77.02, 9.78.02, 9.78.03, 9.79.02 & 9.79.3

All materials shall conform to the minimum standards of State of Connecticut Department of Transportation and the Manual on Uniform Traffic Control Devices (MUTCD). Any materials or equipment determined to be unacceptable by the Engineer shall be removed and replaced with new materials and/or equipment that is acceptable to the Engineer at no additional cost.

NOTICE TO CONTRACTOR – TRAFFIC CONTROL PLAN

The Contractor shall submit a written proposed traffic control plan for all stages of construction conforming to the requirements of the Borough of Naugatuck and as described herein for review.

The Contractor shall furnish, supply and install all signs, barricades, drums, traffic cones, delineators, plastic sign supports, temporary markings, and construction barricades to achieve the proposed traffic control plans and/ or required by the Owner. Ineffective signs, as determined by the Engineer and in accordance with the ATSSA guidelines contained in "Quality Standards for Work Zone Traffic Control Devices", shall be replaced by the Contractor at no cost to the Owner.

The Contractor shall maintain a minimum 11 foot wide travel lane in the areas of the alternating one-way traffic flow unless directed otherwise by the Borough. If, for some unavoidable reason, a roadway must be closed to traffic, the Contractor shall immediately notify the Owner/ Engineer.

Should the Contractor propose an alternative maintenance and protection of traffic plan, he shall submit three copies of that plan to the Owner/ Engineer for his review, comment, and approval.

NOTICE TO CONTRACTOR – DETOUR

The Contractor will be allowed to close the Route 8 on-ramp at Interchange 28 for no longer than 6 weeks to perform work between the on-ramp and the Naugatuck River. The Contractor shall coordinate and schedule the temporary closure of the on-ramp at least 14 days in advance with CONNDOT, the Borough's emergency services, and the Project Engineer. It is the Contractor's responsibility to implement the appropriate traffic control measures as detailed in the plans and described within the project manual.

NOTICE TO CONTRACTOR - BITUMINOUS CONCRETE & SUPERPAVE

SECTION 4.06 BITUMINOUS CONCRETE

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

4.06.01—Description
4.06.02—Materials
4.06.03—Construction Methods
4.06.04—Method of Measurement
4.06.05—Basis of Payment

4.06.01—Description: Where reference is made to bituminous concrete, it shall also refer to hot-mix asphalt (HMA) mixtures using the Marshall or Superpave mix-design method.

Work under this section shall consist of the production, delivery and placement of a non-segregated, smooth and dense bituminous concrete mixture brought to proper grade and cross section. This section shall also include the method and construction of longitudinal joints. The Contractor shall furnish Quality Control Plans for both plant production and placement of HMA mixtures.

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

Course: A lift or multiple lifts comprised of the same HMA mixture placed as part of the pavement structure.

Dispute Resolution: A procedure used to resolve conflicts resulting from discrepancies between the Engineer and the Contractor's density results that may affect payment.

Hot Mix Asphalt (HMA): A bituminous concrete mixture.

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

Lift: A single HMA mixture placed at a defined thickness.

Marshall: A HMA mixture design designated as "Bituminous Concrete Class ( )."

Superpave: A HMA mixture design designated as "HMA S*." Where "S" indicates Superpave and * indicates the sieve related to the nominal maximum aggregate size of the mix. For example Superpave 0.50 inch is now designated as HMA S0.5.

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

Quality Assurance (QA): All those planned and systematic actions necessary to provide confidence that a product or facility will perform as designed.

Quality Control (QC): The sum total of activities performed by the vendor (producer, manufacturer, and contractor) to ensure that a product meets contract specification requirements.

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

1. Materials Supply: The HMA mixture must be from one source of supply and originate from one HMA Plant unless authorized by the Engineer.

2. Recycle Option: The Contractor has the option of recycling reclaimed asphalt pavement (RAP) or Crushed Recycled Container Glass (CRCG) in HMA mixtures in accordance with Section M.04. CRCG shall not be used in the final lift of the surface course.

4.06.03—Construction Methods:

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

Delivery tickets must include the following information:

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

The net weight of mixture loaded into the truck must be equal to the cumulative measured weight of its components.

The Contractor must notify the Engineer immediately if, during the production day, there is a malfunction of the weighing or recording system in the automated plant or truck-weighing scales. Manually written tickets containing all required information will be allowed for one

hour, but for no longer, provided that each load is weighed on State-approved scales. At the Engineer's sole discretion, trucks may be approved to leave the plant if a State inspector is present to monitor weighing. If such a malfunction is not fixed within forty-eight hours, mixture will not be approved to leave the plant until the system is fixed to the Engineer's satisfaction. No damages will be considered should the State be unable to provide an inspector at the plant.

The State reserves the right to have an inspector present to monitor batching and /or weighing operations.

2. Transportation of Mixture: Trucks with loads of bituminous concrete being delivered to State projects must not exceed the statutory or permitted load limits referred to as gross vehicle weight (GVW). The Contractor shall furnish a list of all vehicles and allowable weights transporting mixture.

The State reserves the right to check the gross and tare weight of any delivery truck. A variation of 0.4 percent or less in the gross or tare weight shown on the delivery ticket and the certified scale weight shall be considered evidence that the weight shown on the delivery ticket is correct. If the gross or tare weight varies from that shown on the delivery ticket by more than 0.4 percent, the Engineer will recalculate the net weight. The Contractor shall take action to correct discrepancy to the satisfaction of the Engineer.

If a truck delivers mixture to the project and the ticket indicates that the truck is overweight, the load will not be rejected but a "Measured Weight Adjustment" will be taken in accordance with Sub-article 4.06.04.

The mixture shall be transported from the mixing plant in trucks that have previously been cleaned of all foreign material and that have no gaps through which mixture might inadvertently escape. The use of kerosene, gasoline, fuel oil, or similar products for the coating of the inside of truck bodies is prohibited.

Truck body coating and cleaning agents must not have a deleterious effect on the transported mixture. When acceptable coating or agents are applied, truck bodies shall be raised immediately prior to loading to remove any excess agent in an environmentally acceptable manner. The Contractor shall take care in loading trucks uniformly so that segregation is minimized.

Loaded trucks shall be tightly covered with waterproof covers acceptable to the Engineer. Mesh covers are prohibited. The front and rear of the cover must be fastened to minimize air infiltration. The Contractor shall assure that all trucks are in conformance with this specification. Trucks found not to be in conformance shall not be allowed to be loaded until re-inspected to the satisfaction of the Engineer.

3. Paving Equipment: The Contractor shall have the necessary paving and compaction equipment at the project site to perform the work. All equipment shall be in good working order and any equipment that is worn, defective or inadequate for performance of the work shall be repaired or replaced by the Contractor to the satisfaction of the Engineer. The use of solvents or

fuel oil as a release agent on any paving equipment (i.e., rollers, pavers, transfer devices, etc.) is strictly prohibited.

Refueling of equipment is prohibited in any location on the paving project where fuel might come in contact with bituminous concrete mixtures already placed or to be placed. Solvents for use in cleaning mechanical equipment or hand tools shall be stored clear of areas paved or to be paved. Before any such equipment and tools are cleaned, they shall be moved off the paved or to be paved area; and they shall not be returned for use until after they have been allowed to dry.

Pavers: Each paver shall have a receiving hopper with sufficient capacity to provide for a uniform spreading operation and a distribution system that places the mix uniformly, without segregation. The paver shall be equipped with and use a vibratory screed system with heaters or burners. The screed system shall be capable of producing a finished surface of the required evenness and texture without tearing, shoving, or gouging the mixture. Pavers with extendible screed units as part of the system shall have auger extensions and tunnel extenders as necessary. Automatic screed controls for grade and slope shall be used at all times unless otherwise authorized by the Engineer. The controls shall automatically adjust the screed to compensate for irregularities in the preceding course or existing base. The controls shall maintain the proper transverse slope and be readily adjustable, and shall operate from a fixed or moving reference such as a grade wire or floating beam.

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

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

Lighting: For paving operations, which will be performed during hours of darkness, the paving equipment shall be equipped with lighting fixtures as described below, or with approved lighting fixtures of equivalent light output characteristics. A sufficient number of spare lamps shall be available on site as replacements in the event of failures. The Contractor shall provide brackets and hardware for mounting light fixtures and generators to suit the configuration of the rollers and pavers. Mounting brackets and hardware shall provide for secure connection of the fixtures, minimize vibration, and allow for adjustable positioning and aiming of the light fixtures.

Lighting shall be aimed to maximize the illumination on each task and minimize glare to passing traffic. The Contractor shall provide generators on rollers and pavers of the type, size, and wattage, to adequately furnish 120 V AC electric power to operate the specified lighting equipment. A sufficient amount of fuel shall be available on site. There shall be switches to control the lights. Wiring shall be weatherproof and installed to all applicable codes. The minimum lighting requirements are:

Paver Lighting

Fixture	Quantity	Remarks
Type A	3	Mount over screed area
Type B (narrow) or Type C (spot)	2	Aim to auger and guideline
Type B (wide) or Type C (flood)	2	Aim 25 feet behind paving machine

Roller Lighting

Fixture	Quantity
Type B (wide)	2
Type B (narrow)	2
OR	
Type C (flood)	2
Type C (spot)	2

All fixtures shall be mounted above the roller. Aim floodlights and wide beam lights 50 feet in front of and behind roller; aim spotlights and narrow beam lights 100 feet in front of and behind roller.

Type A: Fluorescent fixture shall be heavy-duty industrial type. It shall be enclosed and gasketed to seal out dirt and dampness. It shall be UL listed as suitable for wet locations. The fixture shall contain two 4-foot long lamps - Type "F48T12CWHO". The integral ballast shall be a high power factor, cold weather ballast, and 120 volts for 800 MA HO lamps. The housing shall be aluminum, and the lens shall be acrylic with the lens frame secured to the housing by hinging latches. The fixture shall be horizontal surface mounting, and be made for continuous row installation.

Type B: The floodlight fixture shall be heavy-duty cast aluminum housing, full swivel and tilt mounting, tempered-glass lens, gasketed door, reflector to provide a wide distribution or narrow distribution as required, mogul lamp socket for 250 watt Metal Halide lamp, 120 volt integral ballast, suitable for wet locations.

Type C: The power beam holder shall have ribbed die cast aluminum housing and a clear tempered-glass lens to enclose the fixture. There shall be an arm fully adjustable for aiming, with a male-threaded mount with serrated teeth and lock nuts. There shall be a 120-volt heatproof socket with extended fixture wiring for an "Extended Mogul End Prong" lamp base. The fixture shall have gaskets, and shall be UL listed as suitable for wet locations. The lamps shall be 1000-watt quartz PAR64, both Q1000PAR64MFL (flood) and Q1000PARNSP (spot) will be required.

Material Transfer Vehicle (MTV): A MTV shall be used when placing a HMA surface course that is greater than 5,000 feet in length and 28 feet in width unless otherwise restricted as noted herein. A surface course is defined as the total thickness of the same HMA mix that extends up to and includes the final wearing surface whether it is placed in a single or multiple lifts, and regardless of any time delays between lifts.

The MTV must be a self-propelled vehicle specifically designed for the purpose of delivering the HMA mixture from the delivery truck to the paver. The MTV must have the capability to remix the bituminous concrete mixture.

The use of a MTV will be subject to the requirements stated in Article 1.07.05- Load Restrictions. The Engineer may limit the use of the vehicle if it is determined that the use of the MTV may damage highway components, utilities, or bridges. The Contractor shall submit to the Engineer at time of pre-construction the following information:

- The make and model of the MTV to be used.
- The axle weights and axle spacing for each separate piece of paving equipment (haul vehicle, MTV and paver).
- A working drawing showing the axle spacing in combination with all three pieces of equipment that will comprise the paving echelon.

4. Seasonal Requirements: Paving shall be divided into two seasons, In-Season and Extended Season; In-Season shall be from May 1 – September 30, and Extended Season shall be from October 1- April 30. In no case shall the final lift of HMA be placed during the extended season unless otherwise authorized or directed by the Engineer. No HMA mixes shall be placed when the air or base temperature is below 32°F. HMA for temporary pavement will be subject to the seasonal requirements unless otherwise authorized or directed by the Engineer.

Additional Requirements for Extended Season:

- The minimum mixture temperature for all HMA mixtures in the delivery truck prior to discharge into the paver or transfer vehicle hopper shall be 290°F. The temperature will be taken from the initial discharge of mixture from the truck. If found to be below the minimum requirement, the truck will not be allowed to unload remaining mixture.

- The Contractor shall use a minimum of 3 rollers with operators for paving lengths greater than 1000 feet. Two rollers must be capable of operating in the dynamic mode.

- The Contractor's Quality Control Plan shall include a section on Extended Season Paving and address paver speed, roller patterns and balancing mixture delivery and placement operations to meet specification requirements.

5. Superpave Test Section: The Engineer may require the Contractor to place a test section whenever the requirements of this specification or M.04 are not met.

The Contractor shall submit the quantity of mixture to be placed and the location of the test section for review and acceptance by the Engineer. The equipment used in the construction of a passing test section shall be used throughout production.

If a test section fails to meet specifications, the Contractor shall stop production, make necessary adjustments to the job mix formula, plant operations, or procedures for placement and compaction. The Contractor shall construct test sections, as allowed by the Engineer, until all the required specifications are met. All test sections shall also be subject to removal as set forth in Section 1.06.04.

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

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

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

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

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

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

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

7. Spreading and Finishing of Mixture: Prior to the placement of the bituminous concrete, the underlying base course shall be brought to the plan grade and cross section within the allowable tolerance. Immediately before placing the mixture, the area to be surfaced shall be cleaned by sweeping or by other means acceptable to the Engineer. The HMA mixture shall not be placed

whenever the surface is wet or frozen. The temperature of the mix at time of placement must be between 265°F and 325°F. The Engineer will verify the mix temperature by means of a probe or infrared type of thermometer. Rejection of mixture based on temperature will only be allowed if verified by means of a probe type thermometer.

Placement: The HMA mixture shall be placed and compacted to provide a smooth, dense surface with a uniform texture and no segregation at the designed thickness and dimensions indicated in the plans and specifications. The maximum paver speed during placement shall not exceed 40 ft/min unless authorized by the Engineer.

When unforeseen weather conditions prevent further placement of the mix, the Engineer is not obligated to accept or place the bituminous concrete mixture that is in transit from the plant.

In advance of paving, traffic control requirements shall be set up daily, maintained throughout placement, and shall not be removed until all associated work including density testing is completed.

The Contractor shall inspect the newly placed pavement for defects in the mixture or placement before rolling is started. Any deviation from standard crown or section shall be immediately remedied by placing additional mixture or removing surplus mixture. Such defects shall be corrected to the satisfaction of the Engineer.

Where it is impractical due to physical limitations to operate the paving equipment, the Engineer may permit the use of other methods or equipment. Where hand spreading is permitted, the mixture shall be placed by means of suitable shovels and other tools, and in a uniformly loose layer at a thickness that will result in a completed pavement meeting the designed grade and elevation.

Placement Tolerances: Each lift of HMA placed at a uniform design thickness shall meet the following requirements for thickness and area. Any pavement exceeding these limits shall be subject to an HMA adjustment or removal. Lift tolerances will not relieve the Contractor from meeting the final designed grade. Lifts of designed non-uniform thickness, i.e. wedge or shim course, shall not be subject to thickness and area adjustments.

a) Thickness- Where the total thickness of the lift of mixture exceeds that shown on the plans beyond the tolerances shown in Table 2, the longitudinal limits of such variation including locations and intervals of the measurements will be documented by the Engineer for use in calculating a HMA adjustment in 4.06.04-2.

TABLE 2 - Thickness Tolerances

Mixture Designation	Lift Tolerance
Class 4 and HMA S1	+/- 3/8 inch
Class 1, 2 and 12 and HMA S0.25, S0.375, S0.5	+/- ¼ inch

Where the thickness of the lift of mixture is less than that shown on the plans beyond the tolerances shown in Table 2, the Contractor, with the approval of the Engineer, shall take corrective action in accordance with this specification.

b) Area- Where the width of the lift exceeds that shown on the plans by more than the designed thickness of each lift, the longitudinal limits of such variation including locations and intervals of the measurements will be documented by the Engineer for use in calculating a HMA adjustment in 4.06.04-2.

c) Delivered Weight of Mixture - When the delivery ticket shows that the truck exceeds the allowable gross weight for the vehicle type the quantity of tons representing the over weight will be documented by the Engineer for use in calculating a HMA adjustment in 4.06.04-2.

Transverse Joints: All transverse joints shall be formed by saw-cutting a sufficient distance back from the previous run, existing bituminous concrete pavement or bituminous concrete driveways to expose the full thickness of the lift. A brush of tack coat shall be used on any cold joint immediately prior to additional bituminous concrete mixture being placed.

Tack Coat Application: A thin uniform coating of tack coat shall be applied to the pavement immediately before overlaying and be allowed sufficient time to break (set). All surfaces in contact with the HMA that have been in place longer than 3 calendar days shall have an application of tack coat. The tack coat shall be applied by a non-gravity pressurized spray system that results in uniform overlapping coverage at a target application rate of 0.07 ± 0.02 gallons per square yard for a non-milled surface and a target application rate of 0.12 ± 0.02 gallons per square yard for a milled surface. For areas where both milled and un-milled surfaces occur, the tack coat shall be a target application rate of 0.07 ± 0.02 gallons per square yard. The Engineer must approve the equipment and the method of measurement prior to use. The material for tack coat shall not be heated in excess of 160°F and shall not be further diluted.

Compaction: The Contractor shall compact the mixture to meet the density requirements as stated in Section 4.06.03-11 and eliminate all roller marks without displacement, shoving, cracking, or aggregate breakage.

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

Rollers operating in the dynamic mode shall be shut off when reversing directions.

If the Engineer determines that the use of compaction equipment in the dynamic vibratory mode may damage highway components, utilities, or adjacent property, the Contractor shall provide alternate compaction equipment. The Engineer may allow the Contractor to operate rollers in the dynamic mode using the oscillatory system at the lowest frequency setting.

These allowances will not relieve the Contractor from meeting pavement compaction requirements.

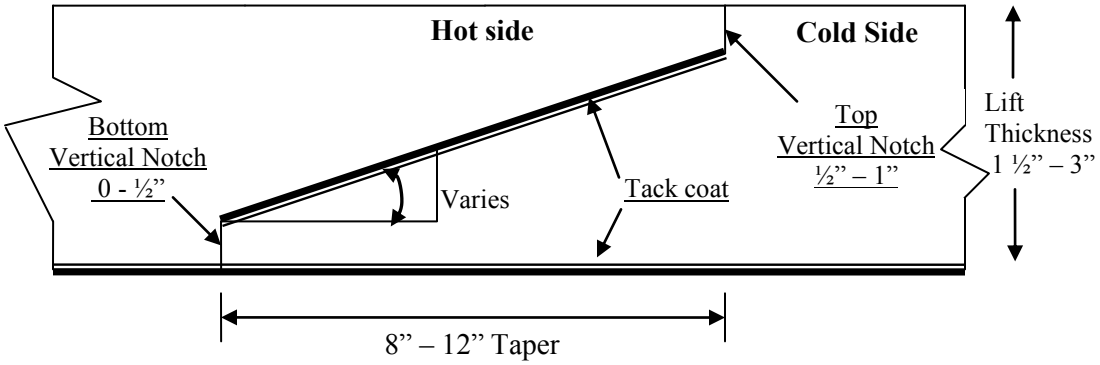
Surface Requirements: The pavement surface of any lift shall meet the following requirements for smoothness and uniformity. Any irregularity of the surface exceeding these requirements shall be corrected by the Contractor.

a) Smoothness- Each lift of the surface course shall not vary more than ¼ inch from a Contractor-supplied 10 foot straightedge. For all other lifts of HMA, the tolerance shall be $^{3}/_{8}$ inch. Such tolerance will apply to all paved areas.

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

8. HMA Longitudinal Joint Construction Methods: Unless noted on the plans or the contract documents or directed by the Engineer, the Contractor shall use Method I- Notched Wedge when constructing longitudinal joints where lift thicknesses are between 1½ and 3 inches. Method II shall be used for lifts less than 1½ inches or greater than 3 inches. During placement of multiple lifts of HMA, the longitudinal joint shall be constructed in such a manner that it is located at least 6 inches from the joint in the lift immediately below. The joint in the final lift shall be at the centerline or at lane lines.

Method I - Notched Wedge Joint:



A notched wedge joint shall be constructed, as shown in the figure using a device attached to the paver screed that is capable of producing a uniform slope.

The taper portion of the joint must be placed over the longitudinal joint in the lift immediately below. The top vertical notch must be located at the centerline or lane line in the final lift. The requirement for paving full width "curb to curb" as described in Method II will be waived in those areas where the notched wedge joint is utilized.

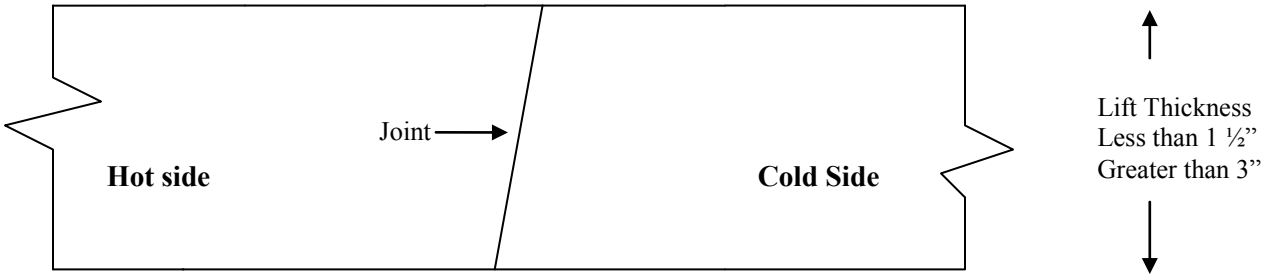
The taper portion of the wedge joint shall be compacted and not be exposed to traffic for more than 5 calendar days.

The existing pavement surface under the wedge joint must have an application of tack coat material. Prior to placing completing pass (hot side), an application of tack coat must be applied to the tapered section.

Any exposed wedge joint must be located to allow for the free draining of water from the road surface.

The Engineer reserves the right to define the paving limits when using a wedge joint that will be exposed to traffic.

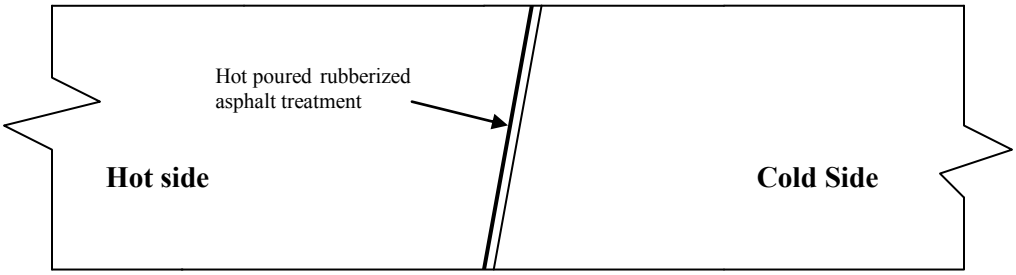
Method II - Butt Joint:



When adjoining HMA passes are placed, the Contractor shall utilize equipment that creates a near vertical edge (refer to figure). The completing pass (hot side) shall have sufficient mixture so that the compacted thickness is not less than the previous pass (cold side). The end gate on the paver should be set so there is an overlap onto the cold side of the joint.

The Contractor shall not allow any butt joint to be incomplete at the end of a work shift unless otherwise allowed by the Engineer. When using this method, the Contractor is not allowed to leave a vertical edge exposed at the end of a work shift and must complete paving of the roadway full width "curb to curb."

Method III- Butt Joint with Hot Poured Rubberized Asphalt Treatment: When required by the contract or allowed by the Engineer, Method III may be used.



All of the requirements of Method II must be met with Method III. In addition, the longitudinal vertical edge must be treated with a hot poured rubberized asphalt material prior to placing a completing pass. The rubberized asphalt material shall be applied in accordance with the manufacturer's recommendation so as to provide a uniform coverage and avoid excess bleeding onto the newly placed pavement.

9. Contractor Quality Control (QC) Requirements for HMA Placement: A Quality Control Plan (QCP) shall be required for any project that has a total of 2500 tons or more of HMA.

Quality Control is defined as all those planned and specified actions or operations necessary to produce bituminous concrete that will meet contract specification requirements. The Contractor shall be responsible for quality control throughout the production and placement operations. Therefore, the Contractor must ensure that the materials, mixture and work provided by Subcontractors, Suppliers and Producers also meet contract specification requirements.

Quality Control Plan: Prior to placement and production, the Contractor shall submit a QCP to the Engineer for approval. The QCP shall include separate sections for HMA Plant Production and for HMA Placement which shall describe the organization and procedures which the Contractor shall use to administer quality control. The QCP shall include the procedures used to control the HMA production and placement process, to determine when immediate changes to the processes are needed, and to implement the required changes. The QCP must address the actions, inspection, sampling and testing necessary to keep the production and placement operations in control, to determine when an operation has gone out of control and to respond to correct the situation and bring it back into control.

The QCP shall also include the name and qualifications of a Quality Control Manager. The Quality Control Manager shall be responsible for the administration of the QCP, including compliance with the plan and any plan modifications. The Quality Control Manager shall be directly responsible to the Contractor and shall have the authority to make decisions where the quality of the work or product is concerned. All sampling, inspection and test reports shall be reviewed and signed by the Quality Control Manager prior to submittal to the Engineer. Approval of the QCP will be based on the inclusion of all of the required information. Approval of the QCP does not imply any warranty by the Engineer that adherence to the plan will result in production of HMA that complies with these specifications. It shall remain the responsibility of the Contractor to demonstrate such compliance. The Contractor may propose in writing a supplement to the QCP as work progresses and must propose a supplement whenever there are changes in production or placement of HMA or to quality control procedures or personnel. HMA production and placement may be suspended by the Engineer until the revisions to the QCP have been put into effect.

The Quality Control Plan shall also include the name and qualifications of any outside testing laboratory performing any QC functions on behalf of the Contractor.

Quality Control Inspection, Sampling and Testing: The Contractor shall perform all quality control sampling and testing, provide inspection, and exercise management control to ensure that HMA production and placement conforms to the requirements as outlined in its QCP during all phases of the work.

a) Control Charts: The Contractor shall develop and maintain control charts and shall be distributed as directed by the Engineer. The control charts shall identify the project, test number, test parameter, applicable upper and lower specification limits, and test data. The control charts shall be used as part of the quality control system to document variability of the HMA production and placement process. The control charts shall be kept current. The

control charts shall be updated each day of HMA production, and up-to-date copies shall be distributed prior to the beginning of the next day's production of HMA.

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

The Contractor shall submit sampling, testing and inspection documents to the Engineer within 24 hours or by noon of the next day's HMA production. If the document is incomplete or in error, a copy of the document will be returned to the Contractor with the deficiencies noted by the Engineer. The Contractor shall correct the deficiencies and return the updated document to the Engineer by the start of the following working day. When errors or omissions in the sampling, inspection or testing documents repeatedly occur, the Contractor shall correct the procedures by which the documents are produced.

If control charts, sampling, testing and inspection documents are not distributed or provided as required within the time specified the Engineer may require work to be suspended until the missing documents have been provided.

Additional requirements for HMA plant production are defined in Section M.04.

10. **Core Correlation Procedure for Density Testing of HMA:** Core correlation is required for all limited access highways and any other roadways in which 10,000 tons or more HMA mixture is placed**.**

This procedure describes the frequency and the method the Contractor shall use to obtain pavement cores from the project. Coring shall be performed the first time a HMA lift requiring density testing is placed. Prior to receiving core results, the HMA density acceptance will be determined using a nuclear density gauge correlated to the standard block located at the Department's Material Testing Laboratory. The gauge will be correlated to the core results once they are known.

The Contractor shall provide a minimum of one set of cores (5 cores per set) for each lift that will be tested for density. The Contractor may be required to provide additional sets of cores under the following conditions:

a) A change in source of component aggregates.
b) Any change in the average Gmm greater than 0.030 as indicated in the plant test results representing cored mixture.
c) Change in materials supplied in Section 4.06.02-1.

The Contractor shall extract 5 cores (6 inch diameter-wet sawed) from sampling locations determined by the Engineer. The Engineer will witness the extraction and labeling of cores. The cores shall be labeled by the Contractor with number, location, date and delivered in a safe manner to ensure no damage occurs (i.e., core 1M for first mat core; core 1J for first joint core,

etc) to Department personnel as directed by the Engineer. The cores will be tested by the Engineer in accordance with AASHTO T 331(M).

Any cores that are damaged or obviously defective while being obtained will be replaced with new cores from a location within a 2 foot radius.

Core holes shall be filled immediately upon core extraction by removing any free water, applying tack coat to the cut surface, filling with same HMA mixture, and compacting with hand compactor or other mechanical means to the maximum compaction possible. The field mixture shall be compacted to $^{1}/_{8}$ inch above the finished pavement prior to opening the roadway to traffic.

11. Acceptance Inspection, Sampling and Testing: Inspection, sampling, and testing to be used by the Engineer shall be performed at the minimum frequency specified in Section M.04 and stated herein.

Sampling for acceptance shall be established using a statistically based procedure of random sampling approved by the Engineer.

HMA Plant Material Acceptance: The Contractor shall provide the required acceptance sampling, testing and inspection during all phases of the work in accordance with Section M.04.

HMA Density Acceptance: All acceptance testing will be performed by the Engineer for the completed pavement course on roadways and bridges in accordance with the Department's density testing procedures. Each lift designed to a compacted lift of 1½ inches or more shall have the HMA pavement including the longitudinal joints compacted to 94.5 +/- 2.5 percent of the maximum theoretical gravity. Bituminous Concrete Class 4 and HMA S1 are excluded from the longitudinal joint density requirements.

12. Density Dispute Resolution Process: The Contractor and Engineer will work in partnership to avoid potential conflicts and to resolve any differences that may arise during quality control or acceptance testing for density. Both parties will review their sampling and testing procedures and results and share their findings. If the Contractor disputes the Engineer's test results, the Contractor must submit in writing a request to initiate the Dispute Resolution Process within 10 calendar days of the placement of the mixture. No request for dispute resolution will be allowed unless the Contractor provides quality control results supporting its position. Should the dispute not be resolved through evaluation of existing testing data or procedures, the Engineer may authorize the Contractor to obtain representative core samples of the pavement. The core samples must be extracted no later than 30 calendar days from the date of Engineer's authorization. Core samples shall be located using the stratified random sampling procedure in accordance with ASTM D 3665 as determined by the Engineer. Core samples shall be extracted and filled using the procedure outlined in the Core Correlation Procedure. The densities from the 5 representative cores will be averaged for determining the final HMA density acceptance including any payment adjustments, in accordance with Section 4.06.04-2, that may apply.

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

If pavement placed by the Contractor does not meet the specifications, and the Engineer requires its replacement or correction, the Contractor shall:

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

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

14. Protection of the Work: The Contractor shall protect all sections of the newly finished pavement from damage that may occur as a result of the Contractor's operations for the duration of the Project. Prior to the Engineer's authorization to open the pavement to traffic, the Contractor is responsible to protect the pavement from damage.

15. Joints and Cracks in Bituminous Concrete Pavement: Work under this section shall consist of constructing new joints or repairing existing joints and cracks.

Equipment: All equipment necessary for the work shall meet the following requirements:

a) Kettle: The unit shall be a combination melter and pressurized applicator of a double-boiler type with space between the inner and outer shells filled with oil or other material not having a flash point of less than 600°F. The kettle shall include a temperature control indicator and mechanical agitator. The kettle shall be capable of maintaining the material at a temperature within 15°F of the manufacturer's recommended temperature.

b) Compressor: The compressor shall have a sufficient capacity and length of hose to enable a continuous sealing operation.

c) Saw: The saw shall be capable of providing a straight cut of uniform depth and width.

Joint Seal Material: Material that is heated or cooled beyond the manufacturer's recommended temperature range shall be discarded.

Sawing and Sealing Joints in Bituminous Concrete Pavement: Work under this item shall consist of making a straight-line saw cut transversely across the final lift of HMA pavement directly over the new and existing Portland Cement concrete (PCC) transverse joints. The sawing and sealing of joints shall be completed for HMA pavements with a total depth of 3 inches or greater. The saw cut shall be immediately cleaned and sealed with a joint seal material. The sawing and sealing shall commence within one week of the completion of the final lift of pavement and be a continuous operation until all joints have been completed.

Prior to the paving operation, the Contractor shall establish sufficient controls to locate each transverse joint. This work shall include setting markers at each joint to reference its location and alignment, and having each of these markers tied and referenced. A written procedure for this work shall be submitted to the Engineer for review prior to commencement of such work.

The saw cut will be made by using diamond saw blades with a gang blade arrangement in order to achieve the joint detail as shown on the plans. The saw cut will be in a straight line across the pavement directly over the joint. Transverse joints shall extend to a point 2 feet beyond the underlying PCC pavement. The sawed joints shall be cleaned with compressed air to the satisfaction of the Engineer.

Immediately following the cleaning, the joint seal material shall be installed. When cooled, the top of the sealant material shall be recessed a minimum of $^{1}/_{16}$ inch but not greater than $^{1}/_{8}$ inch below the adjacent pavement surface. The roadway shall not be opened to traffic until the material has become tack free. Any depression in the sealer greater than $^{1}/_{8}$ inch shall be brought up to the specified limit by further addition of joint seal material. Care shall be taken during the sealing operation to ensure that overfilling and spilling of material is avoided.

Any reflective cracking attributable to improper joint referencing or construction shall be repaired at the expense of the Contractor, in a manner approved by the Engineer for a period of one year from the date of completion of any sawed and sealed portion of final pavement.

Cleaning and Sealing Joints and Cracks in Pavement: Work under this item shall consist of cleaning existing joints and cracks of all dirt, dust, loose joint material, and all deleterious matter with compressed air as directed by and to the satisfaction of the Engineer. After a sufficient number of joints and cracks have been cleaned so as to ensure a continuous operation, all joints and cracks shall be sealed with joint seal material.

Cutting and Sealing Joints in the Bituminous Concrete Shoulder: When PCC pavement is the final wearing surface a longitudinal saw cut at the interface of the bituminous concrete shoulder and PCC pavement shall be made. The saw cut shall be made in the bituminous concrete shoulder to expose the abutting edge of the PCC pavement. The size of the saw cut shall be ½ inch wide by 1½ inches deep.

Kerf Cut in Bituminous Concrete Pavement: If the final lift of pavement will not be completed prior to winter shutdown, each exposed course shall have a ¼ inch by ¼ inch kerf cut above the

new and existing transverse joints. The kerf shall be cut with a saw or abrasive wheel approved by the Engineer. The kerf cut shall not be sealed.

16. Cut Bituminous Concrete Pavement: Work under this item shall consist of making a straight-line cut in the bituminous concrete pavement to the lines delineated on the plans or as directed by the Engineer. The cut shall provide a straight, clean, vertical face with no cracking, tearing or breakage along the cut edge.

4.06.04—Method of Measurement:

1. Bituminous Concrete Class ( ) or HMA S* : The quantity of bituminous concrete measured for payment will be determined by the documented net weight in tons accepted by the Engineer in accordance with this specification and Section M.04.

2. HMA Adjustments: Adjustments may be applied to bituminous concrete quantities and will be measured for payment using the following formulas:

Yield Factor for Adjustment Calculation = 0.0575 Tons/SY/inch

Actual Area = [(Measured Length (ft)) x (Avg. of width measurements (ft))]

Actual Thickness (t) = Total tons delivered / [Actual Area (SY) x 0.0575 Tons/SY/inch]

a) Area: If the average width exceeds the allowable tolerance, an adjustment will be made using the following formula. The tolerance for width is equal to the designed thickness (in.) of the lift being placed.

Tons Adjusted for Area (T_A) = [(L x W_{adj})/9] x (t) x 0.0575 Tons/SY/inch = (-) Tons

Where: L = Length (ft)
(t) = Actual thickness (inches)
W_{adj} = (Designed width (ft) + tolerance /12) - Measured Width)

b) Thickness: If the actual thickness is less than the allowable tolerance, the Contractor shall submit a repair procedure to the Engineer for approval. If the actual thickness exceeds the allowable tolerance, an adjustment will be made using the following formula:

Tons Adjusted for Thickness (T_T) = A x t_{adj} x 0.0575 = (-) Tons

Where: A = Area = {[L x (Designed width + tolerance (lift thickness)/12)] / 9}
t_{adj} = Adjusted thickness = [(Dt + tolerance) - Actual thickness]
Dt = Designed thickness (inches)

c) Weight: If the quantity of bituminous concrete representing the mixture delivered to the project is in excess of the allowable gross vehicle weight (GVW) for each vehicle, an adjustment will be made using the following formula:

Tons Adjusted for Weight (T_W) = GVW – DGW= (-) Tons

Where: DGW = Delivered gross weight as shown on the delivery ticket or measured on a certified scale.

d) Mixture Adjustment: If the quantity of bituminous concrete representing the produced mixture exceeds one or more of the production tolerances for Marshall (Table 3) or Superpave mix designs (Table 3A & 3B) , an adjustment will be made using the following formulas. The Department's Division of Material Testing will calculate the daily adjustment values for T_{MD} and T_{SD}.

(1) *Marshall Design*- The tolerances shown in Table 3 for gradation and binder content will be used to determine whether a mixture adjustment will apply. If the mixture does not meet the requirements of Section M.04, an adjustment will be computed using the following formula:

Tons Adjusted for Marshall Design (T_{MD}) = M x 0.10

Where: M= Tons of bituminous concrete mixture exceeding tolerances in Table 3

TABLE 3
TOLERANCES FOR CONSECUTIVE TESTS (MARSHALL)

Classes	Criteria	% Tolerances (+/-)
-	Binder	0.4
1, 2, 4, 5, 5A & 5B	#200	2.0
1, 2, 4	#50	4
1, 2, 5, 5A & 5B	#30	5
1, 2, 4, 5, 5A & 5B	#8	6
1, 2, 4, 5, 5A & 5B	#4	7
1, 2, 4, 5, 5A & 5B	3/8 & ½ inch	8

(2) *Superpave Design*- The adjustment values in Table 3A & 3B shall be calculated for each sub lot based on the Air Void and Liquid Binder Content test results for that sub lot. The total adjustment for each day's production (lot) will be computed using tables and the following formulas:

Tons Adjusted for Superpave Design (T_{SD}) = (AVa + APb) x Tons

Adjustment for Air Void = $AVa = [(Va_1 + Va_2 + Va_i + \ldots + Va_n)] / n$

Where: Va = Total air void adjustment value for the lot
Va_i = Adjustment value from Table 3A resulting from each sub lot
n = number of air void tests in a production lot

TABLE 3A
ADJUSTMENT VALUES FOR AIR VOIDS (SUPERPAVE)

Adjustment Value (AVa) (%)	**HMA S0.25, S0.375, S0.5, S1 Air Voids (Va)**
+2.5	3.5 - 4.5
0.0	3.0 - 3.4 or 4.6 - 5.0
- 5.0	2.7 - 2.9 or 5.1 - 5.3
- 10.0	2.3 – 2.6 or 5.4 – 5.7
-20.0	$\leq$ 2.2 or $\geq$ 5.8

Adjustment for Liquid Binder = $APb = [(APb_1 + APb_2 + APb_i + \ldots + APb_n)] / n$

Where: APb = Total liquid binder adjustment value for the lot
APb_i = Adjustment value from Table 3B resulting from each sub lot
n = number of binder tests in a production lot

TABLE 3B
ADJUSTMENT VALUES FOR LIQUID BINDER (SUPERPAVE)

Adjustment Value(APb) (%)	**HMA S0.25, S0.375, S0.5, S1 Pb (refer to Table M.04.03-5)**
0.0	Equal to or above the min. liquid content
- 10.0	Below the min. liquid content

e) Density Adjustment: The quantity of bituminous concrete measured for payment for a designed compacted lift of pavement 1½ inches or greater may be adjusted for density. Separate density adjustments will be made for each lot and will not be combined to establish one density adjustment.

Tons Adjusted for Density (T_D) = $\{[PA_M \times .40] + [PA_J \times .60]\}$ X Tons accepted

Where: T_D = Total tons adjusted for density for each lot
PA_M = Mat density percent adjustment from Table 4
PA_J = Joint density percent adjustment from Table 4

TABLE 4
ADJUSTMENT VALUES FOR PAVEMENT DENSITY

Average % Density	**% Adjustment for non-bridge lots**	**% Adjustment for bridge lots**
97.1 – 100	-2.5	- 2.5
94.5 – 97.0	+2.5	+2.5
92.0 – 94.4	0.0	0.0
91.0 – 91.9	-2.5	- 10.0
89.1 – 90.9	-15.0	- 30.0
87.0 – 89.0	-30.0	- 50 or Remove and Replace

86.9 or less	Remove and Replace	Remove and Replace

3. Transitions for Roadway Surface: The installation of permanent transitions shall be measured under the appropriate item used in the formation of the transition.

- The quantity used for the installation of temporary transitions shall be measured for payment under the appropriate HMA item used in the formation of the transition. The installation and removal of a bond breaker, and the removal and disposal of any temporary transition formed by milling or with bituminous concrete pavement is not measured for payment.

4. Cut Bituminous Concrete Pavement: The quantity of bituminous concrete pavement cut will be measured in accordance with Article 2.02.04.

5. Sawing and Sealing Joints: The quantity of sawed and sealed joints measured for payment will be the actual number of linear feet of joints sawed and sealed in the bituminous concrete pavement surface approved by the Engineer.

6. Kerf Cut in Bituminous Concrete Pavement: The quantity of kerf cuts measured for payment will be the actual number of linear feet of kerf cuts in the bituminous concrete pavement surface approved by the Engineer.

7. Cleaning and Sealing Joints and Cracks: The quantity of cleaned and sealed joints and cracks measured for payment will be the actual number of pounds of joint seal material accepted by the Engineer. Weights as marked on the shipping containers shall be used; or if directed by the Engineer, scales shall be furnished by and at the expense of the Contractor, and the joint seal material weighed in a manner satisfactory to the Engineer.

8. Cutting and Sealing Joint in the Bituminous Concrete Shoulder: The quantity of cut and sealed joints measured for payment will be the actual number of linear feet of joints cut and sealed in the bituminous concrete shoulder and approved by the Engineer.

9. Material for Tack Coat: The quantity of tack coat will be measured for payment by the number of gallons furnished and applied on the Project and approved by the Engineer.

Method of Measurement:

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

b. Truck Method- The Engineer will establish a weight per gallon of the bituminous material based on the specific gravity at 60ºF for the material furnished. The number of

gallons furnished will be determined by weighing the material on scales furnished by and at the expense of the Contractor.

10. Material Transfer Vehicle (MTV) - The furnishing and use of a MTV will be measured separately for payment based on the actual number of tons of HMA surface course delivered to a paver using the MTV.

4.06.05—Basis of Payment:

1. Bituminous Concrete Class ( ), HMA S*: The furnishing and placing of bituminous concrete will be paid for at the Contract unit price per ton for "Bituminous Concrete, Class ( )" or "HMA S* ( )."

- All costs associated with providing illumination of the work area are included in the general cost of the work.
- All costs associated with constructing the notched wedge joint are included in the general cost of the work.
- All costs associated with obtaining cores for core correlation and dispute resolution are included in the general cost of the work.

2. **HMA Adjustment Cost**: The "HMA Adjustment Cost" will be calculated using the formula shown below if all of the measured adjustments in 4.06.04 do not equal a value of zero. A payment will be made for an increase in costs. A deduction from monies due the Contractor will be made for a decrease in costs.

Formula: $[T_T + T_A + T_W + (T_{MD}$ or $T_{SD}) + T_D]$ x Unit Price = Est.

Where: Unit Price = Contract unit price per ton per type of mixture
T_T = Total tons of each adjustment calculated in 4.06.04
Est. = Pay Unit represented in dollars representing HMA incentive or disincentive.

The estimated cost figure if included in the bid proposal or estimate is not to be altered in any manner by the bidder. If the bidder should alter the amount shown, the altered figure will be disregarded and the original cost figure will be used to determine the amount of the bid for the Contract.

3. Transitions for Roadway Surface: The installation of permanent transitions shall be paid under the appropriate item used in the formation of the transition. The quantity used for the installation of temporary transitions shall be paid under the appropriate HMA item used in the formation of the transition. The installation and removal of a bond breaker, and the removal and disposal of any temporary transition formed by milling or with bituminous concrete pavement is included in the general cost of the work.

4. The cutting of bituminous concrete pavement will be paid in accordance with Article 2.02.05.

5. The sawing and sealing of joints will be paid for at the Contract unit price per linear foot for "Sawing and Sealing Joints".

6. Kerf cuts will be paid for at the Contract unit price per linear foot for "Kerf Cut in Bituminous Concrete Pavement".

7. The cleaning and sealing of joints and cracks will be paid for at the Contract unit price per pound for "Cleaning and Sealing Joints and Cracks".

8. The cutting and sealing of joints in the bituminous concrete shoulders will be paid for at the Contract unit price per linear foot for "Cutting and Sealing Joint in the Bituminous Concrete Shoulder".

9. Material for tack coat will be paid for at the Contract unit price per gallon for "Material for Tack Coat".

10. The Material Transfer Vehicle (MTV) will be paid at the Contract unit price per ton for a "Material Transfer Vehicle".

Pay Item*	Pay Unit*
Bituminous Concrete, Class ( )	ton
HMA S*	ton
HMA Adjustment Cost	est.
Sawing and Sealing Joints	l.f.
Kerf Cut in Bituminous Concrete Pavement	l.f.
Cleaning and Sealing Joints and Cracks	lb.
Cutting and Sealing Joint in the Bituminous Concrete Shoulder	l.f.
Material for Tack Coat	gal.
Material Transfer Vehicle	ton

*For contracts administered by the State of Connecticut, Department of Administrative Services, the pay items and pay units are as shown in contract award price schedule.

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 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 article 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 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 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, dedicated phone, and separate dedicated data line. 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 M.04.03.

d. Marshall mixtures with RAP: In addition to M.04.02 – 1a through c, RAP in bituminous concrete shall comply with requirements stated in 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 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 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 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 Article 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				120-175°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 tensile strength ratio must be indicated on the certified test report. 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 sections 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 section M.04.01. Upon approval of the Engineer, a maximum of 15% RAP may be used with no binder grade modification for batch plants and drum plants.

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 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 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 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 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 thirty (30) 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 Section 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 Mix Design:** 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 accepted by the Engineer prior to any additional testing. 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 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 Article 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 Mix Design:

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 T 283(M) test results shall be submitted by the Contractor for approval. The acceptable tensile strength ratio shall be 80 percent minimum, and show no evidence of stripping. 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.

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 Subarticle M.04.03 and Article 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 will perform all acceptance and verification testing for HMA production.

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 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 Article 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]	Acceptance min. # of tests
0 to 150	No testing required (if mix already accepted) [3]	1
151 to 600	1 test	1
601 to 1,200	2 tests	2
1,201 to 1,800	3 tests	3
1,801 and greater [4]	4 tests	4

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.
(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 ton 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. Incentive/disincentive adjustment for Superpave mixtures: The quantity of Superpave mixtures shipped to the project that meets the incentive criteria for Air Voids (VA) will be adjusted in accordance with Article 4.06.04.

The quantity of Superpave mixtures shipped to the project that is "off-test" for binder content (Pb) and/or Air Voids (VA) will be adjusted in accordance with Article 4.06.04.

f. Cessation of Supply for Superpave mixtures with no disincentive 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.

i. 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, 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. HMA mixture is "off test" on two (2) consecutive tests for the Gmm in one day's production or on three (3) consecutive tests regardless of date of production.
4. The Pb content from the ignition oven/centrifuge minus the mix moisture differs by more than 0.2 from the HMA plant production weigh ticket, the Contractor shall immediately investigate, determine an assignable cause and correct the issue. If issue is not corrected after three (3) consecutive tests, mixture from that HMA plant shall not be permitted until the issue is resolved to the satisfaction of the Engineer.

5. The Pb content is below the requirements of Table M.04.03 – 5 on the ignition oven test results or the HMA plant weigh ticket.

6. 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. <u>JMF Changes for Superpave mixtures production:</u> 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.

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 7.7.1 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 5 ConnDOT in addition to AASHTO apparatus includes infrared lamp and substitutes graduated cylinder with a 1000 ml flask. Section 6. Reagent. Must be Conn D.O.T. approved ******* Article 8.2.1 all classes of HMA except Class 4 are scooped from the sample container. Section 9.1 and 9.2 Moisture content is periodically determined on production samples as plant conditions require. Section 11.1 See Section 9.0 AASHTO T 164 Section 11.3 and 11.5 Filter paper is dried and weighed in field using heat lamp or oven when an ash test is performed. Section 11.6.2 Extract is collected if an ash test is to be performed Section 11.6.2 Performed on selected samples only Section 11.6.2 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 four 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 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 300 times gravity. 5.1. Centrifuge tubes- a 250ml wide mouth bottles 5.2. 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, Alliham 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 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 3.3 only one truck load of mixture is sampled. Samples are taken from opposite sides of the load.
AASHTO T 209	Section 6.4 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	Section 3.3.1 A molding temperature of 140 to 146 C is used Section 3.5.1 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 (generally five molds per day) for production over 275 metric 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 DRM. 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 ASSHTO procedure Method A exclusively. All modifications are listed for this method only. 5.5. 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. 6.2. Omit Note 2 6.3. Omit. 6.6. Omit. Replace with: Perform a gradation analysis on the burned blank and compare it to the gradation performed prior to burning. 6.7. Omit. 6.8. Omit. The correction factors for each size aggregate are provided by the Engineer. 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.)
AASHTO T 331	5.1 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 5.16.1 (i)*. It can be correlated that the VMA calculated from AASHTO R-35(M) is equivalent to VMA_a when the Pb_a is known and substituted for A_{cf}, as shown in *Formula 5.16.1(i)*. 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 cause, 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.

i. Formula 5.16.1A. Determining the VMA of HMA by the mix or air voids & effective binder method:

$$1. \quad VMA_a = V_a + \left[\frac{(Gmb_d \times (Pb_t - A_{cf})}{G_b} \right]$$

Where: VMA_a = VMA calculated from plant production mix(Va + Vbe)
Gmb_d = Bulk specific gravity as determined by AASHTO T 166(M)
Pb_t = Binder Total content (corrected) by AASHTO T 308(M)
A_{cf} = Absorption correction factor provided by Contractor (refer to b. i thru iii)
Gse = Effective Specific gravity determined by AASHTO M 323

Formula 5.16.1B. Determining the HMA mix binder correction factor for each class by use of Percent absorption of water by AASHTO T 84/85, AASHTO T 315 and D_f method. This value shall be performed by the Contractor during the mix design only and submitted as a JMF value. Three methods for determining the A_{cf} are shown, although method (i) will be the desired method to be used. All three methods are equivalent when the Gsa, Gsb and Pwa are recent and valid for the mix. Since method (iii) is an estimate based on trap rock based mixtures, some allowance and calibration may be needed for mixes that are composed with granite, gravel, or other aggregate materials but the change is estimated to be minimal ($\pm$ 0.1 or less).

i. $A_{cf} = Df \times Pwa$

ii. $(A_{cf} = Pba_From_annual_JMF_submittal)$

iii. $A_{cf} = x1 \ldots x6$

Where: Df = as determined by Formula 5.16.1C.
Pwa = as determined by AASHTO T 84/85
Pba = as determined by AASHTO M 323 (from annual JMF submittal)

MIX	*TRAP ROCK*	*GRAVEL & BROWN TRAP*	*GRANITE & TORRINGTON GRANITE*
S0.25	*0.5*	*1.2*	*0.6*
S0.375	*0.5*	*1.2*	*0.6*
S0.50	*0.4*	*1.0*	*0.5*
S1	*0.4*	*1.0*	*0.5*

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*(M)*)* for each class of material, in accordance with *Formula 5.16.1C*.

2) *Formula 5.16.1C*. Determining the Density Factor *(D_f)* of mix design HMA:

	i. $D_f = \left(\frac{Gse - Gsb}{Gsa - Gsb} \right)$ Where: Df = 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 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.

SECTION 1.06 CONTROL OF MATERIALS

Article 1.06.01 - Source of Supply and Quality:

Delete the last paragraph and replace with the following:

For the following items the contractor shall submit a complete description of the item, with eight (8) copies of shop drawings, cuts and other descriptive literature which completely illustrates such items presented for formal approval. Such approval shall not change the requirements for a certified test report and materials certificate as may be called for. All shop drawings shall be submitted at one time.

Concrete Unit Pavers
Ornamental Steel Fence – 6', 4.5', 3.5', 2.5' HIGH
Bench
Trash Receptacle
Bike Rack
Modular Block Walls
Information Kiosk
Information Sign
Gateway Sign
Removable Ornamental Steel Bollard
Decorative Illumination Items

Required catalog cuts for all items listed above shall be submitted in one package at the same time. All approvals or disapprovals and comments will be returned in one package.

The following CONNDOT Highway Lighting System items shall be submitted for review:

Conductors #2 (color coded, stranded) & #8 (bare, stranded)
Fuse Connectors
Fuses
PVC Conduit
Foundations

Required catalog cuts for all items listed above shall be submitted in one package at the same time. All approvals or disapprovals and comments will be returned in one package.

When required by the contract documents or when ordered by the Engineer, the Contractor shall prepare and submit (8) sets of catalog cuts and/or shop drawings for all illumination items in one package at the same time to the following for approval prior to ordering or fabrication.

Mr. Scott A. Hill
Connecticut Department of Transportation
Facilities Electrical
2800 Berlin Turnpike

P.O. Box 317546
Newington, Connecticut 06131-7546

Attn: Theodore H. Nezames

Article 1.06.02 – Samples and Test – Delete the first paragraph and replace with the following:

"The Contractor must obtain the Engineer's approval of any materials to be incorporated into the Project before beginning to use them for the Project. Approval of materials may be by certification accepted by the Engineer, written permission of the Engineer, or prior approval after documented test or inspection by the Department. Any Project work in which materials are used without (1) approved certification accepted by the Engineer, (2) prior approval after documented test or inspection by the Department, or (3) written permission of the Engineer, may be considered unauthorized by the Engineer, and therefore not to be paid for. Should unacceptable materials be used as determined by the engineer, the contractor shall pay for testing of the materials in question. Contractor will not be paid for work that incorporates unacceptable materials until the contractor has provided documentation by an independent testing laboratory or company to assure compliance with the specifications."

Article 1.06.07 – Certified Test Reports, and Materials Certified.

1) For the materials in the following items, a Certified Test Report will be required confirming their conformance to the requirements set forth in these plans or specifications or both. Should the consignee noted on a Certified Test Report be other than the Prime Contractor, then Materials Certificates shall be required to identify the shipment.

Precast Foundations for Light Standards
Conductors
Anchor Bolts

2) For materials in the following items, a Materials Certificate will be required conforming their conformance to the requirements set forth in these plans or specifications or both.

Precast Foundations for Light Standards
Conductors
Anchor Bolts
Conduit

SECTION 1.07 - LEGAL RELATIONS AND RESPONSIBILITIES

Article 1.07.13 - Contractor's Responsibility for Adjacent Property and Services is supplemented as follows:

The following company and representative shall be contacted by the Contractor to coordinate the protection of their utilities on this project 30 days prior to the start of any work on this project involving their utilities:

ConnDOT - Facilities Design (Illumination) Mr.Frank Cocozza Electrical Engineer 2800 Berlin Turnpike, Unit 1305 PO Box 317546 Newington, CT 06131-7546 Phone 860-594-3176 Email: Frank.Cocozza@ct.gov	**CL&P.** Mr. Vincent Tata, Electrical Job Designer 250 Freight St. Waterbury, CT 06722 Phone: 203-597-4423 Email: tatavj@nu.com
Borough of Naugatuck Mr. Wayne Zirolli Borough Engineer 229 Church Street Naugatuck, CT 06770 Phone: 203-720-7006 Email: wzirolli@naugatuck-ct.gov	

SECTION 1.08 - PROSECUTION AND PROGRESS

Article 1.08.04 - Limitation of Operations - Add the following:

TIME RESTRICTIONS

In order to provide for traffic operations as outlined in the Special Provision "Maintenance and Protection of Traffic," the Contractor will not be allowed to perform any work that will interfere with existing traffic operations on all project roadways as follows:

MAPLE STREET

Monday through Friday between 6:00 a.m. and 9:00 a.m. and between 3:00 p.m. and 6:00 p.m.

Saturday and Sunday at all times unless otherwise approved by the Engineer.

ROUTE 8 SOUTHBOUND OFF-RAMP AT INTERCHANGE 29

Monday through Friday between 6:00 a.m. and 9:00 a.m. and between 3:00 p.m. and 6:00 p.m.

ROUTE 8 SOUTHBOUND ON-RAMP AT INTERCHANGE 28

Monday through Friday between 6:00 a.m. and 9:00 a.m. and between 3:00 p.m. and 6:00 p.m.

The Contractor will be allowed to close this ramp and detour traffic in accordance with the Detour Plan. The duration of the detour shall not exceed 6 weeks. The contractor shall notify the engineer at least 14 days in advance of the start of the ramp closure.

ALL OTHER ROADS

The Contractor shall not be allowed to perform any work that will interfere with one lane of through traffic in each direction on:

Monday through Friday, between 6:00 a.m. & 9:00 a.m. and between 3:00 p.m. & 6:00 p.m. and,

Saturday and Sunday at all times unless otherwise approved by the Engineer.

The Contractor will be allowed to halt traffic to perform necessary work, including utility relocations with the permission of the Engineer, for a period of time not to exceed ten minutes, except as approved by the Engineer.

The contractors' operations shall in no way, as determined by the Engineer in the field, encroach on or affect traffic operations on the expressway.

ADDITIONAL LANE CLOSURE RESTRICTIONS

It is possible that work on adjacent projects may be ongoing simultaneously with this project. The Contractor shall be aware of those projects so that coordination is maintained for proper traffic flow at all times on all project roadways and this coordination is acceptable to the Engineer.

OTHER LIMITATIONS

Field installation of a signing pattern shall constitute interference with existing traffic operations and shall not be allowed except during allowable periods.

No roadway, with the exception of transition areas, shall be open to traffic unless the appropriate pavement markings have been installed. The transition areas shall have pavement markings applied immediately upon opening to traffic.

ITEM #0063512A - ADD ALTERNATE NO. 1 – (RIVER ACCESS AREA COMPLETE)

Description:

This work shall include providing all labor, equipment, materials, transportation and permits required to complete the installation of pedestrian access to the Naugatuck River within the Add Alternate No. 1 limit line in accordance with these Specifications and Contract Drawings. Work shall include, but not be limited to, the furnishing and installation of bituminous concrete walks, embankment wall (Site No. 5), stonedust walks, pavement markings and three rail wood fence, including all removals, grading, and formation of sub-grade.

Materials:

All items shall conform to their appropriate section(s) and provisions of the Standard Specifications and any modifications provided within this project manual's special provisions.

Embankment Wall (Site No. 5):

Shall conform to the special provision for bid item #0601447A – Embankment Wall (site No.) included in this project manual and as detailed within the contract drawings.

Three Rail Wood Fence:

Shall conform to the special provision for bid item #0906202A included in this project manual and as detailed within the contract drawings

Construction Methods:

All items shall conform to their appropriate section(s) and provisions of the Standard Specifications and any modifications provided within this project manual's special provisions.

Bituminous Concrete Walks:

The Contractor shall arrange his schedule such that the surface course of the paved trail is placed after all construction involving heavy vehicles or equipment has been completed such that those vehicles do not travel on the surface course at any time. Any damage to the surface course (depressions, cracking, etc.) caused by heavy vehicles shall be repaired to the Engineer's satisfaction at the Contractor's expense.

Stone Dust Walks:

Shall conform to the detail provided on sheet SD-2 in the contract drawings.
Screenings shall be placed in one layer. Prior to placing, the prepared crushed stone shall be maintained true to line and grade, at all times. The screenings shall be placed to a depth that will result in the proper depth after compaction.

After the screenings are spread, they shall be thoroughly compacted and bound by the use of a vibratory roller. Water may be used during compaction. The direction and intensity

of the stream shall be such that it will not disturb the surface and shall be approved by the Engineer.

The compactive effort shall be as directed by the Engineer but in no case shall it be less than four complete passes.

Any surface irregularities which develop during, or after the work, shall be corrected by loosening material already in place and removing or adding material as required, after which the entire area, including the surrounding surface, shall be recompacted and rebound until it is brought to a firm and uniform surface satisfactory to the Engineer.

Embankment Wall (Site No. 5):

Shall conform to the special provision for bid item #0601445A included in this project manual and as detailed within the contract drawings.

Three Rail Wood Fence:

Shall conform to the detail provided on sheet SD-2 in the contract drawings.
Shall conform to the special provision for bid item #0906202A included in this project manual and as detailed within the contract drawings

Measurement and Payment:

There will be no separate measurement for the various items involved in this work; this work will be paid on a lump sum basis as an add alternate.

Basis of Payment:

Payment under this item shall include all materials, equipment, tools, and labor incidental thereto.

Pay Item	Pay Unit
Add Alternate No.1 (River Access Area Complete)	LS

ITEM #0063513A - ADD ALTERNATE NO. 2 (TREE PLANTINGS COMPLETE)

Description:

This work shall include providing all labor, equipment, materials, transportation and permits required to complete the installation of plant material within the Add Alternate #2 limit lined in accordance with these Specifications and Contract Drawings. Work shall include, but not be limited to, the furnishing and installation of specified plant material, all necessary planting operations, including watering, pruning, staking, guying, spraying, fertilizing, weeding, mulching, etc.; the furnishing and installing of all specified backfill mixes for plant pits; furnishing and installing all mulch for plant pits; and protecting, maintaining, guaranteeing, and replacing plant material and related items.

Material:

All plant material will be subject to the inspection approval of the Engineer at the nursery source or place of growth after the award of this Contract. No plant material shall be dug at the source unit inspected, tagged and approved by the Engineer. Any rejected material shall be substituted with acceptable material.

All plant material when inspected by the Engineer shall not be "heeled-in" or "out-of-ground." Stockpiled material will not be acceptable. All plant material is subject to the inspection and approval by the Engineer once plant material has been delivered to the project site. All plant material shall arrive at the site with the Engineer's permanent tags. Any rejected plant material shall be immediately removed from the project site and replaced with acceptable plant material at no additional cost to the Town.

All plant material shall be accompanied by State Nursery Inspection Certificates, if required by State or Federal Regulations.

Guaranty and Plant Replacement:

All plant material shall be guaranteed by the Contractor and shall be in effect for one (1) year from the date of final acceptance. At the expiration of the guaranty, all plant materials shall be alive and in good growing condition. All plant material not accepted after the first year shall be guaranteed for an additional year.

Construction Methods:

All planting operations shall be performed by personnel familiar with planting procedure under the supervision of a qualified foreman that has read and understood the Specifications and drawings. Balled and burlapped plants shall be dug with firm natural root balls of earth with diameter and depths per American Association of Nurseryman (AAN) Standard for Nursery Stock. Planting shall progress only under favorable weather conditions and will not be permitted when ground is frozen or excessively moist. The contractor shall ascertain the location of

underground lines and structures before planting commences and shall observe all other precautions so as to not disturb or damage any subsurface improvements.

All plant pits shall be excavated with vertical sides with the excavated material removed from the project site. The pits shall be excavated three (3) feet greater in diameter than ball of earth of the tree and sufficiently deep to allow for six (6) inch thick layers of specified backfill material beneath the ball. All plant pits shall be free draining. The Engineer shall be notified in writing of all soil or drainage conditions which may be detrimental to plant growth.

All plants shall be set in the center of the pits, plumb and straight and at such a level, that after settlement, the crown of the plant will be no lower than one inch than the surrounding finished grade.

Tree pits shall be backfilled with a soil mix approved by the Engineer generally consisting of one part peat moss, three parts topsoil, five pounds bonemeal per cubic yard of mixture and, if required, sand.

Trees should be sprayed with an anti-desiccant in accordance with the manufacturer's specifications, as directed by the Engineer.

All plants shall be thoroughly watered to a maximum root depth immediately after planting. Thereafter, water shall be applied as necessary and as many times as seasonal conditions require.

All trees shall have a tree saucer which shall be mulched with two (2) inch deep layer of mulch of the entire saucer area.

All trees shall be pruned immediately after the planting. The amount of pruning shall be limited to the minimum necessary to remove dead wood or injured twigs and to compensate for the loss of roots for transplanting operations. All cuts shall be made flush leaving no stubs.

Measurement and Payment:

This will be no separate measurement for the various items involved in this work; this work will be paid on a lump sum basis as an add alternate.

Basis of Payment:

Payment under this item shall include all materials, equipment, tools, and labor incidental thereto.

Pay Item	Pay Unit
Add Alternate No.2 (Tree Plantings Complete)	LS

ITEM #0201001A - CLEARING AND GRUBBING

Work under this Item shall conform to Section 2.01 of the Standard Specifications and supplemented as follows:

In addition, the Contractor shall remove all logs and miscellaneous debris within the project limits where indicated on the plans or where directed by the Engineer. Also included shall be the removal and disposal of garbage/ trash/ rubbish throughout the project area.

Also included in this Item is removal and disposal of any trees and stumps designated by the Engineer.

Where trees are to be removed, the Engineer shall order the Contractor to cut these trees flush, leave the stumps in place, and chemically treat them to preclude further growth. The treatment shall be subject to review and approval of the Engineer. Any damage caused by unauthorized removal of questionable stumps is the responsibility of the Contractor and he shall be required to repair the structure at his own expense.

All material shall be disposed of off site by the Contractor in a proper manner in accordance with current regulatory standards and in legally acceptable disposal areas at no additional cost to the Owner.

Two weeks prior to the start of any clearing operations the contractor shall notify the Engineer in writing. The Engineer and/or Landscape Architect shall designate specific trees along the trail to be saved. The contractor will be required to protect designated trees to be saved throughout the duration of the project.

Method of Measurement and Basis for Payment:

There shall be no separate measurements for payment under this item but shall be paid for at the contract lump sum price bid for "Clearing and Grubbing," which price shall include all work, materials, tools, equipment, and labor necessary.

Pay Item	Pay Unit
Clearing and Grubbing	LS

ITEM #0202451A - TEST PIT EXCAVATION

Description:

The Contractor shall excavate test pits to locate or examine utilities, subsurface structures, soils, groundwater, drains, pipes, rock, or any other obstacles or conditions when ordered by the Engineer or indicated on the Contract Drawings.

The Contractor shall notify the Engineer when test pits will be made in a specific area, for any purpose.

This work shall consist of the satisfactory removal of all materials including pavements and water within the limits of the test pit as necessary. Also included is the satisfactory stockpiling or disposal of surplus or unsuitable material, backfilling, and compacting of the test pit with suitable material as approved by the Engineer. Work shall be done in conformance with all applicable safety codes and applicable sections of these specifications.

Construction Methods:

Unless otherwise specified, the Contractor shall dig the test pits as indicated on the Contract Drawings or as directed by the Engineer, and notify the Engineer of the results prior to the start of ANY excavation work. The Contractor shall notify the Engineer of any conflicts which may require design revisions, relocations and/or adjustment. No work shall be started within these areas of conflict until authorized by the Engineer.

The Contractor shall measure and record the sizes, configurations, exact horizontal and vertical locations of all utilities, pipes or other obstacles uncovered in the various pits dug under this section. Existing utility information determined by the test pits shall be added to the as-built drawings.

Test pit excavations shall have neat, clean-cut and vertical sides; hand-digging shall be employed when required by the Engineer. Excavation of test pits shall be accomplished by such means as are required to ensure that any underground utilities or structures may be encountered are not damaged. It shall be the Contractor's sole responsibility for any damages incurred during the excavation operations. Any such damages shall be repaired or replaced by the Contractor (if permitted) to the satisfaction of the Engineer at the Contractor's own expense. Where the repair and/or replacement must be done by the Owner, any and all costs thereof shall be borne by the Contractor.

Protect each pit with steel plates, other coverings, fences, barriers or other appropriate materials as deemed necessary. Do not backfill test pits until authorized. Compact backfill materials to 95% to the subgrade elevation or as otherwise directed. The surface of the test pit area shall be restored as directed by the Engineer.

Method of Measurement:

Test pits will be measured for payment by the number of each test pit dug within the limits and to the depths as ordered and approved by the Engineer.

Test pits will only be measured for payment where:

> The location of the test pit is such that said pit will never be incorporated into any excavation being dug for proposed work under this contract.
>
> The test pit will ultimately be within the limits of an excavation required for proposed work under this contract, but said pit must be backfilled for safety or other reasons, as approved by the Engineer, prior to the excavation reaching the location of the pit.

If any pit is not backfilled and subsequently incorporated into the excavation, said pit will not be measured for payment under the Item "Test Pit" but will be measured under the appropriate item.

Basis of Payment:

Payment for this work shall be made at the contract unit price per each "Test Pit" performed to the satisfaction of the Engineer. This price shall include pavement removal, excavation of all materials as required, sheeting, shoring, dewatering, backfill, compaction, restoration of the surface of the "test pit", (including pavement repair if necessary) and all other materials, equipment, tools, labor and work incidental to or necessary for the completion of the work.

Description	Unit
Test Pit Excavation	EA

ITEM #0202513A - REMOVAL OF CONCRETE SIDEWALK

Description:

The work under this item shall consist of the removal and satisfactory disposal of concrete sidewalk as shown on the plans and directed by the Engineer. This work shall include excavation of subbase material in all areas of removal of concrete sidewalk pavement indicated on the plans as sod areas.

Construction Methods:

The Contractor shall use suitable equipment, tools and methods for cutting and trimming, as well as removing the concrete sidewalk, to the neat lines shown on the plans or as directed by the Engineer without disturbing or damaging adjacent sections of sidewalk to remain.

Damage caused by the Contractor's equipment or methods to the areas not designated for removal shall be repaired or restored at the Contractor's expense.

The concrete sidewalk that is removed shall be disposed of from the site by the Contractor to the satisfaction of the Engineer.

All areas designated as “Sod” that coincide with the area for Removal of Concrete Sidewalk the Contractor shall be responsible for the removal of subbase as necessary to allow for a 4” topsoil sodbed and for the thickness of the sod in order to achieve proposed finished grades.

Cutting of concrete sidewalk will conform to Section 2.02 of the Standard Specifications.

Method of Measurement:

This work will be measured for payment by the actual number of square yards of concrete sidewalk removed.

Basis of Payment:

Payment for this work will be made at the contract unit price per square yard for "Removal of Concrete Sidewalk" which price shall include all materials, tools and labor incidental thereto, and all excavation and disposal of surplus material.

Sawcutting will be paid for under "Cut Concrete Sidewalk."

Pay Item	Pay Unit
Removal of Concrete Sidewalk	SY

ITEM #0202532A - REMOVAL OF BITUMINOUS TYPE PAVEMENT

Description:

The work under this item shall consist of the removal and satisfactory disposal of bituminous type pavement, at locations other than roads, as shown on the plans and directed by the Engineer. This work shall include the removal of subbase material in all areas of removal of bituminous type pavement indicated on the plans as turf establishment areas.

Construction Methods:

The Contractor shall use suitable equipment, tools and methods for cutting and trimming, as well as removing the bituminous concrete pavement, to the neat lines shown on the plans or as directed by the Engineer without disturbing or damaging adjacent sections of pavement to remain.

Damage caused by the Contractor's equipment or methods to the areas not designated for removal shall be repaired or restored at the Contractor's expense.

The bituminous concrete pavement that is removed shall be disposed of from the site by the Contractor to the satisfaction of the Engineer.

In all areas designated as “Turf Establishment – Lawn” excavation shall be made to a total depth equal to the cross section of the bituminous pavement plus four inches (4”) of subbase material.

Cutting of bituminous pavement will conform to Section 2.02 of the Standard Specifications.

Method of Measurement:

This work will be measured for payment by the actual number of square yards of bituminous type pavement removed.

Basis of Payment:

Payment for this work will be made at the contract unit price per square yard for "Removal of Bituminous Type Pavement" which price shall include all materials, tools and labor incidental thereto, and all excavation and disposal of surplus material.

Sawcutting will be paid for under "Cut Bituminous Concrete Pavement."

Pay Item	Pay Unit
Removal of Bituminous Type Pavement	SY

ITEM #0202541A –REMOVAL OF DEBRIS AT BRIDGE PIER

Description: Work under this item consists of the removal of timber debris in the vicinity of the center bridge pier as directed by the Engineer and in accordance with this specification.

Construction Methods: Numerous logs and trees have accumulated at the upstream face and sides of the steel pile pier. The contractor shall remove and dispose of this debris from the vicinity of the center bridge pier. The contractor shall be advised that the center pier is approximately 100 feet from either edge of the Naugatuck River and that the pedestrian bridge deck is approximately 8.0 feet wide. If the contractor proposes to work from the bridge deck, he shall provide a load rating analysis, signed and sealed by a professional engineer registered in the State of Connecticut, to the engineer for review and approval.

Method of Measurement: This work will be not be measured for payment.

Basis of Payment: This work will be paid for at the contract lump sum price, for "Removal of Debris at Bridge Pier", removed from the site, which price shall include all materials, equipment, tools and labor incidental thereto.

Pay Item	Pay Unit
Removal of Debris at Bridge Pier	LS

ITEM NO. 0202540A – PARTIAL REMOVAL OF STEEL BIN WALL

Description:

Work under this item shall consist of the partial removal of sections of an existing steel bin wall to the limits shown on the plans or as directed by the Engineer.

Construction Methods:

The Contractor shall take care during the removal of existing portions of the steel bin wall that sections of the wall to remain will not be damaged. Any material that is damaged shall be replaced by the Contractor at no cost to the Owner.

All materials removed shall be removed and disposed of by the Contractor as directed by the Engineer.

Method of Measurement:

Payment under Partial Removal of Steel Bin Wall shall be at the contract lump sum price which shall include all the removal of steel bin wall sections, disposal of materials and all work and equipment required.

Basis of Payment:

This work will be paid for at the contract lump sum price for "Partial Removal of Steel Bin Wall" which price shall include removing and disposing of bin wall sections to the limits shown on the plans, disposal of the materials and all equipment, material, tools and labor incidental thereto.

Pay Item	Pay Unit
Partial Removal of Steel Bin Wall	L.S.

ITEM #0210100A – ANTI-TRACKING PAD

Description:

The work under this item shall include any excavation, filter fabric installation, placement of crushed stone, tracking pad maintenance, removal of the tracking pad, and restoration of the area as detailed on the plans.

Materials:

The stone for the tracking pad must meet the requirements of Section M.01.01 for No. 3 stone.

The filter fabric shall be Amoco No. 4553 Filter Fabric or approved equal.

Construction Methods:

The anti-tracking pad shall be constructed as shown in the plans. The Contractor will be responsible to maintain this pad (i.e. add stone, regrading, etc.) for the duration of the project.

At the completion of the project, the Contractor shall remove the pad, dispose of pad materials, and restore the pad area to its original configuration. All material shall be disposed of in a proper manner in accordance with current regulatory standards and in legally acceptable disposal areas.

Method of Measurement:

The quantity to be included for payment under this item shall be the number of square yards of anti-tracking pad installed.

Basis of Payment:

This work shall be paid for at the contract unit price per square yard for "Anti-tracking Pad," which price shall include all equipment, tools, and labor incidental for pad excavation, filter fabric and pad installation, maintenance, and removal.

Description	Unit
Anti-Tracking Pad	SY

ITEM #0406005A – PERMANENT PAVEMENT REPAIR - LOCAL ROADS

Description:

The work under this item shall consist of the replacement of bituminous concrete pavement as indicated on the plans and where directed by the Engineer. The work for this item includes removal of existing pavement, excavation, backfilling, disposal of surplus material, processed aggregate base, tack coat and bituminous concrete.

Materials:

Bituminous concrete shall conform to the provisions of Section M.04 of the Standard Specifications.

Processed aggregate base shall conform to the provisions of Article M.05.01 of the Standard Specifications.

Reclaimed aggregate is not acceptable.

Construction Methods:

Excavation and grading shall be performed in accordance with the provisions of Article 2.02.03 of the Standard Specifications.

Compacted gravel subbase shall be placed and compacted in accordance with applicable portions of Article 2.12.03 of the Standard Specifications.

Processed aggregate base shall be placed and compacted in accordance with applicable portions of Article 3.04.03 of the Standard Specifications.

Bituminous concrete courses shall be constructed in accordance with the provisions of Article 4.06.03 of the Standard Specifications.

Tack coat spread in accordance with Article 4.06.03 of the Standard Specifications.

Method of Measurement:

This work will be measured by the actual number of square yards of the type of completed bituminous concrete pavement repaired.

Basis of Payment:

This work will be paid for at the contract unit price per square yard for "Permanent Pavement Repair ", complete in place, which shall include all excavation, backfill, disposal of surplus material, subbase, compacted processed aggregate, bituminous concrete, tack coat and all equipment, tools labor and materials incidental thereto.

Description	Unit
Permanent Pavement Repair	SY

ITEM #0601019A – CHEMICALLY STAIN CONCRETE

Description:

The work under this item shall consist of cleaning the exiting concrete deck and bridge scuppers and application of a solid color stain on the General Pulaski Pedestrian Bridge.

Materials:

Water-based, Non-Reactive, Solid Color Stains shall be multi-component, water-based, non-reactive, non-corrosive, penetrating, breathable, non-acrylic based staining product that mechanically bonds with cured concrete or cementitious toppings to produce solid (completely opaque) color effects and does not necessarily need to be sealed, but is compatible with acrylic-based and solvent-based sealers. Color: T.B.D.

The color stain shall be provided by the following companies:

SOLID COLOR STAIN™
NEWLOOK INTERNATIONAL, INC.,
Salt Lake City, Utah
(801) 886-9495.

Rembrandt Polymer Stain
EPMAR Corporation,
13240 Barton Circle; Whittier, CA 90605-3254;
Tel: 562-236-1175;
Email: (villaw@quakerchem.com)

H&C Concrete Coatings
101 Prospect Ave.
Cleveland, Ohio 44115
1-800-867-8246

Or approved equivalent.

Construction Methods:

Verification of Conditions: Contractor shall examine areas and conditions under which work will be performed and identify conditions detrimental to proper and timely completion of work. Do not proceed until unsatisfactory conditions have been corrected. The Contractor is to follow specific manufacturer's instructions for site preparation, mixing and application of stain product.

Existing Concrete:

1. Clean concrete surfaces so that surfaces are completely penetrable before receiving the initial application of chemical stain. Test surfaces to receive stain by spotting with water. Water should immediately darken the substrate and be readily absorbed. If water beads and does not penetrate or only penetrates in some areas, additional surface preparation and testing shall be performed.
2. Cleaning method used depends on the condition of the concrete surface. To remove dirt and other contaminates, detergents and other commercial grade cleaners should be considered and tested.
3. Rinse concrete substrates until rinse water is completely clean.

4. With a 60-80 mesh-sanding screen or a grit brush, remove all contaminates and weak cement paste from the surface. This will also open the surface to allow the chemical stain to penetrate.
5. Acid washing may also be required.

MIXING OF WATER-BASED, NON-REACTIVE, SOLID COLOR STAIN

A. Dilute and mix the product strictly according to the Manufacturer's printed instructions included with the product. Use a power drill, mixing paddle and bristle brush to completely blend all powder and liquid pigments.

B. Product shall be mixed and used within Manufacturer's recommended time frame of three (3) hours.

APPLICATION OF WATER-BASED, NON-REACTIVE, SOLID COLOR STAIN

A. Concrete surfaces shall be dry and properly prepared as described above. Protect surrounding areas from over-spray, run-off and tracking. If the entire Project is not to be completed within the same time period divide surfaces into small work sections using wall, joint lines, or other stationary breaks as natural stopping points.

B. Apply mixed (diluted) water-based, non-reactive, Solid Color Stains at the coverage rate recommended by the manufacturer and use application equipment described in the manufacturer's printed technical literature—use the specific applicator brush recommended by and supplied by manufacturer. Re-broom and back-brush over the wet material as it dries without adding additional material to the area. When the area being stained has dried sufficiently, apply material to the next area and begin the same process of re-brooming and back-brushing the new area as it dries. The color of the liquid stain has no resemblance to the final color produced on the concrete substrate.

C. Reaction and drying time depends on wind conditions, temperatures (ambient and concrete), and humidity levels.

D. The second coat, if required, should be applied after the first coat has dried sufficiently, normally 1-2 hours after application depending on temperature and humidity. A third coat of solid color stain should not be applied.

E. On vertical surfaces, brush solid color stain using the specific applicators brush recommended by and supplied by manufacturer. Take extra precaution to avoid dripping and spilling material given its high viscosity.

PROTECTION

A. Protect floor from foot traffic for at least 24 hours after stain dries.

B. Do not drive on surface for at least 48 hours after stain dries.

C. Do not park vehicles on surface for at least 1 month after it dries. Place cardboard under vehicle tires if parking on surface is necessary.

D. Do not pressure-wash surface for at least 1 week after stain dries.

Method of Measurement:

This work will be measured by the actual number of square feet of existing concrete stained. The cleaning of existing weep holes will not be measured for payment.

Basis of Payment:

This work will be paid for at the contract unit price per square foot for "Chemically Stained Concrete ", complete in place, which shall include all cleaning and stain of exiting concrete deck and existing weep holes and all equipment, tools labor and materials incidental thereto.

Description	Unit
Chemically Stained Concrete	SF

ITEM #0601445A - EMBANKMENT WALL (SITE NO. 1)
ITEM #0601446A - EMBANKMENT WALL (SITE NO. 2)

Description: This item will consist of designing, furnishing and constructing an embankment retaining wall in the location, grades, and to the dimensions and details shown on the contract drawings, and in accordance with these specifications.

Retaining Wall Selection: The Contractor shall select the proprietary embankment retaining wall from the Department's current approved list shown below. The Engineer will reject any proposed retaining wall that is not listed below.

The following is a list of the proprietary embankment retaining walls for this project:

1. VERSA-LOK Retaining Wall
VERSA-LOK of New England
P.O. Box 6002
Nashua, NH 03063
(603) 883-3042

2. MESA Retaining Wall System
TENSAR Earth Technology, Inc.
227 Ritter Road
Sewickley, PA 15143
(412) 749-9190

3. KeySystem I Retaining Wall
Keystone Retaining Wall Systems
13453 County Road 1
Fairhope, AL 36532
(251) 990-5761

4. Pyramid Modular Blockwall
The Reinforced Earth Company
133 Park Street
North Reading, MA 01864
(978) 664-2830

5. Redi-Rock Retaining Wall-
Cobblestone Face Mold
Redi-Rock Walls-CT Division
68A South Canal Street
Plainville, CT 06062
(860) 793-6805

No other proprietary retaining walls will be allowed for this project.

This listing does not warrant that the individual walls can be designed to meet either the dimensional, structural, or geotechnical constraints at each site.

Design:

1 - Design Computations: It is the Contractor's responsibility for the design, detailing and additional construction specifications required to construct the wall. The actual designer of the retaining wall shall be a qualified Professional Engineer licensed in the State of Connecticut.

2 - Designer's Liability Insurance: The Designer shall secure and maintain at no direct cost to the Borough, a Professional Liability Insurance Policy for errors and omissions in the minimum amount of Five Hundred Thousand Dollars ($500,000). The designer may, at his

election, obtain a policy containing a maximum One Hundred Twenty Five Thousand Dollars ($125,000) deductible clause, but if he should obtain a policy containing such a clause, the designer shall be liable to the extent of the deductible amount. The Designer shall obtain the appropriate and proper endorsement to its Professional Liability Policy to cover the indemnification clause in this contract as the same relates to negligent acts, errors or omissions in the work performed by the Designer. The Designer shall continue this liability insurance coverage for a period of three years from the date of the acceptance of the work by the agency head as evidenced by a certificate of acceptance issued to the contractor or for three years after the termination of the contract, whichever is earlier, subject to the continued commercial availability of such insurance.

The designer shall supply the certificate of this insurance to the Engineer prior to the start of construction of the wall. The designer's insurance company shall be licensed in the State of Connecticut.

3 - Preliminary Submissions: Prior to the start of fabrication or construction, the Contractor shall submit to the Engineer a design package, which shall include, but not be limited to the following:

a. Detailed Plans:

- Plan sheets shall be approximately 24" x 36"
- Stamped by a licensed Professional Engineer (Connecticut).
- Full plan view of the wall drawn to scale. The plan view must reflect the horizontal alignment and offset from the horizontal control line to the face of the wall. Beginning and ending stations, all utilities, signs, lights, etc. that affect the construction along with all property lines and easement lines adjacent to the wall shall be shown.
- Full elevation view of the wall drawn to scale. Elevation views should indicate the elevation at the top and bottom of walls, horizontal and vertical break points, and the location of finished grade.
- Typical cross sections drawn to scale including all appurtenances. Detailed cross section should be provided at significant reinforcement transitions such as wall ends.
- Details of all wall components and their connections such as the length, size and type of soil reinforcement and where any changes occur; facing details; connections;etc.
- Certified test reports indicating the connection strength versus normal load relationship for the block-soil reinforcement connection to be used.

- Drainage details for embankment backfill including attachment to outlets shown on contract drawings.

- Details of any roadway drainage pipe projecting through the wall, or any attachments to the wall. Details of the treatment of drainage swales or ditches shown on the contract drawings.

- Design parameters used along with AASHTO references.

- Material designations for all materials to be used.

- Detailed construction methods including a quality control plan. Construction quality control plans should include monitoring and testing frequencies (e,g, for setting batter and maintaining horizontal and vertical control). Construction restraints should also be listed in the details. Specific requirements for construction around obstructions should be included.

- Details of installation of protective fencing where required.

- Details of Architectural Treatment where required.

- Details of Temporary Earth Retaining System(s) where required.

- Details of wall treatment where the wall abuts other structures.

- Treatment at underground utilities where required.

b. Design Computations:

- Stamped by a licensed Professional Engineer (Connecticut).

- Computations shall clearly refer to the applicable AASHTO provisions as stated in the Notes on the Contract Drawings.

- Documentation of computer programs including all design parameters.

c. Construction Specifications:

- Construction methods specific to the proprietary retaining wall chosen. These specifications should include construction limitations including vertical clearance, right-of-way limits, etc. Submittal requirements for materials such as certification, quality, and acceptance/rejection criteria should be included. Details on connection of modular units

and connection of reinforcements such that assurance of uniform stress transfer should be included.

- Any requirements not stated herein.

The submissions for proprietary retaining walls shall be treated as working drawings according to Section 1.05 amended as follows:

a. Six sets of each submission shall be supplied to the State

b. The Contractor shall allow 21 days for the review of each submission. If subsequent submissions are required as a result of the review process, 21 days shall be allowed for review of these submissions. No extensions in contract time will be allowed for the review of these submissions.

4 - Final Submissions: Once a proprietary retaining wall design has been reviewed and accepted by the Department, the Contractor shall submit the final plans. The final submission shall include one set of full size (approximately 24" x 36") mylar sheets and five sets of full size blue line copies.

The final submission shall be made within 14 days of acceptance by the State. No work shall be preformed on the retaining wall until the final submission has been received by the Department.

Acceptance of the final design shall not relieve the Contractor of his responsibility under the contract for the successful completion of the work.

The actual designer of the proprietary retaining wall is responsible for the review of any shop drawings prepared for the fabrication of the wall. One set of full size blue line copies of all approved shop drawings shall be submitted to the Department's permanent records.

5 - General Design Requirements:

a. All designs for proprietary walls and temporary earth retaining systems shall conform to the latest edition of the American Association of State Highway and Transportation Officials (AASHTO) Standard Specifications for Highway Bridges and later interims published except as noted otherwise herein:

b. The wall design shall follow the general dimensions of the wall envelope shown in the contract plans.

c. The top of the concrete leveling pad shall be located at or below the theoretical leveling pad elevation. The minimum wall embedment shall be two feet as measured to the top of the leveling pad or as shown on the plans.

d. If footing steps are required, they shall be kept below the minimum embedment depth. Footing steps in addition to those shown on the plans will be permitted at no additional cost to the State.

e. The wall shall be designed to be within all property lines and easement lines shown on the contract drawings. If additional work areas are necessary for the construction of the proprietary retaining wall, the Contractor shall be responsible for obtaining the rights from the affected property owners. Copies of these rights shall be forwarded to the Department.

f. The top of the wall shall be at or above the top of the wall elevations shown on the plans. The top of the wall may be level or sloped to meet the top of the wall line noted.

g. Cast-in-place concrete will not be an acceptable replacement for areas noted by the wall envelope, except for minor grouting of pipe penetrations.

h. The mechanical wall height for the purposes of design calculations shall be from the top of the leveling pad to the top of the potential failure surface where the failure surface intercepts the ground surface.

i. The minmum length of internal soil reinforcement shall be as specified in AASHTO 5.8.1, except for the minimum eight (8.0') foot length requirement.

i. If there are specific surcharges acting on the wall, they shall also be accounted for. The minimum equivalent fluid pressure used to design the wall shall be 33 lbs./ft^2 per linear foot of wall.

j. The maximum allowable bearing capacity of the soil shall be assumed to be 4 ksf unless otherwise shown on the plans. If additional soils information is required by the designer, it must be obtained by the Contractor and will not be reimbursed by the State.

k. For limit state allowable stress computations of extensible reinforcements, the combined factor of safety for construction damage and environmental/aging effects shall not be less than 1.75.

Materials: Materials shall conform to the following requirements and those not listed below shall be as prescribed within the Standard Specifications for Roads, Bridges and Incidental Construction, including supplemental specifications and applicable special provisions.

1 – Facing Block**:** The facing block can be precast or drycast concrete and shall be the color specified on the plans. The block shall meet the following requirements:

a. Drycast Concrete:

i. The minimum compressive strength of the block shall be 4000 psi measured at 28 days.

ii. The maximum water absorption shall be less than five percent.

The Contractor shall submit to the Engineer a certified test report confirming the compressive strength and water absorption conform to the requirements of ASTM C-140.

b. Precast Concrete: Shall conform to the requirements of Section M.03 and as follows:

i. The minimum compressive strength of the block shall be 4000 psi measured at 28 days.

ii. All precast concrete components shall be air-entrained composed of portland cement, fine and coarse aggregates, admixtures and water. The air-entraining feature may be obtained by the use of either air-entraining portland cement or an approved air-entraining admixture. The entrained-air content shall be not less than four percent or more than seven percent.

2 - Geosynthetic Soil Reinforcement: The minimum strength of the geosynthetic soil reinforcement shall be based on experimental data. The Contractor shall submit to the Engineer a certified test report confirming the strength of the material when tested according to the methods specified in ASTM D5262 and extrapolated according to ASTM D2837 as outlined in AASHTO Article 5.8.7.2.

3 – Metallic Soil Reinforcement: All soil reinforcement and structural connectors shall be hot dipped galvanized according to the requirements of ASTM A123 (AASHTO M-111). The minimum thickness of the galvanizing shall be based on the service life requirements as previously stated.

Steel strip reinforcement shall be hot rolled to the required shape and dimensions. The steel shall conform to AASHTO M223 (ASTM A572) Grade 65 unless otherwise specified.

Welded wire fabric reinforcement shall be shop fabricated from cold-drawn wire of the sizes and spacings shown on the plans. The wire shall conform to the requirements of ASTM A82, fabricated fabric shall conform to the requirements of ASTM A185.

4 - Metal Connectors: All metal hardware shall be hot dipped galvanized according to the requirements of ASTM A123 (AASHTO M-111). The minimum thickness of the galvanizing shall be based on the service life requirements in the AASHTO Specifications.

5 - Backfill Material: The material for backfill shall be Pervious Structure Backfill conforming to the requirements of Articles M.02.05 and M.02.06.

6 - Facing Sealer: The face of all exposed drycast block shall be coated with clear Penetrating Sealer Protective Compound conforming to the requirements of Article M.03.02

Construction Methods: All construction methods for items not listed below shall be in accordance with the detailed requirements prescribed for the construction of the several contract items entering into the completed structure as specified in the Standard Specifications for Roads, Bridges, and Incidental Construction.

1 - Installation: The foundation for the structure shall be graded level for a width equal to or exceeding the length of the soil reinforcements, or as shown on the plans. If rock is encountered in the excavation, it shall be removed to provide a level area equal to or exceeding the length of the soil reinforcements, but not greater than the pay limits shown on the plans.

Prior to wall construction, the foundation, if not in rock, shall be compacted as directed by the Engineer. Any foundation soils found to be unsuitable shall be removed and replaced.

At each foundation level, an unreinforced concrete leveling pad shall be provided as shown on the plans. The leveling pad shall have nominal dimensions of 6 inch thickness and 24 inch width, and shall be cast using minimum 2,000 psi 28-day compressive strength concrete. The leveling pad shall be cast to the design elevations as shown on the plans. Allowable elevation tolerances are +0.01 foot (1/8 inch), and -0.02 foot (1/4 inch), from the design elevation.

The materials for the wall shall be handled carefully and installed in accordance with manufacturer's recommendations and specifications. Special care shall be taken in setting the bottom course of blocks to true line and grade.

All blocks above the first course shall interlock with the lower courses by means of connecting pins. Vertical joints shall be staggered with each successive course as shown on the working drawings. Vertical tolerances and horizontal alignment tolerances measured from the face line shown on the plans shall not exceed ½ inch when measured along a 8-foot straightedge. The overall tolerance of the wall from top to bottom shall not exceed ½ inch per eight feet of wall height or one inch total, whichever is the lesser, measured from the face line shown on the plans. A bond breaker shall be placed between the blocks and any adjacent cast-in-place concrete.

2 - Backfilling: Backfill placement shall closely follow erection of each course of panels. Backfill shall be placed in such a manner as to avoid any damage or disturbance to the wall materials or misalignment of the facing panels. Any wall materials which become damaged or disturbed during backfill placement shall be either removed and replaced at the Contractor's expense or corrected, as directed by the Engineer. Any backfill material placed within the reinforced soil mass which does not meet the requirements of this specification shall be corrected or removed and replaced at the Contractor's expense.

Backfill shall be compacted to 95 percent of the maximum density as determined by AASHTO T-99, Method C or D (with oversize correction, as outlined in Note 7).

The moisture content of the backfill material prior to and during compaction shall be uniform throughout each layer. Backfill material shall have a placement moisture content less

than or equal to the optimum moisture content. Backfill material with a placement moisture content in excess of the optimum moisture content shall be removed and reworked until the moisture content is uniform and acceptable throughout the entire lift. The optimum moisture content shall be determined in accordance with AASHTO T-99, Method C or D (with oversize correction, as outlined in Note 7).

If 30 percent or more of the backfill material is greater than 19 mm in size, AASHTO T-99 is not applicable. For such a material, the acceptance criterion for control of compaction shall be either a minimum of 70 percent of the relative density of the material as determined by a method specification provided by the wall supplier, based on a test compaction section, which defines the type of equipment, lift thickness, number of passes of the specified equipment, and placement moisture content.

The maximum lift thickness after compaction shall not exceed 10 inches, regardless of the vertical spacing between layers of soil reinforcements. The Contractor shall decrease this lift thickness, if necessary, to obtain the specified density. Prior to placement of the soil reinforcements, the backfill elevation at the face shall be level with the connection after compaction. From a point approximately three feet behind the back face of the panels to the free end of the soil reinforcements the backfill shall be two inches above the attachment device elevation unless otherwise shown on the plans.

Compaction within three feet of the back face of the panels shall be achieved by at least three passes of a lightweight mechanical tamper, roller or vibratory system. The specified lift thickness shall be adjusted as warranted by the type of compaction equipment actually used. Care shall be exercised in the compaction process to avoid misalignment of the panels or damage to the attachment devices. Heavy compaction equipment shall not be used to compact backfill within three feet of the wall face.

At the end of each day's operation, the Contractor shall slope the last level of backfill away from the wall facing to direct runoff of rainwater away from the wall face. The Contractor shall control and divert runoff at the ends of the wall such that erosion or washout of the wall section does not occur. In addition, the Contractor shall not allow surface runoff from adjacent areas to enter the wall construction site.

3 - Face Sealer: After the wall has been erected, the entire exposed face of the wall shall be coated with Penetrating Sealer Protective Compound. The application of the sealer shall conform to the requirements Article 8.19.03.

Several samples of the dry cast block shall be sealed prior to sealing the actual wall to ensure that the sealer will not discolor the block. If the sealer does discolor the block, the Contractor shall change to another approved supplier of sealer.

Method of Measurement: This work will be paid for on a lump sum basis and will not be measured for payment.

Basis of Payment: This work will be paid for at the contract lump sum for "EMBANKMENT WALL (SITE NO. 1)" and "EMBANKMENT WALL (SITE NO. 2)", complete in place, which price shall include all work shown within the pay limits shown on the plans for the retaining wall including but not limited to the following:

1. Design, detailing, and specifications for the wall.
2. Excavation for the wall
3. Design and Construction of temporary earth retaining systems for the support of the slope during construction.
4. Construction of the Embankment Wall, including the unreinforced concrete leveling pad.
5. The furnishing, placing and compacting of pervious structure backfill within the maximum payment lines.
6. The furnishing and placing of backfill drainage systems for the wall.
7. Any other work and materials shown on the plans for the construction of the wall.

The price shall also include all materials, equipment, tools and labor incidental thereto.

If bedrock or large boulders (greater than one cubic yard) are encountered in the excavation, the payment for it's removal will be made under the item "Structure Excavation - Rock".

Description	Unit
Embankment Wall (Site No. 1)	LS
Embankment Wall (Site No. 2)	LS

ITEM #0601653A - RETAINING WALL (SITE NO. 3)
ITEM #0601654A - RETAINING WALL (SITE NO. 4)

Description: This item will consist of designing, furnishing and constructing a retaining wall in the location, grades, and to the dimensions and details shown on the contract drawings, and in accordance with these specifications.

Retaining Wall Selection: The wall chosen shall be selected from the list shown on the contract drawings. The contract drawings may detail a cast-in-place reinforced concrete retaining wall. This type of retaining wall may also be used as an option. The Engineer will reject any proposed retaining wall that is not listed on the contract drawings.

The list on the contract drawings is for all proprietary retaining walls that are appropriate for each site. This list does not warrant that the walls can be designed to meet either the dimensional, structural, or geotechnical constraints at each site.

The following is a list of the Department's current approved proprietary retaining walls, no other proprietary retaining walls will be allowed:

NOTE: SEE THE CONTRACT DRAWINGS FOR THE SPECIFIC WALLS THAT ARE ACCEPTABLE FOR EACH SITE.

Prefabricated Modular Walls

1. Doublewal-Standard Module
Doublewal
173 Church Street
Yalesville, CT 06492
(203) 269-3119

2. T-Wall Retaining Wall System
The Neel Company
8328-D Traford Lane
Springfield, VA 22152
(703) 913-7858

Design: Design computations are not required for the cast-in-place wall detailed on the contract drawings except for any temporary earth retaining systems included in the lump sum item. The Contractor shall submit working drawings and design computations for temporary earth retaining systems in accordance with Article 7.14.03.

1 - Design Computations: If the Contractor chooses one of the proprietary wall options, he is fully responsible for the design, detailing and additional specifications required. The actual designer of the retaining wall shall be a qualified Professional Engineer licensed in the State of Connecticut. The designer must have designed at least three proprietary walls within the last three years.

2 - Designer's Liability Insurance: The Designer of the proprietary retaining wall shall secure and maintain at no direct cost to the Department, a Professional Liability Insurance Policy for errors and omissions in the minimum amount of One Million Dollars ($1,000,000). The

Designer may, at his election, obtain a policy containing a maximum Two Hundred Fifty Thousand Dollars ($250,000) deductible clause, but if he should obtain a policy containing such a clause, the Designer shall be liable to the extent of the deductible amount. The Designer shall obtain the appropriate and proper endorsement to its Professional Liability Policy to cover the indemnification clause in this contract as the same relates to negligent acts, errors or omissions in the work performed by the Designer. The Designer shall continue this liability insurance coverage for a period of three years from the date of the acceptance of the work by the agency head as evidenced by a certificate of acceptance issued to the contractor or for three years after the termination of the contract, whichever is earlier, subject to the continued commercial availability of such insurance.

The Designer shall supply the certificate of this insurance to the Engineer prior to the start of construction of the wall. The designer's insurance company shall be licensed in the State of Connecticut.

3 - Preliminary Submissions for Proprietary Retaining Walls: Prior to the start of fabrication or construction, the Contractor shall submit to the Engineer a design package, which shall include, but not be limited to the following:

a. Detailed Plans:

- Plan sheets shall be approximately 24" x 36".
- Stamped by a licensed Professional Engineer (Connecticut).
- Full plan view of the wall drawn to scale. The plan view must reflect the horizontal alignment and offset from the horizontal control line to the face of the wall. Beginning and ending stations, all utilities, signs, lights, etc. that affect the construction along with all property lines and easement lines adjacent to the wall shall be shown.
- Full elevation view of the wall drawn to scale. Elevation views should indicate the elevation at the top and bottom of walls, horizontal and vertical break points, and the location of finished grade.
- Typical cross sections drawn to scale including all appurtenances. Detailed cross section should be provided at significant reinforcement transitions such as wall ends.
- Details of all wall components and their connections such as the length, size and type of reinforcement and where any changes occur; modular component and facing details including reinforcing steel and reinforcement connections; joint material including geotextile filter location and horizontal joint compression material, etc.

- Drainage details for embankment backfill including attachment to outlets shown on contract drawings.

- Details of any roadway drainage pipe projecting through the wall, or any attachments to the wall. Details of the treatment of drainage swales or ditches shown on the contract drawings.

- Design parameters used along with AASHTO references.

- Material designations for all materials to be used.

- Detailed construction methods including a quality control plan. Construction quality control plans should include monitoring and testing frequencies (e,g, for setting batter and maintaining horizontal and vertical control). Construction restraints should also be listed in the details. Specific requirements for construction around obstructions should be included.

- Details of parapet attachments where required along with any lighting and/or signing requirements.

- Details of Architectural Treatment where required.

- Details of Temporary Earth Retaining Systems where required.

- Details of wall treatment where the wall abuts other structures.

- Treatment at underground utilities where required.

b. Design Computations:

- Stamped by a licensed Professional Engineer (Connecticut).

- Computations shall clearly refer to the applicable AASHTO provisions as stated in the Notes on the Contract Drawings.

- Documentation of computer programs including all design parameters.

- The design shall conform to the criteria listed below.

c. Construction Specifications:

- Construction methods specific to the proprietary retaining wall chosen. These specifications should include construction limitations including vertical clearance, right-of-way limits, etc. Submittal requirements for materials such as certification, quality, and acceptance/rejection

criteria should be included. Details on connection of modular units and connection of reinforcements such that assurance of uniform stress transfer should be included.

- Any requirements not stated herein.

The submissions for proprietary retaining walls shall be treated as working drawings in accordance with Section 1.05 amended as follows:

a. 6 sets of each submission shall be supplied to the Department

b. The Contractor shall allow 21 days for the review of each submission. If subsequent submissions are required as a result of the review process, 21 days shall be allowed for review of each submission. No extensions in contract time will be allowed for the review of these submissions.

4 - Final Submissions for Proprietary Retaining Walls:

Once a proprietary retaining wall design has been reviewed and accepted by the Department, the Contractor shall submit the final plans. The final submission shall include one set of full size (approximately 24" x 36") mylar sheets and five sets of full size blue line copies.

The final submission shall be made within 14 days of acceptance by the Department. No work shall be performed on the retaining wall until the final submission has been received.

Acceptance of the final design shall not relieve the Contractor of his responsibility under the contract for the successful completion of the work.

The actual designer of the proprietary retaining wall is responsible for the review of any shop drawings prepared for the fabrication of the wall. One set of full size blue line copies of all approved shop drawings shall be submitted to the Department's permanent records.

5 – General Design Requirements

a. All designs for proprietary walls and temporary earth retaining systems (if required) shall conform to the latest edition of the American Association of State Highway and Transportation Officials (AASHTO) Standard Specifications for Highway Bridges including the latest Interims published except as noted otherwise herein.

b. The wall design shall follow the dimensions of the wall envelope shown in the contract drawings.

For all proprietary walls, the top of the leveling pad or reinforced concrete toe footing shall be located at or below the bottom of the footing elevation shown on the contract drawings. If no footing elevation is shown, the minimum wall embedment shall be four feet as measured to the top of the leveling pad or toe footing.

If steps at the bottom of the wall are required, they shall be kept at or below the footing elevation shown on the contract drawings. Steps in addition to those shown on the contract drawings will be permitted at no additional cost to the Department.

c. The wall shall be designed to be within all property lines and easement lines shown on the contract drawings. If additional work areas are necessary for the construction of the proprietary retaining wall, the Contractor shall be responsible for obtaining the rights from the affected property owners. Copies of these rights shall be forwarded to the Department.

d. The top of the wall shall be at the top of the wall elevations shown on the contract drawings. Where coping or barrier is utilized, the wall face panel shall extend up into the coping or barrier a minimum of two inches. The top of the face panels may be level or sloped to meet the top of the wall line noted.

e. Cast-in-place concrete will not be an acceptable replacement for areas noted by the wall envelope, except for minor grouting of pipe penetrations and leveling required for coping or traffic barrier.

f. The wall shall be designed for a minimum live load surcharge equal to two feet of soil at a unit weight of 125 pounds per cubic foot. If there are specific live load surcharges acting on the wall, they shall also be accounted for. The minimum equivalent fluid pressure used to design the wall shall be 33 pounds per cubic foot per linear foot of wall.

g. If stated on the contract drawings, the wall shall be designed for seismic forces according to the AASHTO Specifications.

h. If the wall is detailed with a concrete parapet, the top two courses of prefabricated modular walls units shall be designed to support a transverse railing load of 10 kips. The 10 kip load may be distributed over the length of the parapet section between joints, but not exceeding 20 feet. Computations that verify the stability of the top two courses of the modular units shall be submitted to the Engineer.

The detailing and reinforcement in the parapet section above the gutterline or finished grade, including any light standard attachments, shall be as shown on the contract drawings.

i. The wall shall be designed to accommodate all roadway drainage and drainage structures as shown on the contract drawings.

j. The maximum allowable bearing pressure of the soil shall be as shown on the contract drawings. The bearing pressure stated assumes a uniform pressure distribution. If additional soils information is required by the Contractor's designer, it must be obtained by the Contractor and will not be reimbursed by the Department.

k. Parapet and Moment slab Design:

- General requirement for parapet and moment slab design:

  The parapet and moment slab shall be designed in accordance the AASHTO Standard LRFD Bridge Design Specifications – 2007, including the latest interim specifications and errata, amended as follows:

  The parapet shall be designed and constructed of precast or cast-in-place concrete. The moment slab shall be designed and constructed of cast-in-place reinforced concrete.

  Above the finished grade, the parapet dimensions, concrete and reinforcement shall conform to the Department's retaining wall parapet details. Below the finished grade, the parapet shall be designed to resist the forces specified in Table A13.2-1 of the AASHTO LRFD Bridge Design Specifications for the parapet types indicated below:

Parapet Type	AASHTO LRFD Test Level
42" High Standard Parapet	TL-4
32" High Standard Parapet	TL-3
Sidewalk Parapet	TL-3

  The moment slab and its connection to the parapet shall be designed to resist, at a minimum, a transverse load equal to 133% of F_t. The length of the structural connection between parapet and moment slab assumed to resist transverse force F_t shall be the distance between parapet joints but not greater than 30 feet in any case. The length of the moment slab assumed to resist sliding and overturning may exceed parapet joint spacing but shall be no greater than 30 feet in any case. The moments shall be summed about the front face of the wall facing. All resistance factors shall be taken as 1.0. The internal angle of friction for the soil shall be assumed to be 34 degrees unless otherwise shown on the contract plans.

  Minimum concrete cover for reinforcing steel shall be 2 inches for top bars and 3 inches for bottom bars

- Precast Concrete Parapet Alternative:

  Precast parapet sections shall be no less than 8 feet in length.

  Parapets shall include details for shear transfer between adjacent units by either concrete shear keys or steel dowels as follows:

  - Shear keys when used shall be monolithically cast in each parapet section or joint location. Shear keys shall be located vertically within the top 32 inches of the parapet and shall be a minimum of 24 inches in length with a tapered width between 3 and 4 inches, and a minimum interlock depth of 2 inches.

- Steel dowels when used shall be a minimum of 3 in number, smooth, 14 inches long minimum, and 1 inch diameter at each parapet interface. Steel dowels shall be located in each parapet joint and spaced approximately 1 foot apart vertically. Steel dowels shall be positioned to project equally into each adjoining parapet sections and shall be detailed to avoid impeding shrinkage and thermal movements. Bond breakers may be used with steel dowels for that purpose. Alternatively, pockets may be cast to receive steel dowels in adjacent parapet units. Pocket widths shall not exceed steel dowel diameters by more than ½ inch.

Moment slabs for precast concrete parapets shall be structurally continuous throughout the overall wall length. Construction joints are permitted in moment slabs.

- Cast-in-Place Parapet Alternative:

The minimum distance between parapet joints shall be 20 feet. Expansion and contraction joints shall be placed in accordance with Section 11.6 of the AASHTO LRFD Bridge Design specifications. Expansion and contraction joints shall be located a minimum of 10 feet from the nearest edge of a catch basin. Expansion and contraction joints shall be located a minimum of 6 feet from the centerline of light standard anchorages and junction boxes. Preformed expansion joint filler, ½ inch thick, shall be installed at the expansion joints in the parapet.

Parapets shall include details for shear transfer between sections by way of concrete shear keys or steel dowels as follows:

- Shear keys when used shall be monolithically cast in each parapet section or joint location. Shear keys shall be located vertically within the top 32 inches of the parapet and shall be a minimum of 24 inches in length with a tapered width between 3 and 4 inches, and a minimum interlock depth of 2 inches.

- Steel dowels when used shall be a minimum of 3 in number, smooth, 14 inches long minimum, and 1 inch diameter at each parapet interface. Steel dowels shall be located in each parapet joint and spaced approximately 1 foot apart vertically. Steel dowels shall be positioned to project equally into each adjoining parapet sections and shall be detailed to avoid impeding shrinkage and thermal movements. A bond breaker shall be used with steel dowels for that purpose.

Moment slabs for cast-in-place parapets shall extend to the outside face of the retaining wall as shown on the plans. Moment slabs for cast-in-place parapets shall be structurally continuous throughout the overall wall length except at parapet contraction and expansion joint locations where longitudinal reinforcing within 2 feet of the wall face shall be discontinuous for the purpose of crack control. All remaining longitudinal reinforcing in moment slabs at parapet expansion and contraction joint locations shall be continuous. A vertical 1" deep chamfer on the exposed face of the moment should be provided in locations directly under parapet expansion and contraction joints. Construction joints are permitted in moment slabs for cast-in-place concrete.

6 - Design Requirements for Mechanically Stabilized Earth Walls: The design shall consider the internal stability of the wall mass as outlined below. The global stability of the structure, including slope stability, bearing capacity safety, and total and differential settlement is the responsibility of the Department.

a. Hydrostatic Forces: Unless specified otherwise, when a design high water surface is shown on the contract drawings at the face of the wall, the design stresses calculated from that elevation to the bottom of wall must include a three foot minimum differential head of saturated backfill. In addition, the buoyant weight of saturated soil shall be used in the calculation of pullout resistance.

b. Backfill: The friction angle of the pervious structure backfill used in the reinforced fill zone for the internal stability design of the wall shall be assumed to be 34 degrees unless shown otherwise on the contract drawings. The friction angle of the in-situ soils shall be assumed to be a maximum of 30 degrees unless otherwise shown on the Contract drawings.

c. Soil Reinforcement: The soil reinforcement shall be the same length from the bottom to the top of each wall section. The reinforcement length defining the width of the entire reinforced soil mass may vary with wall height along the length of wall. The minimum length of the soil reinforcement shall be seventy percent of the wall height, H, or eight feet, whichever is greater.

The soil reinforcement length shall be sufficient to satisfy the sliding, overturning and pullout factors of safety designated in AASHTO Specifications and the minimum lengths required for external stability as recommended by the Department. Calculation of stresses and pullout factors of safety shall be in accordance with the AASHTO Specifications for Highway Bridges.

Calculations for stresses and factors of safety shall be based on assumed conditions at the end of the design life. The design life shall be 75 years unless otherwise indicated on the contract drawings. The design of soil reinforcements shall account for section loss as outlined in the AASHTO Specifications. All soil reinforcement shall be hot dipped galvanized.

7 - Design Requirements for Prefabricated Modular Walls: The general design of the wall shall be according to the AASHTO Specifications. The design shall consider the stability at

each level of modules. The global stability of the structure, including slope stability, bearing capacity safety, and total and differential settlement is the responsibility of the Department.

a. Hydrostatic Forces: Unless specified otherwise, when a design high water surface is shown on the contract drawings at the face of the wall, the design stresses calculated from that elevation to the bottom of wall must include a three foot minimum differential head of saturated backfill. In addition, the buoyant weight of saturated soil shall be used in the calculation of pullout resistance.

b. Backfill: The friction angle of the pervious structure backfill shall be assumed to be 34 degrees if sufficient amounts of pervious backfill are used. The friction angle of the in-situ soils shall be assumed to be a maximum of 30 degrees unless otherwise shown on the Contract drawings.

c. Infill: The maximum assumed unit weight of infill material used for determining the factor of safety for overturning shall be 100 pounds per cubic foot. If Doublewal modules are to be filled with crushed stone, the maximum assumed unit weight of the infill shall be 80 pounds per cubic foot.

d. Safety Factors: The minimum factors of safety shall be as specified in the AASHTO Specifications amended as follows. The factor of safety for T-Wall shall be 1.5 for pullout of the concrete stem. Shear keys are not to be included in these computations. Only resisting forces developed beyond the theoretical failure plane may be used in these computations.

Materials:

1 - Cast-in Place Concrete Walls: The materials furnished and used in the work shall be those prescribed within the Standard Specifications for Roads, Bridges and Incidental Construction, including supplemental specifications and applicable special provisions.

2 - Prefabricated Modular and Mechanically Stabilized Earth Walls: Materials shall conform to the following requirements and those not listed below shall be as prescribed within the Standard Specifications for Roads, Bridges and Incidental Construction, including supplemental specifications and applicable special provisions.

a. Concrete: The concrete shall conform to the requirements of Section M.03 and as follows:

Concrete for all precast components shall be air-entrained composed of portland cement, fine and coarse aggregates, admixtures and water. The air-entraining feature may be obtained by the use of either air-entraining portland cement or an approved air-entraining admixture. The entrained-air content shall be not less than four percent or more than seven percent. The concrete utilized shall be a mix which will attain a minimum 28-day strength (f'_c) of 4,500 pounds per square inch. The mix design shall be furnished to the Engineer.

Concrete for footings or unreinforced leveling pads shall be conform to the requirements of Class "A" Concrete. Class "F" Concrete shall be used for cast-in-place concrete copings.

Concrete Finish: Unless otherwise indicated on the contract drawings or elsewhere in the specifications, the concrete surface for the exposed face shall have an ordinary steel form finish. All non-exposed surfaces shall have a unformed finish which shall be free of open pockets of aggregate and surface distortions in excess of 1/4 inch.

Acceptance Criteria for Precast Components: Precast components shall be accepted for use in wall construction provided the concrete strength meets or exceeds the minimum compressive strength requirement, the soil reinforcement connection devices and the panel or module dimensions are within the manufacture's allowable tolerances and any chipping, cracks, honeycomb or other defects are within acceptable standards for precast concrete or repaired as determined by the Engineer.

It is recognized that certain cracks and surface defects are not detrimental to the structural integrity of the precast components if properly repaired. The Engineer shall determine the need for and proper method of such repair. All repairs shall be approved by the Engineer prior to acceptance of the precast component for use in wall construction.

Marking: The date of manufacture, the production lot number, and the piece-mark shall be clearly marked on the side of each panel or module.

b. Reinforcing Steel: Reinforcing steel shall conform to the requirements of ASTM A615, Grade 60.

c. Attachment Devices for Prefabricated Modular Walls: All structural connectors shall be hot dipped galvanized according to the requirements of ASTM A123 (AASHTO M-111). The minimum thickness of the galvanizing shall be based on the service life requirements in the AASHTO Specifications.

d. Soil Reinforcing and Attachment Devices for MSE Walls:

Soil Reinforcement: All soil reinforcement and structural connectors shall be hot dipped galvanized according to the requirements of ASTM A123 (AASHTO M-111). The minimum thickness of the galvanizing shall be based on the service life requirements as previously stated.

Steel strip reinforcement shall be hot rolled to the required shape and dimensions. The steel shall conform to AASHTO M223 (ASTM A572) Grade 65 unless otherwise specified.

Welded wire fabric reinforcement shall be shop fabricated from cold-drawn wire of the sizes and spacings shown on the plans. The wire shall conform to the requirements of ASTM A82, fabricated fabric shall conform to the requirements of ASTM A185.

Connection Hardware: Connection hardware shall conform to the details on the plans and the requirements in the special provisions or the plans. All fasteners shall be galvanized

according to the requirements of ASTM A-153 (AASHTO M-232). The minimum thickness of the galvanizing shall be based on the service life requirements as previously stated.

e. Joint Materials: All horizontal and vertical joints between panels shall be covered by a geotextile (separation-high survivability) conforming to the requirements of Article M.08.02-26. The minimum width and lap shall be twelve inches. Details of installation including connection of the geotextile to coping shall be provided.

f. Backfill: Backfill shall be pervious structure backfill conforming to the requirements of Articles M.02.05 and M.02.06.

In addition, the backfill for Mechanically Stabilized Earth Walls shall conform to all of the following requirements:

Electrochemical Requirements: The backfill material shall conform to the following electrochemical requirements:

PROPERTY	REQUIREMENT	TEST METHODS
Resistivity at 100% saturation	Minimum 3000 ohm-cm	ASTM G-57-78 AASHTO T-288-91I
pH	Acceptable Range 5-10	ASTM G-51-77 AASHTO T-289-91I
Chlorides	Maximum 100 ppm	ASTM D-512-88 AASHTO T-291-91I
Sulfates	Maximum 200 ppm	ASTM D-516-88 AASHTO T-290-91I

g. Smooth Steel dowels : Steel dowels used in parapets joints shall conform to the requirements of ASTM A36 and shall be galvanized in conformance with the requirements of ASTM A153.

Construction Methods:

1 - Cast-in-Place Concrete Walls: All construction methods for cast-in-place retaining walls shall be in accordance with the detailed requirements prescribed for the construction of the appropriate items as specified in the Standard Specifications for Roads, Bridges, and Incidental Construction.

2 - Prefabricated Modular Walls: All construction methods for items not listed below shall be in accordance with the detailed requirements prescribed for the construction of the appropriate items as specified in the Standard Specifications for Roads, Bridges, and Incidental Construction.

a. Special Surface Treatment: If a special surface finish is proposed for the wall, before proceeding with production, a model modular unit shall be provided by the fabricator for the Engineer's approval to establish a guide and standard for the type of finish to be furnished on the

exposed face. This model shall be kept at the fabricator's plant to be used for comparison purposes during production. Formed surfaces other than the exposed face shall not require a special finish.

b. Inspection and Rejection: The quality of materials, the process of manufacture, and the finished units shall be subject to inspection by the Engineer prior to shipment.

Modular units which have imperfect molding, honeycomb, open texture concrete, or broken corners shall be repaired to the satisfaction of the Engineer or shall be rejected. Insufficient compressive strength shall also be cause for rejection.

Modular units with special surface treatments shall be rejected if there are variations in the exposed face that deviate from the approved model as to color or texture in accordance with precast concrete industry standards.

c. Marking: The date of manufacture shall be clearly scribed on an inside surface of each modular unit.

d. On Site Representative: A qualified and experienced representative from the wall supplier shall be at the site at the initiation of the wall construction to assist the Contractor and the Engineer. If there is no more than one wall on a project then this criteria will apply to construction of the initial wall only. The representative shall also be available on an as needed basis, as requested by the Engineer.

e. Installation: The modular units shall be installed in accordance with manufacturer's recommendations. Special care shall be taken in setting the bottom course of units to true line and grade.

The vertical joint opening on the front face of the wall shall not exceed 3/4 inch. Vertical tolerances and horizontal alignment tolerances measured from the face line shown on the contract drawings shall not exceed 3/4 inch when measured along an eightfoot straightedge. The overall tolerance of the wall from top to bottom shall not exceed 1/2 inch per eight feet of wall height or one inch total, whichever is the lesser, measured from the face line shown on the contract drawings. A strip of geotextile shall be installed at all vertical joints.

Assembly of the various components shall be performed in such a manner that no undue strain or stress is placed on any of the members that constitute the completed structure.

f. Backfilling:

Doublewal:

Infill for modular units shall be placed, one course at a time, in lifts not exceeding two feet in thickness. The dry density of each lift of pervious structure backfill placed inside the modular units, after compaction, shall not be less than 90 percent of the dry density for that

material when tested in accordance with AASHTO T-180, Method D. Each lift shall be thoroughly compacted with a vibratory tamping device.

Placement of the pervious structure backfill behind the wall shall closely follow erection of successive courses of modular units. At no time shall the difference in backfill elevation between the interior and exterior of the wall exceed six feet.

The units may be backfilled with crushed stone, provided that the design of the wall was based on a density of 80 pounds per cubic foot.

All pervious structure backfill placed outside of the modular units shall be placed in accordance with the requirements of Article 2.16.03.

T-Wall:

Backfill placement shall closely follow erection of each course of modules. Backfill shall be placed in such a manner as to avoid any damage or disturbance to the wall materials or misalignment of the modules. Any wall materials which become damaged or disturbed during backfill placement shall be either removed and replaced at the Contractor's expense or corrected, as directed by the Engineer. Any backfill material placed within the wall envelope which does not meet the requirements of this specification shall be corrected or removed and replaced at the Contractor's expense.

Backfill shall be compacted to 95 percent of the maximum density as determined by AASHTO T-99, Method C or D (with oversize correction, as outlined in Note 7).

The moisture content of the backfill material prior to and during compaction shall be uniform throughout each layer. Backfill material shall have a placement moisture content less than or equal to the optimum moisture content. Backfill material with a placement moisture content in excess of the optimum moisture content shall be removed and reworked until the moisture content is uniform and acceptable throughout the entire lift. The optimum moisture content shall be determined in accordance with AASHTO T-99, Method C or D (with oversize correction, as outlined in Note 7).

If 30 percent or more of the backfill material is greater than 3/4 inch in size, AASHTO T-99 is not applicable. For such a material, the acceptance criterion for control of compaction shall be either a minimum of 70 percent of the relative density of the material as determined by a method specification provided by the wall supplier, based on a test compaction section, which defines the type of equipment, lift thickness, number of passes of the specified equipment, and placement moisture content.

The maximum lift thickness after compaction shall not exceed ten inches. The Contractor shall decrease this lift thickness, if necessary, to obtain the specified density.

Compaction within three feet of the face of the modules shall be achieved by at least three passes of a lightweight mechanical tamper, roller or vibratory system. The specified lift

thickness shall be adjusted as warranted by the type of compaction equipment actually used. Care shall be exercised in the compaction process to avoid misalignment or damage to the module. Heavy compaction equipment shall not be used to compact backfill within three feet of the wall face.

At the end of each day's operation, the Contractor shall slope the last level of backfill away from the wall facing to direct runoff of rainwater away from the wall face. The Contractor shall control and divert runoff at the ends of the wall such that erosion or washout of the wall section does not occur. In addition, the Contractor shall not allow surface runoff from adjacent areas to enter the wall construction site.

3 - Mechanically Stabilized Earth Walls: All construction methods for items not listed below shall be in accordance with the detailed requirements prescribed for the construction of the appropriate items as specified in the Standard Specifications for Roads, Bridges, and Incidental Construction.

a. Special Surface Treatment: If a special surface finish is proposed for the wall, before proceeding with production, a model face panel shall be provided by the fabricator for the Engineer's approval to establish a guide and standard for the type of finish to be furnished on the exposed face. This model shall be kept at the fabricator's plant to be used for comparison purposes during production. Formed surfaces other than the exposed face shall not require a special finish.

b. Foundation Preparation: The foundation for the structure shall be graded level for a width equal to or exceeding the length of the soil reinforcements, or as shown on the plans. Prior to wall construction, the foundation, if not in rock, shall be compacted. Any foundation soils found to be unsuitable shall be removed and replaced with granular fill.

At each panel foundation level, an un-reinforced concrete leveling pad shall be provided as shown on the plans. The leveling pad shall be cast to the design elevations as shown on the plans.

c. On Site Representative: A qualified and experienced representative from the wall supplier shall be at the site at the initiation of the wall construction to assist the Contractor and the Engineer. If there is no more than one wall on a project then this criteria will apply to construction of the initial wall only. The representative shall also be available on as needed basis, as requested by the Engineer.

d. Wall Erection: Panels shall be placed in successive horizontal lifts in the sequence shown on the plans as backfill placement proceeds. As backfill material is placed behind the panels, the panels shall be maintained in a vertical position. Vertical tolerances (plumbness) and horizontal alignment tolerances shall not exceed 3/4 inch in eight feet. The allowable offset in any panel joint shall be 3/4 inch. The overall vertical tolerance of the wall (plumbness from top to bottom) shall not exceed 1/2 inch per eight feet, or one inch total, which ever is the lesser, measured from the face line shown on the plans.

e. Placement of Reinforcements: Bending of reinforcements in the horizontal plane that results in a permanent deformation in their alignment shall not be allowed. Gradual bending in the vertical direction that does not result in permanent deformations is allowable.

Connection of reinforcements to piles or bending of reinforcements around piles shall not be allowed. A structural connection (yoke) from the wall panel to the reinforcement shall be used whenever it is necessary to avoid cutting or excessive skewing of reinforcements due to pile or utility conflicts.

Soil reinforcements shall be placed normal to the face of the wall, unless otherwise shown on the plans.

f. Backfill Placement: Backfill placement shall closely follow erection of each course of panels. Backfill shall be placed in such a manner as to avoid any damage or disturbance to the wall materials or misalignment of the facing panels. Any wall materials which become damaged or disturbed during backfill placement shall be either removed and replaced at the Contractor's expense or corrected, as directed by the Engineer. Any backfill material placed within the reinforced soil mass which does not meet the requirements of this specification shall be corrected or removed and replaced at the Contractor's expense.

Backfill shall be compacted to 95 percent of the maximum density as determined by AASHTO T-99, Method C or D (with oversize correction, as outlined in Note 7).

The moisture content of the backfill material prior to and during compaction shall be uniform throughout each layer. Backfill material shall have a placement moisture content less than or equal to the optimum moisture content. Backfill material with a placement moisture content in excess of the optimum moisture content shall be removed and reworked until the moisture content is uniform and acceptable throughout the entire lift. The optimum moisture content shall be determined in accordance with AASHTO T-99, Method C or D (with oversize correction, as outlined in Note 7).

If 30 percent or more of the backfill material is greater than 3/4 inch in size, AASHTO T-99 is not applicable. For such a material, the acceptance criterion for control of compaction shall be either a minimum of 70 percent of the relative density of the material as determined by a method specification provided by the wall supplier, based on a test compaction section, which defines the type of equipment, lift thickness, number of passes of the specified equipment, and placement moisture content.

The maximum lift thickness after compaction shall not exceed ten inches, regardless of the vertical spacing between layers of soil reinforcements. The Contractor shall decrease this lift thickness, if necessary, to obtain the specified density. Prior to placement of the soil reinforcements, the backfill elevation at the face shall be level with the connection after compaction. From a point approximately three feet behind the back face of the panels to the free end of the soil reinforcements the backfill shall be two inches above the attachment device elevation unless otherwise shown on the plans.

Compaction within three feet of the back face of the panels shall be achieved by at least three passes of a lightweight mechanical tamper, roller or vibratory system. The specified lift thickness shall be adjusted as warranted by the type of compaction equipment actually used. Care shall be exercised in the compaction process to avoid misalignment of the panels or damage to the attachment devices. Heavy compaction equipment shall not be used to compact backfill within three feet of the wall face.

At the end of each day's operation, the Contractor shall slope the last level of backfill away from the wall facing to direct runoff of rainwater away from the wall face. The Contractor shall control and divert runoff at the ends of the wall such that erosion or washout of the wall section does not occur. In addition, the Contractor shall not allow surface runoff from adjacent areas to enter the wall construction site.

Method of Measurement: This work will be paid for on a lump sum basis and will not be measured for payment.

Basis of Payment: This work will be paid for at the contract lump sum for "RETAINING WALL (SITE NO. X)", complete in place, which price shall include all work shown within the pay limits shown on the contract drawings for the retaining wall including but not limited to the following:

1. Design and construction of the proprietary retaining wall.

2. Excavation required for the construction of the retaining wall.

3. Design and construction of temporary earth retaining systems to retain the existing facilities during construction.

4. The furnishing, placing and compacting of pervious structure backfill within the payment lines.

5. The furnishing and placing of backfill drainage systems for the wall.

6. The furnishing and placing of rigid metal conduit, junction boxes, light standard anchorages, and other electrical appurtenances located within the wall proper.

7. Services of the On-Site Representative.

8. Any other work and materials shown on the plans for the retaining wall.

The price shall also include all materials, equipment, tools and labor incidental thereto.

If bedrock or boulders in excess of one cubic yard are encountered in the excavation, it shall be paid for under the item "Structure Excavation - Rock".

Description	Unit
Retaining Wall (Site No. 3)	LS
Retaining Wall (Site No. 4)	LS

ITEM # 0603061A – STRUCTURAL STEEL (SITE NO. 1)

Description: is supplemented as follows:

This special provision provides additional requirements for the surface preparation, shop painting, and field touch-up painting of new structural steel.

Work under this item shall conform to the requirement of Section 6.03, supplemented and amended as follows:

Materials: Following the second paragraph, add the following:

Painting materials for this work shall conform to the following:

- The Contractor shall select a three-coat system from the qualified products Lists A and B issued by the Northeast Protective Coating Committee (NEPCOAT), except System No. SSC(03)-02, comprised of Carbozinc 859 organic zinc rich primer, Carboguard 888 epoxy polyamide, and Carbothatne 133HB aliphatic Polyurethane that shall not be permitted. The approved NEPCOAT listings may be found at the NEPCOAT website at http://www.maine.gov/mdot/nepcoat/index. The system chosen shall have a prime coat that has achieved a Class 'B' slip coefficient Top coat paint color shall be as noted on the plans.

- Both the shop painted and field touchup applied coating systems shall be of the same three-coat system. The same coating material manufacturer shall furnish all materials for the complete coating system. Intermixing of materials within and between coating systems will not be permitted. Thinning of paint shall conform to the manufacturer's written instructions.

Construction Methods: In Subarticle 4 "Field Erection" - part (f) "High Strength Bolted Connections", the following revisions are made:

- Replace the first sentence of the fourth paragraph "Surface Conditions: At the time of…other foreign material " with the following:

  At the time of assembly, all connection faying surfaces shall be free of burrs, dirt or other foreign material. Faying surfaces within portions of structural steel designated to be uncoated shall be free of scale, except tightly adhered mill scale. Connection faying surfaces within portions of structural steel designated to be painted shall receive a single coat of primer in accordance with requirements stipulated elsewhere in this special provision.

- Delete the entire fifth paragraph: "Paint is permitted on…wire brushing is not permitted."

Following the last paragraph of the article, add the following:

The painting application shall be done in compliance with the following requirements:

Qualification of Shop Painting Firm: All shop painting of structural steel must be performed by and in an enclosed shop that is certified by the SSPC Painting Contractor Certification Program QP-3, entitled "Standard Procedure for Evaluating Qualifications of Shop Painting Contractors" in the enclosed shop category or that holds an AISC Quality Certificate with a "Sophisticated Paint Endorsement" in the enclosed shop category. They shall be fully certified, including endorsements, for the duration of the time they are performing the surface preparation and coating application. A copy of the subject certification shall be provided to the Engineer prior to commencing any surface preparation or coating application.

The complete coating system shall be applied in an enclosed shop except for field touch-up painting which shall be applied after all bolts are fully tensioned and deck formwork removed. The enclosed shop shall be a permanent facility with outside walls to grade and a roof where surface preparation and coating activities are normally conducted in an environment not subject to outdoor weather conditions and/or blowing dust.

Quality Control Inspection of Shop Painting: The firm performing shop painting of the structural steel shall have a written quality control (QC) program. A copy of the QC program and record keeping procedures shall be provided to the Engineer prior to commencing any surface preparation or coating application. The program shall contain, but not be limited to, the following:

1. Qualifications of QC staff.
2. Authority of QC staff. QC staff must have the authority to stop non-conforming work.
3. Procedure for QC staff to advise operation supervisor, in writing, of non-conforming work.
4. Sample copy of QC inspection reports that will document compliance with specification.
5. Procedure for calibrating inspection equipment and recording calibration.
6. Procedure for repairing defective coating applications.

The Contractor or Shop shall provide at least one Quality Control Inspector for the duration of the shop application to provide Quality Control. The QC Inspector must be a National Association of Corrosion Engineers (NACE) Coating Inspector Certificated with Peer Review. The QC Inspector shall verbally inform the Engineer on a daily basis, of the progress and any corrective actions performed on the coating work. The QC Inspector shall be present during all cleaning and coating operations.

The Contractor or Shop shall be responsible for purchasing and providing the latest version of the NACE Coating Inspector Log Book(s) and all necessary inspection tools. The Contractor's QC Inspector shall stamp the front page of each inspector's log book used during painting operations. The stamped book(s) shall indicate the inspector's NACE certification number, certification expiration date and shall also be signed. All daily coating activity shall be recorded in the Log Book. Copies of the log entries shall be provided on a daily basis to the Department's Quality Assurance (QA) shop representative. Upon completion of the coating, the log book(s) shall then be furnished to the Department's QA shop representative.

Technical Advisor: The Contractor or Shop shall obtain the services of a technical advisor who is employed by the coating manufacturer to assist the Engineer and shop painting firm during this work. The technical advisor shall be a qualified representative and shall be made available at the Shop upon request by the QC Inspector or the Engineer.

Surface Preparation: The following shall be performed prior to abrasive blast cleaning of steel members:

- All corners and edges shall be rounded to a 1/16-inch radius or chamfered to a 1/16-inch chamfer.
- All fins, slivers and tears shall be removed and ground smooth.
- All rough surfaces shall be ground smooth.
- Flame cut edges shall be ground over their entire surface such that any hardened surface layer is removed, and subsequent abrasive blast cleaning produces the specified surface profile depth.

Immediately before abrasive blast cleaning all steel members shall be solvent cleaned in accordance with SSPC-SP1 - "Solvent Cleaning."

Abrasive blast cleaning shall be performed in accordance with SSPC-SP 10 - "Near White Blast Cleaning" using a production line shot and grit blast machine or by air blast. The abrasive working mix shall be maintained such that the final surface profile is within the range specified elsewhere in this specification.

The QC Inspector shall test the abrasive for oil, grease or dirt contamination in accordance with the requirements of ASTM D7393 and document the test results . Contaminated abrasive shall not be used to blast clean steel surfaces. The blast machine shall be cleared of all contaminated abrasive and then solvent cleaned thoroughly in accordance with SSPC-SP 1 "Solvent Cleaning". New uncontaminated abrasive shall be added. Abrasive shall be tested for contaminants in accordance with the requirements of ASTM D7393 prior to the start of blast cleaning operations and at least every four hours during the blast cleaning operations.

All compressed air sources shall have properly sized and designed oil and moisture separators, attached and functional, to allow air at the nozzle, either for blast cleaning, blow-off, painting or breathing, to be oil-free, and moisture-free. They shall have sufficient pressure to accomplish the associated work efficiently and effectively.

The QC Inspector shall perform the blotter test and document the results at the start of each blasting shift and at least every four hours during the blasting operation to ensure that the compressed air is free of oil and moisture. The blotter test shall be performed in accordance with the procedure outlined in ASTM D4285. For contaminated air sources, the oil and moisture separators shall be drained and the air retested.

No surface preparation or coating shall be done when the relative humidity is at or above 80 percent or when the surface temperature of the steel is less than five (5) degrees Fahrenheit

above the dewpoint temperature as determined by a surface thermometer and an electric or sling psychrometer.

Surface Profile: The steel surface profile shall be 1 to 3 mils. Each girder or beam shall have the surface profile measured at a minimum of three locations in accordance with the test requirements of ASTM D4417, Method C. Smaller pieces such as diaphragms shall have the surface profile measured at a minimum of three locations on one piece at the beginning of abrasive blast operations and at least every four hours and at the end of abrasive blast cleaning operations. This measurement shall be performed with both coarse (0.8-2.0 mils) and extra coarse (1.5-4.5 mils) replica tape. During this measurement, special attention shall be given to areas that may have been shielded from the blast wheels, such as the corners of stiffeners and connection plates. The impressed tapes shall be filed in the NACE Coating Inspector's Log Book. Note: When measuring the profile on the tape, 2 mils shall be subtracted (non-compressible mylar thickness) from the micrometer reading as indicated on each piece of tape.

A surface profile correction factor shall be measured in accordance with SSPC-PA 2 section 2.2.4 with a "Type 2" magnetic film thickness gage.

Application Methods: The coating system shall be applied by spray equipment of a type and size capable of applying each coat within the required thickness range. The applicator shall strictly adhere to the manufacturer's written recommendations about application methods, cure times, temperature and humidity restrictions and recoat times for each individual coat of the specified system. However, in no case shall coatings be applied in ambient conditions that exceed the relative humidity and dewpoint temperature control limits specified elsewhere within this special provision. Brushes shall be used in areas where spray application will not achieve acceptable results. Brushing technique shall be performed in a manner that will provide a uniform, blended finish.

Conventional spray equipment with mechanical agitators shall be used for prime coat application.

All storage, mixing, thinning, application and curing techniques and methods shall be accomplished in strict accordance with the printed material data sheets and application instructions published by the respective coating material manufacturer.

Surfaces shall be painted with the specified prime coat material before the end of the same work shift that they were blast cleaned and before any visible rust back occurs.Applied coatings shall not have runs, sags, holidays, pinholes or discontinuities.

The dry film thickness shall be within the range specified in the manufacturer's printed literature for the specified coating system. Dry film thickness shall be measured in accordance with SSPC-PA 2. The prime, intermediate and top coats shall be of contrasting colors as determined by the Engineer. There shall be no color variation in the topcoat as determined by comparison with Federal Standard 595.

Areas Requiring Special Treatment: All steel surfaces shall receive the three-coat shop applied system as specified except the following particular area types which shall be treated as follows:

1) Faying surfaces of connections shall receive only a single application of primer. The dry film thickness shall be no greater than the thickness tested on the coating manufacturer's Certified Test Report for slip coefficient.

2) All steel surfaces within four (4) inches of field welds shall receive only a single mist coating of primer at 0.5 - 1.5 mils dry film thickness.

3) Top surfaces of top flanges that will be in contact with concrete shall receive only a single mist coating of primer at 0.5 - 1.5 mils dry film thickness.

4) Edges and shop welds shall be locally hand-striped with a brush in the longitudinal direction with an additional coat of an appropriate zinc-rich primer prior to application of the full intermediate coat. The application of the striping materials shall be in accordance with the coatings manufacturer's written instructions. The striping material shall be a contrasting color to distinguish it from the primer and intermediate coats.

5) The interior surfaces of box girders, including bracing, shall be prepared in accordance with these specifications then coated with the first two coats of the three-coat system. The intermediate coat in these areas shall be white and match Federal Standard 595 Color Number 27925.

Adhesion: Adhesion strength of the fully coated assemblies shall be the more restrictive of the manufacturer's specified adhesion strength or at least 600 psi for systems with organic zinc primers and at least 250 psi for systems with inorganic zinc rich primers measured as per ASTM D4541 using apparatus under Annex A4. All adhesion test locations shall be recoated in accordance with this specification at no additional cost. The QC Inspector shall perform adhesion strength tests every 500 sq. ft. and document the adhesion strength test results.

If adhesion test results are less than the specified value, but equal to or greater than 80% of the specified value, four (4) additional adhesion tests shall be taken within the 500 sq. ft. area of the failed test. If any of the additional adhesion tests are less than the specified value the coating shall be removed from the entire piece and re-applied at the Contractor's expense. The entire coating system shall be removed from a piece if any adhesion tests are less than 80% of the specified value and re-applied at the Contractor's expense.

Smaller pieces such as diaphragms shall be analyzed in lots that have an overall coated surface area of approximately 500 sq. ft.

Protection of Coated Structural Steel: All fully coated and cured assemblies shall be protected from handling and shipping damage with the prudent use of padded slings, dunnage, separators and tie downs. Loading procedures and sequences shall be designed to protect all coated surfaces. Erection marks for field identification of members and weight marks shall be affixed in such a manner as to facilitate removal upon final assembly without damage to the coating system.

Qualification of Field Touchup Painting Contractors: All painting contractors and painting subcontractors used for all field touchup painting must be certified by the SSPC Painting Contractor

Certification Program (PCCP), QP-1, entitled "Standard Procedure for Evaluating Qualifications of Painting Contractors: Field Application to Complex Structures" at the time of field touchup coating application. This certification must be full and not interim. The painting contractors or subcontractors must remain so certified for the duration of the field coating application. If a contractor's or subcontractor's certification expires, the painting firm will not be allowed to perform any work until the certification is reissued. Requests for extension of time for any delay to the completion of the project due to an inactive certification will not be considered and liquidated damages will apply.

Quality Control Inspection of Field Touchup Painting: The contractor performing field touchup painting of the structural steel shall have a written quality control (QC) program. A copy of the QC program and record keeping procedures shall be provided to the Engineer prior to commencing any surface preparation or coating application. The program shall contain, but not be limited to, the following:

1. Qualifications of QC staff.
2. Authority of QC staff. QC staff must have the authority to stop non-conforming work.
3. Procedure for QC staff to advise operation supervisor, in writing, of non-conforming work.
4. Sample copy of QC inspection reports that will document compliance with specification.
5. Procedure for calibrating inspection equipment and recording calibration.
6. Procedure for repairing defective coating applications.

The Contractor shall provide at least one Coating Inspector who is Certificated and peer reviewed with the National Association of Corrosion Engineers (NACE) for the duration of the field application to provide Quality Control. The QC Inspector shall verbally inform the Engineer on a daily basis, of the progress and any corrective actions performed on the coating work. The QC Inspector shall be present during all cleaning and coating operations.

The Contractor shall be responsible for purchasing and providing the latest version of the NACE Coating Inspector Log Book(s) and all necessary inspection tools. The Contractor's QC Inspector shall stamp the front page of each inspector's log book used during painting operations. The stamped book(s) shall indicate the inspector's NACE certification number, certification expiration date and shall also be signed. All daily coating activity shall be recorded in the Log Book. Copies of the log entries shall be provided on a daily basis to the Department's Quality Assurance (QA) field representative. Upon completion of the coating, the log book(s) shall then be furnished to the Department's QA field representative.

Field Touch-Up Painting of Shop applied coating: The field applied coating for touchup painting shall be the same system used in the shop applied application. Field application of coatings shall be in accordance with the manufacturer's written application guidelines and these specifications. All areas cleaned to bare metal must be coated with zinc-rich primer before any visible rusting occurs. The intermediate and topcoat material for field touch-up painting shall be from the same lot and batch used in the shop provided its shelf life has not expired. If the shelf life has expired, the same material of the same color from a different lot and batch shall be used.

After all concrete is placed and the forms are removed, all rust, scale, dirt, grease, concrete splatter and other foreign material shall be completely removed from all painted surfaces. All surfaces to be field painted shall also be cleaned by solvent cleaning in accordance with SSPC-SP 1, hand tool cleaning SSPC-SP 2, and power tool cleaning SSPC-SP 3 and SSPC-SP 11. Areas cleaned to SSPC-SP 11 must have a 1-3 mil profile and must be primed prior to rusting. All debris generated from cleaning operations must be contained and properly disposed of by the Contractor.

Bolts, nuts, washers and surrounding areas shall receive brush applications of intermediate and topcoat after final tensioning. Careful attention shall be given to bolted connections to insure that all bolts, nuts and washers are fully coated and that no gaps are left unfilled and uncoated.

Field welds and surrounding areas shall be treated in the same manner as shop welded areas, including special treatment requirements.

Damage to the coating system that extends to the steel surface (such as scratches, gouges or nicks), shall have the entire three-coat system locally reapplied after power tool cleaning to bare metal in accordance with SSPC-SP 11. The coating system adjacent to the damage shall be feathered back to increase the surface area for touch up painting. The area cleaned to SSPC-SP 11 shall be primed with a zinc-rich primer before rusting occurs.

Damage to the coating system that extends back only to the prime or intermediate coat, shall only have the topcoat applied. Application of the touch-up materials in these damaged areas shall be performed by brush only.

General: The word “PAINTED”, followed by the month and year the painting of the structure is completed along with the ConnDOT Project Number and the manufacturer's abbreviations for each of the three coats, shall be stenciled on the inside of a fascia girder at mid-depth of the girder in three (3) inch high block letters located near the abutment, so as to be clearly visible from the ground below. Paint for stenciling information shall be of a contrasting color and be compatible with the topcoat.

Article 6.03.05 – Basis of Payment: Add the following at the end of the second paragraph: Payment for either method for structural steel, complete in place, shall also include painting, equipment, tools and labor incidental thereto.

ITEM # 0603253A - DISPOSAL OF LEAD DEBRIS

Description:

Under this item the Contractor shall dispose of all debris that has been classified or identified as hazardous by the Department. This debris is the collected by-product of the removal of paint containing lead, removal of lead based products, and chemical solvents used to remove paint. The Department will sample and test the debris in accordance with the criteria required by the Department's Division of Environmental Compliance.

The Contractor shall conform to the latest requirements of the Hazardous Waste Management Regulations prepared by the D.E.P.'s Hazardous Waste Management Section, subject to regulations of Section 22a-449(c) of the Connecticut General Statutes.

Disposal of the debris after testing shall be in strict conformance with all Federal E.P.A. and D.E.P. regulations for hazardous materials.

Material:

The debris must be offered for transportation and transported in compliance with the Code of Federal Regulations, Title 49, Chapter 1, Part 173, Subparts A, B, C, and D and Paragraph 178.118. Transport vehicles (hopper or dump type) must be free from leaks and discharge openings must be securely closed during transportation. All storage containers (roll offs or drums) shall have a protective liner and removable lid. These containers shall not have any indentations or damage that would allow seepage of the contained material.

Construction Methods:

Prior to generation, a temporary E.P.A. ID number shall be obtained from the Department's Division of Environmental Compliance (telephone number 594-2067 or 594-3344) by the Department's Project Engineer (Construction).

The disposal of the debris classified as hazardous shall be completed within 90 calendar days of the date on which it began to be accumulated in the lined containers. Storage of containers shall be in accordance with current Department procedures.

A licensed hazardous waste transporter and a licensed hazardous waste treatment/disposal facility must be secured from lists available from the D.E.P. and approved by the Department's Division of Environmental Compliance.

The disposal containers shall be labeled with a 6-inch square, yellow, weatherproof, Hazardous waste sticker in accordance with U.S. DOT regulations, by the Contractor. Stickers are available through the Department's Project Engineer (Construction). Additional labels or stenciling shall indicate "Abrasive Blast and/or Construction Paint Residue."

All necessary forms, including the "Uniform Hazardous Waste Manifest" obtained from the Hazardous Waste Management Section of D.E.P., must be filled out, approved and signed by the Department's Project Engineer (Construction), and appropriate copies returned to the Department's Division of Environmental Compliance.

When all necessary procedures have been completed, then the hazardous waste shall be shipped to the hazardous waste disposal facility.
Any spillage of debris during disposal operations i.e. loading, transport and unloading shall be cleaned up in accordance with the Code of Federal Regulations, Title 40, Chapter 1, Part 265, Subparts C and D, at the Contractor's expense.

The Contractor is liable for any fines, costs or remediation costs incurred as a result of their failure to be in compliance with this special provision and all Federal, State and Local laws.

Method of Measurement:

This item will be measured for payment by the contract unit price per 55 gallon barrel of hazardous lead waste. Barrels that have been partially filled because of weight limitations will be measured as a partial unit dependent upon actual volume in barrel. Material may be disposed of in larger containers, with a conversion factor of 0.273 CY to 55 gallon barrel. Materials incidental to the construction, which become contaminated due to the lead debris removal, such as but not limited to, gloves, coveralls, tarps and filters shall be disposed of in accordance with this specification. These incidental materials shall be kept separate from the blast debris. These materials will not be measured for payment, but will be included in the general cost of the work.

Basis of Payment:

This work will be paid for at the contract unit price per 55 gallon barrel, of hazardous lead waste for "Disposal of Lead Debris". The price shall include all materials, transportation, storage containers, disposal, equipment, tools, labor, and work incidental thereto.

PAY ITEM	PAY UNIT
Disposal of Lead Debris	55 Gal Barrel

ITEM #0603444A - LEAD HEALTH PROTECTION PROGRAM (LHPP)

Description:

The structure(s) on this project are coated with paint containing lead. Any work which disturbs the paint coating may expose workers to health hazards. The Contractor is fully responsible for the protection of his employees and ConnDOT project-related employees from exposure to lead under OSHA regulations. This item includes all related monitoring, protective equipment, decontamination facilities, hand-wash facilities, necessary shuttle vehicle(s), reports, and services of Certified Industrial Hygienist(s) (CIH).

At least 20 working days prior to performing any work on the structure, the Contractor shall submit to the Engineer a written site specific Lead Health Protection Program (LHPP) prepared by a CIH that covers all workers on the project (Contractor, Subcontractor and ConnDOT representatives). The CIH shall be listed by the American Board of Industrial Hygiene. The LHPP shall include procedures for medical surveillance of the contractors, subcontractors and the state project-related representatives, hazard communication procedures, employee training, protective equipment, and all other procedures that may be necessary to comply with 29 CFR Part 1926.62 pertaining to lead exposure in construction.

Typical work tasks that pose a lead exposure risk consist of, but are not limited to, welding, burning paint, flame cutting, abrasive blast cleaning, grinding, chipping, needle gun cleaning, lead burning, manual scraping and sanding, manual demolition of structures, heat gun cleaning, peening on existing structural steel, abrasive blasting debris cleanup, using lead containing mortar, abrasive blasting enclosure movement and removal, power tool cleaning, lead removal equipment cleaning, decontamination trailer cleaning, rehabilitation of existing structural steel, gouging, and rivet busting.

All projects where employee lead exposure without regard to the use of respirators, may exceed the action level, that is employee exposure to an airborne concentration of lead of 30 micrograms per cubic meter of air (30 $\mu g/m^3$) averaged over an 8-hour period (i.e. removal of paint containing lead, bearing replacement, etc.) must have a decontamination facility and hand-wash facility on site and available for use by the designated staff.

The Contractor shall comply with the requirements of the OSHA Standard for Lead in Construction, 29 CFR 1926.62 and any other applicable federal and state laws. Additional Federal Regulations that must be followed with respect to lead and this specification include, but are not limited to:

29 CFR Part 1910.1000 (a, b, c
Tables Z-1-A, Z-2, and Z-3 as
currently in effect)..... Air Contaminants

29 CFR Part 1926.154..... Temporary Heating Devices

29 CFR Part 1910.20	Access to Employee Exposure and Medical Records
29 CFR Part 1910.120	Hazardous Waste Operations & Emergency Response
29 CFR Part 1910.134	Respiratory Protection
29 CFR Part 1910.141	Sanitation
29 CFR Part 1910.146	Permit Required Confined Spaces
29 CFR Part 1910.94	Abrasive Blasting
29 CFR Part 1926.16	Rules of Construction
29 CFR Part 1926.20	General Safety and Health Provisions
29 CFR Part 1926.21	Safety Training
29 CFR Part 1926.28	Personal Protective Equipment
29 CFR Part 1926.32	Competent Person
29 CFR Part 1926.51	Sanitation
29 CFR Part 1926.55	Gases, Vapors, Fumes, Dusts and Mists
29 CFR Part 1926.57	Ventilation
29 CFR Part 1926.59	Hazard Communication
29 CFR Part 1926.103	Respiratory Protection
29 CFR Part 1926.200	Accident Prevention Signs and Tags
29 CFR Part 1926.353	Ventilation and Protection in Welding, Cutting and Heating
29 CFR Part 1926.354	Welding, Cutting and Heating in Way of Preservative Coatings

The Contractor shall also comply with the most recent Connecticut Lead Intervention Network in Construction (CLINIC) guidelines and protocols.

FAILURE OF THE CONTRACTOR OR HIS SUBCONTRACTORS TO COMPLY WITH THE PROVISIONS OF THIS SECTION WILL AFFECT WHETHER THE CONTRACTOR OR HIS SUBCONTRACTOR WILL BE CONSIDERED A RESPONSIBLE CONTRACTOR OR SUBCONTRACTOR ON FUTURE WORK INVOLVING STRUCTURE REHABILITATION AND REMOVAL OF LEAD PAINT COATINGS ON DEPARTMENT OF TRANSPORTATION PROJECTS.

CLINIC personnel or their representatives shall be allowed access to each work site covered by the provisions of the "LHPP" and shall be furnished upon request with such information and assistance by the Contractor as is required to make a complete and detailed inspection.

Materials:

Protective Equipment: Respiratory protective equipment shall conform to 30 CFR Part 11, 29 CFR Part 1910.134, and 29 CFR Part 1926.62. Protective Clothing shall be in conformance with 29 CFR Parts 1910.132 and 1910.133. The minimum protective clothing required shall be head covering, coveralls (reusable or disposable clothing), gloves, dedicated work-boots or disposable over-boots, eye protection, hearing protection and hardhat.

Hand-Wash Facility: The number of facilities to be provided will be dictated by the site(s) and the approved by the Engineer. Each facility shall be equipped with hot and cold clean water, hand soap or similar cleansing agents and individual hand towels or sections made of cloth or paper, warm air blowers or clean individual sections of continuous cloth toweling which the workers will use to wash and dry their hands, face and any exposed skin prior to eating, drinking, smoking or applying cosmetics. Each facility shall be located as close to the work site as is physically possible. Ownership of and liability for the facility shall remain with the Contractor throughout the duration of the project. The facility shall comply with 29 CFR Part 1926.51.

Each portable handwash facility shall be trailer, skid or cart-mounted and have a minimum of one (1) sink with a fresh water tank, and a holding tank. The facility shall also be equipped with hot water heater, eye wash station, storage cabinets, lights for night use, an electric or pneumatic water pump, and lead filtration system. Containers for the collection and disposal of refuse generated at the facility shall also be provided.

Each facility shall be kept in a sanitary condition and clean as defined in the most recent CLINIC and OSHA requirements. At a minimum, the facility shall be cleaned after every shift in which it is used.

Decontamination Facility: The number of facilities to be provided will be dictated by the site(s) and the approved by the Engineer. Each facility shall consist of a "clean" area where workers can remove and store clean street clothing when they arrive on site for work, shower room with hot and cold running water, soap and towels and a "dirty" area where work clothing and personal protective equipment may be stored. The showers shall be located between the two areas. The facility shall have adequate clean storage for all employees who are required to use the facility to store their non-work clothing. The facility shall be located as close to the work site as is physically possible. If the Contractor is unable to locate the decontamination facility close to specific work areas, a designated shuttle vehicle shall be provided. This vehicle shall be classified as contaminated and shall remain at the job site in the decontamination zone. This vehicle shall be operated and maintained to

eliminate any possibility of cross contamination with the support zone. The vehicle shall be cleaned as defined in the most recent CLINIC or OSHA protocols. Ownership of and liability for the facility and shuttle vehicle shall remain with the Contractor throughout. The facility shall comply with 29 CFR Part 1926.51.

The walls, ceiling and floors shall be constructed of impervious material to aid in the cleaning of the facility such as, but not limited to, fiberglass and plastic.

Each decontamination facility shall have adequate floor space to accommodate the work force and a minimum ceiling height of seven feet. Windows shall be of a type that will open and close conveniently, shall be sufficient in number and size to provide adequate light and ventilation and shall be fitted with locking devices and screens. The entrance shall be secure, screened and fitted with a lock.

Each facility shall be provided with a lavatory with hot and cold running water or tepid running water and a lead filtration system. It shall also include hand soap or similar cleansing agents. Individual hand towels, paper or cloth, warm air blowers or clean individual sections of continuous cloth toweling shall be provided.

Showers shall be provided for each 10 employees of each sex or numerical fraction thereof, who are required to shower during the same shift. Body soap or other appropriate cleansing agents convenient to the shower shall be provided. Showers shall be provided with hot and cold water feeding a common discharge line. Employees using showers shall be provided with individual clean towels.

Where working clothes are provided by the employer and become wet or are washed between shifts, provision shall be made to ensure that such clothing is dry before reuse.

Each facility and shuttle vehicle shall be cleaned as required or at least once a week. The "clean" area shall be as defined in the most recent CLINIC or OSHA requirements. If wipe sampling shows that cleaning must be conducted more frequently to maintain this standard, then the frequency of cleaning must be increased. Any wastewater that is generated shall be filtered/treated to be acceptable to current state and/or local standards for discharge into the existing public wastewater system.

The Contractor shall equip each facility with an adequate and safe climate controlled system including all necessary fuel; adequate waterproof lighting fixtures and waterproof electrical outlets. All electrical circuits shall be ground fault protected. The Contractor shall also provide exterior illumination of each decontamination facility site. The minimum illumination level shall be two foot candles for a minimum distance of ten feet on each side of the facility. The Contractor shall provide proper trash receptacle(s) and disposal.

If the decontamination facility remains in service through periods of winter weather, the Contractor shall provide snow and ice removal services for the facility site, including but not limited to, driveways, walkways, parking areas and adjacent sidewalks.

Construction Methods: At least 20 working days prior to performing any work on the structure, the Contractor shall submit to the Engineer a written site specific Lead Health Protection Program (LHPP) prepared by a CIH that covers all workers on the project (Contractor, Subcontractor and ConnDOT representatives). The CIH shall be listed by the American Board of Industrial Hygiene.

The LHPP shall include procedures for medical surveillance of the contractors, subcontractors and the state project-related representatives, hazard communication procedures, employee training, protective equipment, and all other procedures that may be necessary to comply with the noted requirements and regulations. The submittal shall also include the following information:

- Name, address, phone number of firm providing the CIH services. Note: Subcontractor approval is required in accordance with Article 1.08.01 – "Transfer of Work or Contract."
- Qualifications/certifications of the firm and staff to be assigned to the project.

Definitions:

"Action level" means employee exposure, without regard to the use of respirators, to an airborne concentration of lead of 30 micrograms per cubic meter of air (30 $\mu g/m^3$) averaged over an 8-hour period.

"Permissible Exposure Limit" (P.E.L.) means employee exposure to airborne concentrations of lead equal to or greater than 50 micrograms per cubic meter of air (50 $\mu g/m^3$) averaged over an eight-hour period. If an employee is exposed to lead for more than 8 hours in any work day, the permissible exposure limit, as a time weighted average (TWA) for that day, shall be reduced according to the following formula: Maximum permissible limit (measured in $\mu g/m^3$) shall be equal to 400 ÷ number of hours worked in the day.

"Employee" means all workers on the project including contractor, subcontractors and ConnDOT representatives.

"Lead" means metallic lead, all inorganic lead compounds and organic lead soaps.

"Employee Lead Exposure" is that exposure which would occur if the employee were not using a respirator.

Lead Health Protection Program:

The LHPP shall consist of written LHPP procedures and on-site inspections, occupational air sampling, wipe sampling and reporting of the procedures by a CIH. The frequency of the on-site surveillance and monitoring shall be dependent upon the type of work to be performed and shall be detailed in the written LHPP procedures.

At the outset of a given job, the IH Firm must submit all written procedures under this item. If there are changes to these procedures, they shall be resubmitted.

The written LHPP procedures shall consists of, but is not be limited to:

1. A written record of all employees involved in work tasks that pose an airborne lead exposure risk at the work site or who may on any day have an exposure exceeding the action

level. Tasks where 30 $\mu g/m^3$ may be exceeded include but are not limited to: welding, burning paint, flame cutting, gouging, abrasive blasting, grinding, chipping, needle gun cleaning, lead burning, manual scraping and sanding, manual demolition of structures, heat gun cleaning, peening on existing structural steel, abrasive blasting debris cleanup, using lead containing mortar, containment moving and removal, power tool cleaning, lead removal equipment cleaning, decontamination trailer cleaning, rivet busting, etc. Those working in the vicinity of these tasks may also be exposed.

For this purpose a daily sign in/out log provided by CLINIC which identifies persons by name, affiliation, and work task for all employees who were at the site during the reporting period must be maintained at the work site and submitted monthly to ConnDOT.

All workers exposed to airborne lead at or above the Action Level on any day will be required to participate in the medical surveillance program. The IH firm shall determine levels of airborne exposure by breathing zone air sampling for airborne lead exposure over a full representative shift. In addition, all workers except those specifically exempted from the comprehensive medical surveillance program who do have or may be anticipated to have lead exposure will be enrolled in the comprehensive medical surveillance program. Those who are exempted from the comprehensive medical surveillance program will be enrolled in the limited medical surveillance program and will be listed with justification for their exemption by the site CIH and the list will be submitted to ConnDOT within five working days of the decision to exempt.

2. Procedures for instituting a medical surveillance program in accordance with 29 CFR Part 1926.62(j) except as noted herein. Frequency of medical examination shall conform to Part 1926.62(j) except where additional testing is specified. Medical surveillance will consist of, but not be limited to, an entry/annual testing protocol, an exit testing protocol, interval and comprehensive examination testing as indicated based upon exposure and prior blood lead level and Zinc Protoporphyrin levels.

3. An entry/annual testing protocol shall apply to all workers covered under this specification and shall include the following:

   A) Complete medical and occupational exposure history focused on lead.

   B) Complete medical examination by a physician trained or experienced in occupational medicine. The records from a previous complete medical examination (conducted within three months) which meets the requirements of Part 1926.62(j) are acceptable in place of another complete medical examination provided that the previous medical examination was conducted by a physician trained or experienced in occupational medicine, utilized appropriate CLINIC protocol and forms and includes vital signs.

   C) Lab testing to include complete blood count (CBC), chemistry screen, blood lead level, Zinc Protoporphyrin level, spirometry and urinalysis including microscopic examination. Other laboratory work or testing dictated by sound medical practice shall be included. Subsequent testing shall include a blood lead and Zinc

Protoporphyrin level monthly for the first four months after the Entry/Annual exam and at month 6. If the blood lead level remains less than 25 μg/dl for all previous months and at month 6, testing shall be conducted at three-month intervals, and there shall be an exit test for blood lead and Zinc Protoporphyrin level. For projects lasting longer than one month exit tests must be done on the employee's last day of employment on the project.

If, at any time during testing, a blood lead level of 25 μg/dl or greater is detected, those workers with blood lead levels greater than 25 μg/dl shall be monitored with blood lead and Zinc Protoporphyrin levels monthly until the blood lead level is less than 25 μg/dl. These workers must also be given one-on-one intervention training by an Industrial Hygienist (IH) on the job. Material discussed should include a determination of how the worker may have gotten the elevated level including specific tasks or practices and what must be done to prevent future excessive exposure. The IH shall report the results of such determination as part of the monthly compliance report.

D) Other medical and/or other testing as required.

4. The Medical Removal requirements shall be as follows:

Blood Lead Level for Removal from Lead Exposure = 30 μg/dl

The reasons for the elevated blood lead level will be investigated by the IH and the worker and a plan of action for reducing exposures will be developed and followed.

This will include:

A) Determination of the reasons for the elevated blood lead level will be made by the IH in consultation with the worker.
B) Development of a plan of action for reducing the exposures.
C) Implementation of the plan.

Should the employee's blood lead level not decrease to below 30 μg/dl on subsequent testing, the employee can be moved to a non-lead exposed job or removed from the exposure at the employer's expense if the doctor so determines based on medical finding. Medical removal protection shall conform at a minimum to 29 CFR Part 1926.62(k) with the exception that medical removal may be required at 30 μg/dl. ConnDOT will not pay for any and all costs associated with the medical removal of an employee.

Employees removed for medical protection may return to their former job status as specified in Part 1926.62(k) with the exception that 2 (two) consecutive test results taken at least 1 week apart indicate a level below 25 μg/dl.

5. Intervention. For any employee with a blood lead level at or above 30 μg/dl the IH Firm shall be immediately informed by the responsible clinic or medical facility and shall be responsible for determining the cause of the elevated lead level and instituting additional

protective and hygiene measures against lead exposure at the job site. A written statement of these determinations shall be included with the monthly compliance report.

6. Procedures for Employee Notification. Within five (5) working days of receipt of the medical surveillance results, the employer shall notify all tested employees in writing of the results of their tests. Also, the employee shall be immediately notified by the employer (within 24 hours of receipt of results) of the blood lead levels which require removal from lead exposure.

7. Employee's exposure should be assessed in accordance with OSHA Part 1926.62(d) and the current CLINIC guidelines for air and wipe sampling. Airborne lead samples shall be analyzed by a laboratory accredited by the AIHA for the analysis of lead in air. Wipe and chip samples may alternatively be analyzed by a laboratory meeting the proficiency requirement of the ELPAT program. The results of all testing shall be reported as part of the monthly compliance report.

8. The CIH shall determine and recommend the implementation of intervention measures based on the airborne lead exposure, wipe sampling, blood lead levels and the observation of work practices. The determination and recommendations should not rely solely on airborne exposure levels (See Parts 1926.62 (h) & (j)).

9. Procedures for the selection of appropriate respiratory equipment and protective clothing for the particular work task shall be developed in conformance with 29 CFR Part 1926.62. The minimum respiratory protective equipment required shall conform to 29 CFR Part 1926.62 for particular work tasks unless a higher level protection is required by the Project IH Firm. If a higher level of protection is recommended, the CIH shall provide written justification of its need. The CIH will assure that proper testing, training, cleaning/storage or replacement and disposal of the utilized articles will be in accordance with 29 CFR Parts 1926.62 (f) & (g), especially 29 CFR Parts 1926.62 (g)(2)(ii-viii). The IH Firm shall monitor the selection and use of respiratory equipment and protective clothing during on-site surveillance and monitoring inspections. The IH Firm will conduct weekly inspections and the CIH will certify that the respirators are being cleaned properly.

10. Procedures for conducting employee training on lead hazards in accordance with 29 CFR Part 1926.62 (1). This training will cover a minimum of, but not limited to, those topics specified in 29 CFR Parts 1926.62 (1)(2)(i-viii) and the Lead Standard 29 CFR Part 1926.62. Employees must be given access to 29 CFR Part 1926.62 and its appendices and all relevant materials. The procedures shall define the site personnel requiring training, the frequency of training, maintenance and training records and qualifications required of the instructor performing the training. In addition, a blood lead level > 25 μg/dl will trigger a special retraining session where the IH works with the individual to determine the cause of the elevation and another session where the IH discusses with the individual the result of that determination and the protective measures instituted. Training shall be provided on-site.

11. The Contractor shall establish and have available at the work site a written Hazard Communication Procedure in accordance with 29 CFR Part 1926.59. This written

procedure shall describe how warning signs, labels, material safety data sheets and employee training will be provided. It must also contain proper work practices for working around hazardous materials. Also contained in this procedure will be a list of hazardous materials generated by a work task, i.e., lead fumes, lead dust, etc. Any training required to meet Part 1926.59 above that required of Part 1926.62 shall be provided.

12. A written Personal Hygiene Procedure which shall be available at the work site and must be in accordance with 29 CFR Part 1926.62 (e)(2)(ii)(F), Paragraph (h) Housekeeping and Paragraph (i) Hygiene Facilities and Practices of 29 CFR Part 1926.62. Workers will not be allowed to eat, drink or smoke or apply cosmetics in areas where there is a potential for lead exposure. The Contractor shall provide a climate controlled decontamination facility containing washing and shower facilities with clean hot and cold water, soap and disposable towels, which the workers will use to wash their hands and face before eating, drinking or smoking and after each working shift. In addition, portable wash units will be provided as the site dictates for use during breaks for personal hygiene. The Contractor shall provide a clean area for eating and drinking and separate clothes - changing area to reduce the chance for lead cross contamination. After employees change clothes and shower, the work clothing, shoes and protective equipment shall remain at the job site until properly cleaned or disposed of. The written plan shall also include procedures for cleaning and assuring cleanliness of these facilities.

    The CIH shall include the following as part of the monthly compliance report:

    a) Certification that all requirements of the LHPP, OSHA, CLINIC guidelines and protocols including occupational air and wipe sampling, training medical surveillance, and elevated blood lead level intervention and reporting have been followed;

    b) A monthly report including:

        1) Results of all air and wipe sampling done during the past month reported on the forms.

        2) A narrative report describing progress on the job site, interpreting the sampling results and making any recommendations necessary.

        3) Blood lead and zinc protoporphyrin levels for all employees listed by name and Social Security Number and a listing of exempted workers by name with justification for exemption. **Copy furnished to ConnDOT shall <u>not</u> include employees' names or Social Security Numbers.**

        4) Reports of the investigations made subsequent to any employees having blood lead level at or above 25 μg/dl including determination of cause and plan of action for remedy. **Copy furnished to ConnDOT shall <u>not</u> include employees' names or Social Security Numbers.**

        5) The daily sign in/out log of people working on the job site for the past month.

6) Submission of required monthly OSHA or CLINIC reporting forms.

Projects lasting less than one year will provide a project summary report at the close of lead-related work and projects lasting more than one year will provide an annual report.

The reports will include the following:

1) All occupational air and wipe sampling and other pertinent data gathered.

2) All blood lead level and zinc protoporphyrin data generated for workers and others on the site identified by name and Social Security Number and presented in chronological order, in a format showing job title/activity for each worker, and describing activities undertaken to limit exposures when elevated blood lead levels are identified, and the results of those activities. **Copy furnished to ConnDOT shall <u>not</u> include employees' names or Social Security Numbers.**

3) A listing of all workers who were medically removed by name and Social Security Numbers and resulting actions. **Copy furnished to ConnDOT shall <u>not</u> include employees name or Social Security Number.**

4) Unusual and/or interesting findings on the bridge project that you have discovered/evaluated/identified that would be valuable to your colleagues, CLINIC, and/or ConnDOT in the management and control of lead exposure on future bridge projects.

5) Summarize recommendations and comments that are designed to improve the capabilities of the "LHPP" to more efficiently and effectively control blood lead levels on ConnDOT bridge work.

Method of Measurement: The work under this item will not be measured for direct payment, but will be included in the Contract Lump Sum price.

This item will include all noted services, equipment, facilities, testing and other associated work for up to three (3) ConnDOT project representatives. LHPP services provided to any ConnDOT project representatives in excess of three (3) representatives will be measured for payment in accordance with Article 1.09.04 – "Extra and Cost-Plus Work."

Basis of Payment: This work will be paid for at the Contract Lump Sum price for "Lead Health Protection Program (LHPP)", which price shall include Lead Health Protection Program, written Lead Health Protection Program Procedures, submittals, reports, employee training, transportation, protective equipment, services of IH firm, cleaning, testing, medical testing, services of medical clinics, medical services and testing, laboratory services and testing, and all materials, tools, and labor incidental thereto.

There will be no direct payment for equipment, including respiratory equipment, blast hoods, air supply hoses, compressor, HEPA vacuum system, filtration, and other associated equipment. These costs shall be considered included in the Lump Sum cost of this item.

There will be no direct payment for hand-wash facility, decontamination facility and shuttle vehicle, including all material, equipment, labor, cleaning, sampling, testing, treatment and disposal of wastewater, utilities, maintenance, services, disposal, laundry, cost of CIH to perform wipe sampling, external illumination, trash removal and snow and ice removal, and work incidental thereto. These costs shall be considered included in the Lump Sum cost of this item.

The intent of these specifications is to provide reimbursement under the Lump Sum price for only those items listed. The costs to contractors and subcontractors of having their personnel attend any training, retraining or refresher courses, receive any testing or fitting of equipment, take any personal hygiene measures, time required for dress up and dress down and of any other activity under the Lump Health Protection Program which requires or entails attendance of contractors' or subcontractors' personnel will not be paid for under this item. Any and all such costs will be considered included in the general cost of the Contract.

PAY ITEM	PAY UNIT
Lead Health Protection Program	LS

ITEM #0603563A – CLASS 1 CONTAINMENT AND COLLECTION OF SURFACE PREPARATION DEBRIS (SITE NO. 1)

Description: Work under this item shall consist of designing, furnishing, erecting and removing S.S.P.C. Guide 6I Class 1 containment enclosures with negative air pressure as required to contain and collect debris resulting from the removal of coatings in the preparation of steel surfaces for painting. Also included are the vacuum collection and the storage of debris in suitable containers.

The containment and collection of debris shall be done in strict conformance with current Federal Environmental Protection Agency and Connecticut Department of Environmental Protection regulations.

Materials: Materials and equipment shall be of satisfactory quality to perform the work and shall not be used on the project until and unless they have been reviewed and approved by the Engineer.

Rigid walls for the containment enclosure shall be comprised of plywood panels or corrugated panels of steel, aluminum or reinforced fiberglass. Flexible containment walls constructed of fire retardant tarpaulin material shall be impermeable to air and water.

Fifty Five (55) gallon barrels with resealable lids, or lined storage containers sized for the job shall be leakproof; shall conform to the Code of Federal Regulations Title 49, Chapter 1, Paragraph 173.510A (1), (5), and Paragraph 178.118; and shall not be used on the project until and unless they have been reviewed and approved by the Engineer.

In meeting the requirements of these specifications, the Contractor shall supply portable battery-operated manometers with a pressure range of -1.00 to 10.00 and increments of 0.01 inches of water and a velocity range of 50 to 9990 feet per minute; and one or more portable lightmeters with a scale of 0.0-50.0 foot candles.

Construction Methods: The Contractor shall proceed with one of the following containment methods: A-Containment enclosure without a suspended platform or B-Containment enclosure with a suspended platform. The Contractor shall design all containment enclosures in accordance with the following:

General Requirements for all Containment Structures:

Working Drawings: At least two months prior to the commencement of abrasive blast cleaning the Contractor shall submit working drawings and design computations for the containment enclosure to the Engineer for review in accordance with Article 1.05.02.

The working drawings and design computations shall be sealed by a Professional Engineer (Mechanical and Civil), licensed in the State of Connecticut, who shall also be available for consultation in interpreting his computations and drawings, and in the resolution of any problems which may occur during the performance of the work. Note that each working drawing must be sealed. The Contractor shall not erect the containment enclosure or commence abrasive blast

cleaning activities until and unless the working drawings have been reviewed and accepted by the Engineer, and shall proceed with such work only within acceptable containment enclosures.

Working drawings shall be submitted on 11" x 17" (Ledger/Tabloid) sheets with an appropriate border and title block. Design computations, procedures and other supporting data shall be submitted on 8 ½" x 11" (Letter) sheets.

The working drawings and design computations shall be prepared using Customary U.S. units.

The working drawings for the containment enclosure shall include, but not be limited to the following:

1. A construction plan detailing proposed coating removal operations, abrasive debris classification and separation, removal and transport of waste to a secure storage site and the project number, town and location.

2. A plan detailing the proposed containment enclosure, including details of the following, as applicable:

A. Containment floors and walls with rigid and flexible materials.
B. Rigid supports and bracing for the floor and wall panels, rigid or flexible supports and bracing for flexible walls.
C. Airflow and air recirculation within the enclosure including a minimum negative pressure of 0.03 in. of water column (W.C.) relative to external ambient air and calculations. Airflow shall meet the S.S.P.C. Guide 6I requirements of 100 ft/min crossdraft and 50 ft/min downdraft and the O.S.H.A. Ventilation Standards. The maximum cross sectional area for airflow within the enclosure shall be 400 square feet.
D. Connections to the bridge, i.e., clamps, rollers. (Note: Welding and bolting is not allowed.)
E. Auxiliary stationary source lighting.
F. Dust collection and filtration equipment, including the equipment data sheets and airflow capacity.
G. Air intake points including filters, louvers, baffles, etc.
H. Entrance/Exit compartment completely sealed with airlocks.
I. Location of equipment and impact on traffic.
J. Elevation view of the containment enclosure with indications of any encroachments on the surroundings. The bridge vertical clearance shall be maintained throughout the project.

The containment structure shall be provided with stationary source lighting.

The containment structure shall be provided with dust collection and filtration equipment. The air intake points shall be provided with filters, louvers, baffles, etc.

Airflow and air recirculation within the enclosure including a minimum negative pressure of 0.03 in. of water column (W.C.) relative to external ambient air and calculations. Airflow shall meet the S.S.P.C. Guide 6I requirements of 100 ft/min crossdraft and 50 ft/min downdraft and the O.S.H.A.

Ventilation Standards. The maximum cross sectional area for air flow within the enclosure shall be 400 square feet.

The containment enclosure shall have an entrance/exit compartment that is completely sealed with airlocks.

The containment enclosure shall be designed to maintain the vertical and horizontal clearance indicated in the contact documents.

The containment enclosure shall be sealed across the bridge deck underside between the girders with a rigid material. The floor shall be covered with a waterproof tarpaulin attached and sealed to the enclosure wall and floor around the entire enclosure perimeter. All edges of tarpaulins shall have a two foot flap that clamps over the connected edges around the entire perimeter. These flaps shall be completely fastened 12 in. on center for both edges and sealed completely with the tarpaulin manufacturer's recommended tape and caulk.

All equipment placement and work shall be in strict conformance with the contract special provisions "Prosecution and Progress" and "Maintenance and Protection of Traffic". The Contractor shall perform all work in accordance with the requirements of any permits for this project.

During abrasive blast cleaning, if the containment enclosure is allowing debris to escape, the Contractor shall immediately stop such work until the enclosure is repaired. Any debris released from the enclosure shall be cleaned up by the contractor immediately.

The containment enclosure shall be disassembled if the wind velocity is greater than 40 miles per hour, if it is forecast to be higher or when directed by the Engineer. However, if the wind velocity is below 40 MPH, but high enough to cause the containment enclosure to billow and emit dust, the Contractor shall immediately cease abrasive blast cleaning and, after cleaning up all the debris, disassemble the enclosure.

All debris resulting from surface preparation shall be contained and vacuum collected daily or more frequently as directed by the Engineer, due to debris buildup. Such debris, abrasive blast residue and paint chips removed by hand or power tool cleaning, shall be stored in leakproof storage containers in the secured storage site, or as directed by the Engineer. Debris storage shall be in accordance with Connecticut Hazardous Waste Management Regulations.

If 55 gallon barrels are used, staging is required: 55 gallon barrels shall be stored together in two rows of five. The Contractor shall maintain a minimum lane clearance of 36 inches between each (barrel lot of ten).

The Contractor shall maintain a secure storage site which shall be large enough to handle all coating debris that is collected and stored on site at any time. The Contractor shall store coating debris only in the secured storage site. During abrasive blast cleaning operations, all surface preparation debris shall be vacuum collected from the containment enclosure and removed to the abrasive recycling reclaimer unit, and the coating debris shall be conveyed to the secured storage site at the conclusion of the work shift. The Contractor shall account for all coating debris conveyed to the secured

storage site and all coating debris transported from the project to the hazardous waste treatment/disposal facility. The Contractor is responsible for the proper handling of the surface preparation debris and coating debris. All spillage shall be cleaned up immediately.

The secure storage site shall consist of an 8-ft. high fenced-in area with a padlocked entrance. Storage containers shall not be used on the project until and unless they have been reviewed and approved by the Engineer. Storage containers and sites shall be located so as not to cause any traffic hazard. Container storage sites shall be in areas that are properly drained and runoff water shall not be allowed to pond. The containers shall be placed on pallets or other approved material and not directly on the ground.

Storage containers shall be closed and covered with a waterproof tarpaulin at all times except during placement, sampling, and disposal of the debris.

The Contractor shall furnish the inspector with two (2) new portable battery-operated nanometers and light meters, per containment enclosure. Negative pressure verification with the portable manometers shall be done by the Engineer before and during abrasive blast cleaning and during vacuum collection of all surface preparation debris. The supplied instruments will become the property of the State upon job completion.

Light at the steel surface within the enclosure shall be maintained by the Contractor at a minimum of 50 foot-candles as measured by a light meter. Such lighting shall be maintained throughout the surface preparation, painting, and inspection activities.

Equipment noise in excess of 90 decibels as measured at the closest residential, commercial or recreational area shall be lowered by the Contractor to a maximum of 90 decibels by the use of mufflers or other equipment approved by the Engineer prior to its use for this purpose.

Any air exhausted from the containment enclosure, abrasive recycling equipment or vacuum equipment shall be passed through a filtering system. The Contractor is responsible for the design, effectiveness and maintenance of this filtering system. No discharge of debris dust shall be allowed.

The Contractor is liable for any fines, costs, or remediation costs incurred as a result of their failure to be in compliance with this special provision and all Federal, State, and local laws.

A. Containment enclosures without a suspended platform:

Since these types of containment structures do not exert appreciable load on the bridge structure the only necessary requirements are those specified above.

B. Containment enclosure with a suspended platform:

These types of containment structures, since they exert loadings on the bridge structure, shall be subject to the following additional requirements unless stated otherwise on the plans:

The containment enclosure shall have a rigid, solid floor or platform supported on rigid members and bracing. The containment walls may be constructed with either rigid or flexible materials.

The containment enclosure shall be connected to the bridge with clamps or rollers. Welded and bolted connections to the bridge are not permitted. Each connection to the bridge shall have a tension load cell attached. A multi-channel digital load indicator shall be connected to all the load cells and located in an area accessible to the Engineer. The load indicator shall be capable of storing peak load readings.

If required by the plans, load ratings for the bridge shall be prepared and submitted in accordance with Article 1.05.02. Load ratings for the bridge shall be done in accordance with PennDot's BAR7 computer program, unless otherwise authorized by the Department. The Contractor shall furnish an electronic copy of the BAR7 input and output files.

Load ratings of the bridge, if required, shall be determined in accordance with the AASHTO Manual for Condition Evaluation of Bridges, Load Factor Method. The computations shall include the effects of the containment structure. An inventory rating of the bridge shall be provided for the pedestrian live load. The load ratings shall include the effects of the loading conditions due to the construction operations and traffic conditions that occur while the containment enclosure is in place. The maximum weight of the containment enclosure shall be such that the inventory rating of the bridge (for the pedestrian load) shall be no less than 0.80 and the operating rating of the bridge shall be no less than 1.00.

The design computations and load ratings shall include, but not be limited to the following:

- references to design specifications, including interim specifications, and the applicable code section and articles
- supporting documentation for prefabricated materials and components
- drawings/models of the structure, components and connections, with dimensions and loads to facilitate review of the results
- maximum allowable load for the floor/platform
- maximum allowable load per hanger connection to the bridge
- wind load comparison computations
- summary form of the load ratings with supporting computations
- data sheets/catalog cuts for the dust collection and filtration equipment, including information on the airflow capacity

Reference information on enclosures can be obtained from the following sources:

SSPC Guide 6I (Con)
Steel Structures Painting Manual, Volume 1.
National Cooperative Highway Research Program Report 265 (NCHRP 265)

Method of Measurement: Work under this item will not be measured for payment, but will be paid for at the contract lump sum price for each site. A site shall consist of an entire bridge structure, unless otherwise noted on the plans.

Basis of Payment: This work will be paid for at the contract lump sum price for "Class 1 Containment and Collection of Surface Preparation Debris (Site No. 1)", at the site designated. The price shall include all materials, equipment, tools, labor and work incidental thereto.

ITEM # 0603923A - ABRASIVE BLAST CLEANING AND FIELD PAINTING OF STRUCTURE (SITE NO. 1)

Description: Work under this item shall consist of surface preparation and field painting of the steel components of through girder pedestrian bridge structure as shown on the plans, as directed by the Engineer and according to these specifications.

All structural steel, except those specific components listed below or on the plans, shall be abrasive blast cleaned and painted with a three-coat system.

Components to be painted include but are not limited to the following: beams and girders, floor beams. diaphragms and cross frames, steel bearings, scuppers, drainage pipes and troughs, state-owned utility conduits, structural steel utility supports, non galvanized structure mounted sign supports, and all other metal components that are an integral part of the bridge system.

Privately-owned utilities, fences, elastomeric bearing pads and bronze components shall be protected from damage by surface preparation and painting operations and are not to be painted.

Work under this item also includes special cleaning and coating of inaccessible areas and non-removable impacted rust, as directed by the Engineer.

Information regarding the pedestrian bridge structure, including the Federal Standard 595 Color Number for the top coat, is included in the plans. Bidders shall examine the structures and shall make their own determinations as to the work involved and conditions to be encountered

Materials: The materials for the coating system for this work shall conform to the requirements of Section M07.02 and the following:

The Contractor shall select a three-coat system from the qualified products Lists A and B issued by the Northeast Protective Coating Committee (NEPCOAT), except System No. SSC(03)-02, comprised of Carbozinc 859 organic zinc rich primer, Carboguard 888 epoxy polyamide, and Carbothatne 133HB aliphatic Polyurethane that shall not be permitted. The approved NEPCOAT listings may be found at the NEPCOAT website at http://www.maine.gov/mdot/nepcoat/index. The system chosen shall have a prime coat that has achieved a Class 'B' slip coefficient Top coat paint color shall be as noted on the plans.

All materials for the complete coating system shall be furnished by the same coating material manufacturer with no subcontracted manufacturing allowed. Intermixing of materials within and between coating systems will not be permitted. Thinning of paint shall conform to the manufacturer's written recommendations. All components of the coating system and the mixed paint shall comply with the Emission Standards for Volatile Organic Compounds (VOC) stated in the Connecticut Department of Environmental Protection's Administration Regulation for the Abatement of Air Pollution, Section 22a-174-20(s).

The top coat shall comply with the color and gloss retention performance criteria of SSPC Paint 36, Level 3, for accelerated weathering. After 2000 hours of accelerated weathering in

accordance with ASTM D4587, the color change (ASTM D 2244) shall be less than 2.0 ΔE* with a loss of gloss (ASTM D 523) less than 30. With the submittals, the Contractor shall provide the Engineer with proof that the finish coat complies with the above criteria.

Materials for coating of inaccessible areas and non-removable impacted rust shall be as recommended by the manufacturer of the 3-coat paint system.

The abrasive media for blast cleaning shall be recyclable steel grit.

Construction Methods:

Contractor - Subcontractor Qualifications: Contractors and subcontractors doing this work are required to be certified by the SSPC Painting Contractor Certification Program (PCCP) to QP-1 entitled "Standard Procedure for Evaluating Qualifications of Painting Contractors: Field Application to Complex Structures". When the work involves the disturbance of lead-containing paint, the Contractor and subcontractor are also required to be certified to SSPC QP-2 "Standard Procedure for Evaluating the Qualifications of Painting Contractors to Remove Hazardous Paint". The certification(s) must be kept current for the duration of the work. If the Contractor's or subcontractor's certification expires, the firm will not be allowed to do any work on this item until the certification is reissued. Requests for extension of time for any delay to the completion of the project due to an inactive certification will not be considered and liquidated damages will apply. In addition, if any recoat times are exceeded, the effected areas shall be abrasive blast cleaned to SSPC-SP 10 and coatings reapplied in accordance with these specifications at no additional cost to the State. At the option of the Engineer, if such a delay will adversely impact the successful and timely completion of the project, the Department may require the Contractor to engage another SSPC certified Contractor to do the painting work at the prime Contractor's expense.

Quality Control Inspections: The Contractor shall perform first line, in process Quality Control (QC) inspections. The Contractor shall implement a Quality Control Program accepted by the Engineer, including written daily reports, that ensures that the work accomplished complies with these specifications. Copies of these reports shall be provided daily to the Engineer. Contractor QC inspections shall include, but not be limited to the following:

- Suitability of protective coverings and containments
- Ambient conditions
- Surface preparation (solvent cleaning, hand/power tool or abrasive blast cleaning, etc.)
- Coating application (mixing, thinning, and wet/dry film thickness)
- Recoat times and cleanliness between coats
- Coating continuity (freedom from runs, sags, overspray, dryspray, pinholes, shadow-through, skips, misses, etc.)
- Final film acceptance

The personnel managing and performing the quality control program shall be NACE Certified Coating Inspector(s) (successfully completed Sessions I, II, III and Peer Review) or shall provide evidence of successful inspection of 3 projects of similar size and scope that have been

completed in the last 2 years. References shall include the name, address, and telephone number of a contact person employed by the bridge owner. The personnel performing the quality control tests shall be trained in the use of the quality control instruments. Documentation of training shall be provided. These personnel shall not perform surface preparation and painting.

Test Equipment and Materials: The Contractor shall furnish the following new test equipment and materials for use by the QC Inspector:

1. Two PTC Surface Temperature Thermometers
2. Psychron 566 Psychrometer (Battery Operated) with two sets of batteries or a Bacharach Sling Psychrometer
3. U.S. Weather Bureau Psychrometric Tables
4. Hypodermic Needle Pressure Gage for nozzle pressure tests.
5. SSPC Visual Standards VIS 1, VIS 3, and/or VIS 4, as applicable.
6. Testex Spring Micrometer
7. Testex Press-O-Film Replica Tape, one roll (100 pieces) each of course and extra-coarse per bridge span.
8. Wet film thickness gage
9. PosiTest, Mikrotest or Elcometer Dry Film Thickness Gauge (FM)
10. SSPC Type 2 Dry Film Thickness Gauge per PA2
11. NIST (NBS) Calibration Standards Range: 0 – 39 mils

Quality Assurance Inspections: The Engineer may conduct Quality Assurance (QA) observations of any or all phases of the work. The presence or activity of Engineer inspections in no way relieves the Contractor of the responsibility to provide all necessary daily Quality Control inspections of its own and to comply with all requirements of this Specification.

The Contractor shall facilitate the Engineer's inspections as required, including allowing ample time for the inspections and providing suitable lighting (50 foot candles minimum at the surface as defined later in this specification). The Contractor shall furnish, erect and move scaffolding or other mechanical equipment to permit inspection and close observation of all surfaces to be cleaned and painted. This equipment shall be provided during all phases of the work. The Contractor shall notify the Engineer in advance of plans to remove staging used in cleaning and painting operations in order to allow for inspection. The QA inspection will be performed with his own equipment when verifying the Contractor's test results in the field.

Safety: All Contractor activities associated with the coating work described and specified herein shall be conducted according to all applicable Federal (OSHA), State of Connecticut safety regulations and SSPC-PA Guide 3 entitled "A Guide to Safety in Paint Application".

Submittals: A minimum of 20 calendar days before starting any surface preparation and coating application work, the painting Contractor shall submit the following to the Engineer for acceptance:

1. A copy of the firm's written Quality Control Program used to control the quality of surface preparation and coating application including ambient conditions, surface cleanliness and

profile, coating mixing, dry film thickness, final film continuity, etc.

2. A copy of the firm's written surface preparation and application procedures. This written program must contain a description of the equipment that will be used for removal of laminar and stratified rust, for surface preparation, including the remediation of soluble salts, and for paint mixing and application, including stripe coating. Coating repair procedures shall be included.

3. A detailed description of the Contractor's enforcement procedures and the authority of personnel.

4. If the application of heat inside containment is proposed, provide information on the procedures that will be used and data sheets for the equipment.

5. Overspray control and containment plan.

6. Proof of SSPC-QP1 qualifications and QP2 qualifications, as applicable.

7. Proof that the finish coat complies with the color and gloss retention performance criteria of SSPC Paint 36, Level 3, for accelerated weathering.

8. Coating product information, including coating manufacturer, product name, application instructions, technical data, MSDS and color chips.

9. Abrasive product information, including abrasive manufacturer, product name, technical data, and MSDS.

10. Touch-up and repair procedures, including methods and materials.

The Contractor shall not begin any paint removal work until the Engineer has accepted the submittals. The Contractor shall not construe Engineer acceptance of the submittals to imply approval of any particular method or sequence for conducting the Work, or for addressing health and safety concerns. Acceptance of the programs does not relieve the Contractor from the responsibility to conduct the Work in strict accordance with the requirements of Federal, State, or local regulations, this specification, or to adequately protect the health and safety of all workers involved in the project and any members of the public who may be affected by the project. The Contractor remains solely responsible for the adequacy and completeness of the programs and work practices, and adherence to them.

Ambient Conditions: Surface preparation and coating application work shall only be done inside a containment enclosure as specified elsewhere in these specifications. No surface preparation or coating work shall be performed when the conditions inside the containment enclosure are as follows:

- When the relative humidity is at or above 90 percent.
- When the substrate is damp or covered by frost or ice.

- When the surface temperature or air temperature are less than 50 degrees Fahrenheit or greater than 100 degrees Fahrenheit.
- When the surface temperatures of the steel or air are less than five (5) degrees Fahrenheit above the dewpoint temperature as determined by a surface temperature thermometer and electric or sling psychrometer.

If the requirements of the coating manufacturer differ from the ranges provided above, comply with the most restrictive requirements unless directed otherwise by the Engineer in writing.

Protective Coverings: The Contractor shall protect property, water courses, pedestrians, vehicular, and other traffic upon, underneath, or near the bridge, and all portions of the bridge superstructure and substructure against abrasive blast cleaning damage or disfigurement from splatters, splashes, or spray of paint or paint materials. See the specification for "Class 1 Containment and Collection of Surface Preparation Debris (Site No. 1)". All coating overspray, drips and spills shall be contained. Maintain the integrity and security of all protective coverings and containment materials throughout the entire project.

Any paint chips, paint removal media (e.g., abrasives), coating or solvent that has escaped the Contractor's containment enclosure shall be cleaned up immediately. For bridges over water, the Contractor shall have on site a sufficient quantity of spill containment boom and pads to contain a spill. The length of containment boom on site shall be at least equal to twice the length of the active work site over the water.

Observed Steel Defects: If significant deficiencies, such as cracks or section losses, are found during cleaning or coating operations, the Contractor shall immediately notify the Engineer as to their extent. Significant deficiencies include the following:

a) Cracks in any part of the superstructure
b) Section loss more than 1/8 of an inch or section loss equal to or greater than 5 percent of flange thickness in the maximum moment areas (i.e. Section loss in the middle one half of a single span structure.)

c) Section loss more than 1/4 of an inch or section loss equal to or greater than 25 percent of the flange thickness in other than the maximum moment areas (i.e. Section loss up to quarter points of the middle one half of a single span structure.)

d) Section loss more than 1/8 of an inch or section loss equal to or greater than 15 percent of web thickness in the maximum shear areas (i.e. Section loss within five feet of the bearing center line.)

e) Section loss more than 1/8 of an inch or section loss equal to or greater than 25 percent of web thickness in other than the maximum shear areas (i.e. Section loss found a minimum of five feet beyond the bearing center line.)

Heating Devices: The Contractor may use heating devices to obtain and maintain a condition within the containment enclosure that is suitable for surface preparation and painting application,

up to and including the minimum time to recoat, or minimum time to dry for service or topcoat. Heating devices shall be limited to gas or oil-fired indirect air heaters in which the combustion products are discharged separately from the forced airstream to an area outside the containment enclosure. The heating devices must be configured so as not to form condensation on cold surfaces or cause rust-back and must be automatically controlled. Information describing the proposed heating devices and the proposed heating procedures shall be provided a minimum of 20 days in advance for Engineer acceptance.

Lighting Requirements: A minimum illumination level of 20 foot-candles shall be provided throughout the inside of the containment enclosure during surface preparation and coating application work. A minimum illumination level of 50 foot-candles shall be provided at the location of the specific work task and for inspection. All lighting fixtures and related connectors located inside the containment enclosure must be explosion proof and UL listed.

Material Storage: The Contractor shall provide a suitable facility for the storage of paint that complies with all Federal and State laws and regulations.

This facility shall provide protection from the elements and ensure that the paint is not subjected to temperatures outside of the more stringent of (1) the manufacturer's written recommended temperature extremes, or (2) below 40 degrees Fahrenheit or above 100 degrees Fahrenheit. If paint application takes place in conditions that require heating of the containment, then the temperature of the stored paint shall be maintained as at similar temperature. Storage of paint shall be in reasonable proximity to the painting locations. The Engineer shall be provided access to the stored paint anytime for inspection and to witness removal of the materials. The Contractor's facility for the storage of paint shall be subject to the approval of the Engineer.

Equipment: All equipment used in surface preparation and removal of debris, such as hoses, hoppers, recycling and vacuum machines that the Contractor brings to the site, shall be clean and free of any prior debris.

Spray equipment, brushes and rollers used in application of coatings shall be sized sufficiently and be in proper working order to accomplish the work according to the manufacturer's written recommendations.

Compressed Air: All compressed air sources shall have oil and moisture separators, attached and functional, and properly designed and sized. The compressed air sources shall deliver air to the blast nozzle, for blowing down the surfaces, or for conventional spray application that is free of oil and moisture and of sufficient pressure to accomplish the associated work efficiently and effectively. The tanks on the air compressor and moisture separator shall be drained at the end of each workday. The compressed air source shall produce a minimum pressure of 90 psi at the nozzle during abrasive blast cleaning.

The Contractor shall verify that the compressed air is free of moisture and oil contamination in accordance with the requirements of ASTM D4285. The tests shall be conducted at least every four hours for each compressor system in operation. Sufficient freedom from oil and moisture is confirmed if soiling or discoloration is not visible on the paper. If air contamination is

evidenced, the Contractor shall change filters, clean traps, add moisture separations or filters, or make other adjustments as necessary to achieve clean, dry, air.

Test Sections: Prior to surface preparation, the Contractor shall prepare a test section(s) on each structure to be painted in a location(s) that the Engineer considers to be representative of the existing surface condition and steel type for the structure as a whole. The test section(s) shall be prepared using the same equipment, materials and procedures as the production operations. The Contractor shall prepare the test section(s) to the specified level according to the appropriate SSPC written specifications and visual standards. The written requirements of the specification prevail in the event of a conflict with the SSPC visual standards. Only after a test section area has been approved shall the Contractor proceed with surface preparation operations. The test section(s) shall cover approximately 10 square feet each. Additional compensation will not be allowed the Contractor for preparation of test sections.

For the production cleaning operations, the specifications and written definitions, the test section(s), and the SSPC visual standards shall be used in that order for determining compliance with the contractual requirements.

Surface Preparation:

1 – Laminar and Stratified Rust: All laminar and stratified rust or corrosion products that have formed on any area of the existing steel surfaces and accessible rust formed along edges of connected plates or shapes of structural steel shall be removed. The tools used to remove these corrosion products shall be identified in the submittals and accepted by the Engineer. If the surface preparation or removal of rust results in nicks or gouges, the work will be suspended. The Contractor shall demonstrate that the necessary adjustments have been made to prevent a reoccurrence of the damage prior to resuming work.

2 – Near White Metal Blast Cleaning (SSPC-SP10): Steel surfaces shall be cleaned by the specified methods described in the SSPC Steel Structures Painting Manual, Volume 2 - Systems and Specifications, latest edition. The structural steel shall be abrasive blast cleaned according to SSPC-SP 10 “Near White Blast Cleaning”. Before and after blast cleaning, all dissolvable foreign matter, such as oil, grease, and dust shall be removed by wiping or scrubbing the surface with rags or brushes wetted with solvent in accordance with the provisions of SSPC-SP 1 “Solvent Cleaning.” Clean solvent and clean rags or brushes shall be used for the final wiping.

All foreign materials such as dirt, dust, rust scale, sand, bird droppings, and all materials loosened by abrasive blasting operations shall be completely removed by vacuuming before any painting operations are begun.

The cleaned surface shall be accepted by the Engineer before any painting. If the surface is determined to meet the requirements of SSPC-SP 10, painting operations can commence. The prime coat shall be applied to the steel before the end of the day that preparation was performed and before the formation of any flash rusting or rerusting of the steel. Flash rusting or rerusting of the surface is unacceptable and requires additional blast cleaning prior to painting.

Failure of the Contractor to prepare and clean the surfaces to be painted according to these specifications shall be cause for rejection by the Engineer. All surfaces that are rejected shall be recleaned to the satisfaction of the Engineer according to these specifications, at no additional cost to the State.

3 – Steel Grit Abrasive Mix: The recyclable steel grit abrasive mix shall be maintained and monitored such that the final surface profile is within the range specified elsewhere in these specifications.

Before each reuse, the recyclable steel grit abrasive shall be cleaned of mill scale, rust, paint, and other contaminants by an abrasive reclaimer.

On a weekly basis during blast cleaning operations, the Contractor shall verify that the recycled steel grit abrasives meet the requirements of SSPC-AB2. If the abrasive fails the testing, all abrasive blast cleaning operations shall be suspended. The abrasive reclaimer shall be repaired and another abrasive sample will be required for testing after grit recovery and reclassification. For test results within the acceptable limits, abrasive blast cleaning may resume. Test results outside of the acceptable limits will require additional equipment repairs or replacement at no cost to the State. If additional repairs were performed, another sample will be required for testing after grit recovery and reclassification. It the test results continue to remain outside of the acceptable limits, the Contractor shall replace the abrasive reclaimer at no cost to the State.

4 - Surface Profile: The specified height of the steel surface profile shall be according to the paint Manufacturer's written instructions in effect at the time that the product was tested for NEPCOAT and shall be uniform. Verification of the profile height will be done with Testex Replica Tape. A surface profile correction factor will be measured according to SSPC-PA 2, Section 2.2.4 with the dry film thickness gauge.

Painting Operations:

1 - General: All coatings shall be supplied in sealed containers bearing the manufacturers name, product designation, batch number and mixing/thinning instructions. Leaking containers shall not be used. Storage, opening, mixing, thinning and application of coating materials shall be accomplished in strict accordance with the written requirements and procedures published by the respective coating material manufacturer and supplier. In the event of a conflict, the Contractor shall notify the Engineer in writing, and unless directed otherwise in writing, the requirements of this specification shall prevail. The Contractor shall always have at the project site the current copies of all material safety data sheets (MSDS), technical data, recommendations and procedures published by the coating manufacturer for the coating materials.

2 - Paint Mixing and Thinning: Thinning shall be performed only to the extent allowed by the manufacturer’s written instructions, and only with the manufacturer’s approved thinner. In no case shall thinning be permitted that would cause the coating to exceed the local VOC restrictions. For multiple component paints, only complete kits shall be mixed and used. Partial mixing is not allowed.

The ingredients in the containers of paint shall be thoroughly mixed by mechanical power mixers in the original containers, or as directed by the manufacturer, before use or mixing with other containers of paint. The paint shall be mixed in a manner that will break up all lumps, completely disperse pigment and result in a uniform composition. Paint shall be carefully examined after mixing for uniformity and to verify that no unmixed pigment remains on the bottom of the container. Excessive skinning or partial hardening due to improper or prolonged storage will be cause for rejection of the paint, even though it may have been previously inspected and accepted.

Multiple component coatings shall be discarded after the expiration of the pot life. Single component paint shall not remain in spray pots, painter's buckets, etc. overnight. It shall be stored in a covered container and remixed before use.

The Engineer reserves the right to sample field paint (individual components and/or the mixed material) and have it analyzed. If the paint does not meet the product requirements due to excessive thinning or because of other field problems, the coating shall be removed from that section of the structure and replaced as directed by the Engineer.

3 – Methods of Application: All applicators of the specified coating material shall show proficiency on a test panel, or a portion of the structure as selected by the Engineer, to the satisfaction of the Engineer before commencing full-scale application.

The preferred method for coating application shall be by airless spray equipment. For stripping and for application in areas where complex shapes or tight clearances will not allow spray application, the Contractor shall apply the coating material by appropriately designed and constructed rollers and brushes.

4 – Recoat Times: The recoat time of the primer, intermediate and top coat shall not deviate from the written recommendation of the manufacturer or the times specified in these specifications, complying with the most restrictive requirements unless directed otherwise by the Engineer in writing. If any individual time is exceeded, the effected areas shall be abrasive blast cleaned to SSPC-SP 10 and coatings reapplied in accordance with these specifications at no additional cost to the State.

5 – Film Continuity: All applied coatings shall exhibit no running, streaking, sagging, wrinkling, holidays, pinholes, top coat color or gloss variation, or other film defects. Failure of the Contractor to apply coatings that are free of film defects shall be cause for rejection by the Engineer. All coatings rejected shall be repaired to the satisfaction of the Engineer, at no additional cost to the State. Before doing any coating repair work, the Contractor shall submit to the Engineer for approval the procedures that will be used to repair the coating.

6 - Technical Advisor: It is mandatory that the Contractor obtain the services of a qualified technical advisor employed by the coating manufacturer. This advisor shall be familiar with the technical properties of the coating products and proper application methods. The technical advisor shall assist the Engineer and the Contractor in establishing correct application methods for the complete coating system. He/she shall be present at the work site before the opening of

the material containers and shall remain at the site until the Engineer is satisfied that the Contractor's personnel have mastered the proper handling, mixing and application of the material. The Engineer may call the technical advisor back to the site if there are concerns that the Contractor is not handling, mixing or applying the material correctly.

7 - Containment Plan: For each individual site, the Contractor shall submit a plan of containment to the Engineer for acceptance. The plan shall be submitted twenty days before commencing painting operation. The prime coat is applied within the same containment used for abrasive blast cleaning. The minimum containment enclosure for the intermediate and top coat shall conform to the requirements of SSPC Guide 6, Class 3A and the following. Components of the containment system must be made from flame retardant materials. Tarpaulin material shall be clean and impermeable to air and water. Joints shall be fully sealed except for entryways. Entryways shall use multiple flap overlapping door tarps to minimize dust escape through the entryway. All mists or dust shall be filtered with collection equipment. For truss bridges a ceiling shall also be included.

8 - Prime Coat Application: All prepared surfaces shall be cleaned by vacuuming to remove dust, remaining debris, and other surface contaminants before coating. Such surfaces shall then be sprayed, brushed or rolled within the specified abrasive blast cleaning containment enclosure with the specified primer material before the end of the day or before any visible rust-back occurs. If rust-back occurs, effected surfaces shall be recleaned to the satisfaction of the Engineer according to these specifications, at no additional cost to the State.

All plate and shape edges, plate seams, back to back angle seams, pitted steel, and other sharp discontinuities shall be hand-striped with a brush in the longitudinal direction with the primer. Bolted connections shall also have all bolt heads and nuts hand-striped in a circular brush motion with the primer material. Stripe coats shall be applied before or after the full prime coat application. The prime coat material used for hand-striping shall be tinted to distinguish it from material used for full prime coat application.

The zinc rich primer shall be applied to dry surfaces within the more restrictive temperature range (both steel and air) as specified in the manufacturer’s written application instructions or between 50 degrees Fahrenheit to 100 degrees Fahrenheit, unless directed otherwise by the Engineer in writing. The dry film thickness shall be according to the manufacturer's written instructions in effect at the time that the product was tested for NEPCOAT. The dry film thickness will be checked for compliance by measuring above the peaks of the substrate profile per the guidelines of SSPC-PA 2.

The dry primer shall be free of all surface and embedded contamination and dry spray.

9 - Intermediate Coat Application: When the primer has cured per the manufacturer's recommendations (not to exceed 30 days), all previously coated surfaces shall receive the intermediate coat. The cured and dry primer coat shall be clean and free of all surface and embedded contamination and dry-spray. If it is not clean and free of all contamination, and dry-spray, the surfaces shall be cleaned by using clean rags or brushes to water wipe, solvent wipe, or detergent wash and rinse. Power washing is not allowed. Temperature ranges (both steel and air)

shall be the more restrictive of that specified in the manufacturer's written application instructions or between 50 degrees Fahrenheit to 100 degrees Fahrenheit, unless directed otherwise by the Engineer in writing. The dry film thickness shall be according to the manufacturer's written instructions in effect at the time that the product was tested for NEPCOAT. The intermediate coat shall be of a contrasting color to the prime and topcoat colors. The dry film thickness will be checked for compliance per the guidelines of SSPC-PA 2.

10 - Top Coat Application: When the intermediate coat has cured per the manufacturer's written recommendations (not to exceed 10 days), all previously coated surfaces shall receive the top coat. The cured and dry intermediate coat shall be clean and free of all surface and embedded contamination and dry-spray. If it is not clean and free of all contamination, and dry-spray, the surfaces shall be cleaned by using clean rags or brushes to water wipe, solvent wipe, or detergent wash and rinse. Power washing is not allowed. Temperature ranges (both steel and air) shall be the more restrictive of that specified in the manufacturer's written application instructions or between 50 degrees Fahrenheit to 100 degrees Fahrenheit, unless directed otherwise by the Engineer in writing. The dry film thickness shall be according to the manufacturer's written instructions in effect at the time that the product was tested for NEPCOAT.

11 - Date of Completion: The word "PAINTED", followed by the month and year the painting of each structure is completed along with the manufacturer's abbreviations for each of the three coats, shall be stenciled on the inside of a fascia girder/stringer at mid-depth of the member in three (3) inch high block letters near each abutment, to be clearly visible from the ground below. In order to ensure uniformity, abbreviations shall be approved by the Engineer prior to application of the stenciled information.

Method of Measurement: This item, being paid for on a lump sum basis for each site, will not be measured for payment.

Basis of Payment: This work will be paid for at the contract lump sum price for "Abrasive Blast Cleaning and Field Painting of Structure (Site No. 1)", which price shall include all materials, equipment, painting overspray containment enclosure, heating devices, tools, labor, and services of the technical advisor. No direct payment will be made for the cost of storage or hauling the paint and other materials to and from the bridge site, but the cost thereof shall be included in the lump sum price as noted above.

The cost of special cleaning and coating of inaccessible areas and non-removable impacted rust shall also be paid for under this item.

The containment and collection of surface preparation debris shall be paid for under the item **"**Class 1 Containment and Collection of Surface Preparation Debris (Site No. 1)".

Disposal of spent abrasive contaminated by lead shall be paid for under the item, "Disposal of Lead Debris".

Pay Item	Pay Unit
Abrasive Blast Cleaning and Field Painting of Structure (Site No. 1)	L.S.

ITEM #0901003A – REMOVABLE ORNAMENTAL STEEL BOLLARD

Description:

The work under this item consists of the construction and installation of steel bollards and appurtenances conforming to the dimensions and details shown on the Drawings and in accordance with the provisions of these Specifications, or as directed by the Engineer.

Materials:

Bollards shall be:

Model Number: BOL-OR-40-BK
Bollard Diameter: 4-1/2"
Color: Black
Socket Color: Galvanized

As Manufactured by:
Vestil Manufacturing Corp.
2999 North Wayne Street
P.O. box 507
Angola, IN 46703
Phone: 260-665-7586
Toll Free: 800-348-0868
Fax: 260-665-1339

Or Approved Equal

Concrete: Class "C"

Reinforcing Steel: Meet the requirements of the Standard Specifications

Construction Methods:

Bollards are to be installed in the locations shown and as detailed on the plans.

Install Bollards plumb and true. Any damages to finishes during installation are subject to bollard replacement at no cost to the owner or repair of finish to original condition.

Methods of Measurement:

This item shall be measured for payment by the actual number of steel bollards installed where indicated on the plans or ordered by the Engineer.

Basis for Payment:

Payment for this item shall be at the contract unit price bid per each "Steel Bollard" complete in place, which price shall include all materials, equipment and labor incidental to or necessary for the satisfactory installation of the bollards, including excavation, sleeves, concrete, reinforcing steel, drainage piping, painting, reflective sheeting, concrete collar and footing, forms, back fill, and all other work incidental to or necessary for the satisfactory completion of work under this item.

PAY ITEM	PAY UNIT
Removable Ornamental Steel Bollard	EA

ITEM #0906202A – THREE RAIL WOOD FENCE

Description:

Work under this item shall consist of furnishing and installing wood posts rail and fence at the locations given on the plans and in accordance with the dimensions and details shown on the plans, or as ordered by the Engineer.

Submittals:

The Contractor shall submit shop drawings and product data prior to placing order and receipt of materials for this item.

Materials:

a. All lumber shall conform to Voluntary Product Standard PS-70 and be certified according to applicable standard grading and dressing rules and shall bear the official grade and/or trademark of the association under whose rules it is produced.

b. Wood: See details for post, rail and picket nominal dimensions. All wood shall be white cedar. All wood to be new, solid, sound, and surface dry with a maximum moisture content of 19%. All wood shall be clearly marked with the official grading information.

Construction Methods:

The posts shall be set in holes dug in thoroughly compacted soil and the bottom of the hole shall be thoroughly rammed so that the posts will have a stable foundation. Holes shall be hand dug when posts are within five (5) feet a utility line.

Should rock or boulders be encountered in making the excavation, this material shall be removed so as to make a hole of sufficient size to set the posts to the normal depth as called for on the plan.

The posts shall be spaced as shown on the plans, set plumb and normally with the front face at a uniform distance from the edge of the traveled way.

The holes shall be backfilled with an approved material which shall be thoroughly compacted.

Method of Measurement:

This work shall be measured for payment by the number of linear feet of rail measured along the top of the rail from end to end.

Basis of Payment:

Payment for these items will be at the contract unit price bid per linear foot for "THREE RAIL WOOD FENCE", complete in place, which price shall include all materials, equipment, tools, and labor incidental to the installation of the completed and accepted rail/fence, including hand dug holes, excavation, and backfill.

Three Rail Wood Fence	LF

ITEM # 0912518A – REMOVE AND RESET METAL BEAM RAIL

Description:
Work under this item shall consist of the removing, storing, and resetting of existing metal beam rail, including single posts, anchorages, a single or double line of metal beam rail at the locations indicated on the plans or as ordered by the Engineer. It shall be reset where shown on the plans and installed and fabricated in conformity with the lines, designations, dimensions, and details shown on the plans or as ordered by the Engineer.

Materials:
The material for guiderail shall meet the requirements as specified within the original applicable contract items.

When resetting metal beam rail, the Contractor shall reuse any undamaged existing rail elements, appropriate posts, delineators, lap bolts, and other hardware within the project limits as approved by the Engineer to reset the metal beam rail.

The Contractor shall use new materials conforming to the requirements of M.10 when any components of the existing railing are damaged or missing and cannot be obtained from other guiderail systems being removed or converted within the Project limits. Weathering steel posts and elements shall be ASTM A 588 steel. The bottom of any new weathering steel posts shall be galvanized in accordance with ASTM A-123 to provide 2" exposed galvanized coating above ground. Any new hardware to be used with weathering steel shall be galvanized.

Construction Methods:
The resetting of metal beam rail shall be in accordance with Section 9.10, 9.11, and 9.18 when applicable.

Method of Measurement:
The length of reset metal beam rail measured for payment shall be the number of feet of completed rail measured along the top of rail between center of posts in each continuous section of reset rail.

Basis of Payment:
This will be paid for at the contract unit price per linear foot for "Reset Metal Beam Rail" complete in place. This price shall include the complete removal, storage and resetting of existing metal beam rail, including excavation, backfilling, providing and installing new material if required, and disposal of surplus or unsuitable material, and all equipment, tools, and labor incidental thereto.

Pay Item	Pay Unit
Remove and Reset Metal Beam Rail	LF

ITEM #0914013A – ORNAMENTAL METAL FENCE (2.25' HIGH)
ITEM #0914015A – ORNAMENTAL METAL FENCE (3.5' HIGH)
ITEM #0914016A – ORNAMENTAL METAL FENCE (4.5' HIGH)
ITEM #0914019A – ORNAMENTAL METAL FENCE (6' HIGH)

Description: This item will consist of furnishing, and installing ornamental metal fence at the location, grades, and to the dimensions and details shown on the plans, and in accordance with these specifications.

Materials: Shop drawings and data sheets shall be submitted in accordance with 1.05.02.3 listing all materials and products proposed for use.

Acceptable models and manufacturers of ornamental metal fence are:

1. Model: Aberdeen 3 Rail Color: Black. As manufactured by: Iron World, 9390 Davis Avenue, Laurel, Maryland 20723, P: 866-310-2747

2. Model: Montage Industrial 3 Rail Majestic, Color Black. Ameristar Fence Products, Inc, 1555 N. Mingo Rd. Tulsa, Oklahoma 74116, P: 888-333-3422

3. Model: Classic Premier Universal 3 Rail, Color Black. As Manufactured by: Master Halco, 60 Belamose Ave. Rocky Hill, Connecticut 06067, P: 860-257-4449

   Or approved equivalent.

A. All primary fence components, pickets, rails and posts shall be manufactured from carbon steel having minimum yield strength of 36 ksi, unless otherwise approved.

B. Primary fence components; pickets, rails and posts shall be galvanized by the hot-dip process to meet the requirements of ASTM A 123 and shall have the minimum zinc coating thickness indicated in Table 1 of that standard.

   4. Refer to Ornamental Metal Fence details on sheet SD-3 for required picket, rail, and posts sizes.

   2. Bolts, nuts, and other hardware shall be hot-dip galvanized in accordance with ASTM A 153.

   3. Touch-up galvanized coating shall conform to the requirements of ASTM A 780 using material conforming to Federal Specification TT-P-641, Type I. The use of Aerosol spray cans shall not be permitted.

   4. After the fencing components have been completely fabricated and all welds ground smooth, the components shall be hot-dip galvanized in accordance with

ASTM A 123. The dry kettle process shall be used. Water quenching of galvanized steel shall be prohibited.

5. Material for galvanizing shall be suitably fabricated for galvanizing in accordance with the most efficient provisions and requirements of ASTM A 385, as approved by the Engineer.

C. Pickets shall be steel bars confirming to ASTM A 36/A 36M or ASTM A 108, Grade 1022.

D. Rails shall be made of not less than cold rolled steel conforming to ASTM A 108, Grade 1022. The cross-sectional shape of the rails shall conform to that indicated or the manufacturer's standard design, as approved.

E. Posts shall be tubular steel conforming to ASTM A 36.

F. Brackets for field assembling picket panels shall conform to ASTM A36. Unless otherwise approved by the Engineer, all joints with posts shall be welded all around so as to prevent bare spots, or locations free of zinc.

1. On the same side of the post, one side of each bracket shall be provided with a slotted hole for expansion. On the other side of the post the hole shall be square, just large enough to allow for the bolt installation.

G. All flat bars and shapes shall conform to ASTM A36.

H. Bolts for field assembling fence shall be round head square neck type conforming to ANSI/ASME B18.5, nuts shall be heavy hex type conforming to ANSI/ASME B18.2.2, unless otherwise approved.

I. Anchor bolts where indicated for anchoring base plates of posts to concrete shall be either threaded rod expansion-type or an adhesive capsule with threaded rod with nut type. In either case, when installed that portion of the threaded rod extending beyond nut shall be nicked or otherwise deformed to prevent the nut from being removed.

J. Grout shall be provided for anchoring of all fence posts, unless otherwise directed by the Engineer.

1. Grout shall be non-shrink, made from factory-premixed material containing no corrosive irons, aluminums, or gypsums, with the following properties:

a.

Non-shrink from time of mixing	ASTM C827
No expansion after set	ASTM C827
Initial set time	ASTM C191
Compressive Strength	ASTM C109

b. An effective bearing area (EBA) of 95 to 100 percent.

c. Grout that contains water reducers, accelerators or fluidifiers shall have no drying shrinkage greater than the equivalent sand cement and water mix as tested under ASTM C596.

2. The grout shall not shrink below its placement volume and shall not expand after set. Grout shall have a 1-day compressive strength of not less than 3000 psi and a minimum compressive strength of 6500 psi in 28 days.

3. Grout shall have an initial setting time of not less than 45 minutes.

4. Acceptable Manufacturers are:

a. "Five Star Grout" by U.S. Grout Corp., Old Greenwich, Connecticut.

b. SikaGrout 212 by Sika Corp., Lyndhurst, NJ 07071

c. K-Ment Anchoring Cement by the Euclid Chemical Company, 19218 Redwood Road, Cleveland, OH 44110.

K. Finish Painting: All hot-dip galvanized steel fence components shall receive one of the following shop applied coating systems:

KEELER AND LONG	
Primer Coat	Kolor-Poxy #3200
Finish Coat	Kolorane Y-Acrythane Series Enamel
CARBOLINE	
Primer Coat	Carboline 888 Primer
Finish Coat	Carbothane 134HB Enamel
VALSPAR	
Primer Coat	Val Chem 13-F-62 Primer
Finish Coat	V40 Series Urethane Enamel

The finish color of all work shall be semi-gloss black, No. 27040 of Federal Standard No. 595a.

Storage of the paint system materials shall be in a dry, well-ventilated area, not in direct contact with the ground, where the temperature is maintained between 50ºF and 100ºF. Damaged materials and/or materials exceeding the manufacturer's recommended shelf life shall not be used.

Construction Methods:

The fence shall be installed in accordance with the details shown on the plans. The posts shall be firmly and accurately set plumb with the top and bottom rails set parallel to the top of the wall, proposed grade or steel beams.

Finishing of All Fabricated Products:

All hot-dip galvanizing and painting shall be performed in climate controlled shop ambient conditions.

All shop fabrication, unless otherwise approved by the Engineer, shall be of welded construction. The surface preparation, procedures, electrodes, finishing and inspection shall be in accordance with AWS D1.1/D1.1M:2002.

Surface Preparation of Galvanized Surfaced: Surface preparation shall consist of cleaning galvanized steel surfaces in accordance with the methods listed herein. The cleaned surfaces shall be approved by the Engineer or his appointed inspector prior to any painting. Exposed bare steel surfaces on galvanized material shall be touched up in accordance with ASTM A 780 prior to applying paint system.

All foreign matter such as oil, grease, and dirt shall be cleaned from the surface using a biodegradable cleaner (i.e., Carboline #3 Cleaner or Dev-Prep 88) in accordance with the Steel Structures Painting Council Surface Preparation No. 1 (SSPC-SP1) "Solvent Cleaning." All surfaces shall then be brush blasted in accordance with SSPC-SP7 "Brush-Off Blast Cleaning" using a fine abrasive at nozzle pressures not to exceed 60 psi. The abrasive blast media shall be non-ferrous and softer than zinc. A uniform anchor profile of 2.5 to 3.8 mils shall be achieved. Brush blasting must be performed to 100% of the surface area being coated.

All surfaces brush blasted must be primed the same day.

Application: Handling, mixing, and all other facets of application and curing of paint shall be in accordance with the manufacturer's written instructions unless otherwise instructed in these specifications.

Paint, substrate, and air temperature at the time of application shall be between 60 and 100ºF unless otherwise specified by the manufacturer.

Paint shall not be applied unless the temperature of the surfaces being coated is, and will remain, at least 40ºF above the dew point until the coating is dry "to touch."

The relative humidity shall be less than 85% during application.

The paint shall be thoroughly mixed prior to and during application. Mechanical agitations during application may be necessary to keep pigment in suspension. Paint shall not be

transferred (other than to simplify mixing) until all pigment has been incorporated. Air shall not be used directly for agitation.

Paint materials may not be used beyond the recommended pot life.

Thinners shall not be added to paint unless it is absolutely necessary for application. The amount of thinner used shall not exceed the manufacturer's recommendations for quantity and type. If used, the thinner shall only be added in accordance with the manufacturer's instructions, under the Engineers presence.

Spraying is the preferred method of application. Brushing, rolling and/or mitt application may be used where appropriate.

The paint system on galvanized surfaces shall have the following thickness:

Primer Coat: 75 to 125 microns Dry Film Thickness
Finish Coat: 38 to 63 microns Dry Film Thickness

Paint thickness will be determined in accordance with SSPC PA-2 "Measurement of Dry Paint Thickness with Magnetic Gages." The number of readings will be a minimum of that stated in SSPC PA-2.

Finishing of Fasteners: Fasteners and anchor bolts shall be hot-dipped galvanized and treated as required to receive field touch-up painting after erection, unless otherwise directed. Field touch-up painting shall include both prime and finish coats.

All defective work shall be corrected by the Contractor at no cost to the Department.

Installation:

Fence posts shall be installed as detailed on the plans and as described as follows:

Attachment to top of Steel Beams (On Pedestrian Bridge – 2'-3" high)

The fence posts shall be attached to the top of the bridge girders by drilling four (4) holes through the top flange and top angle to the dimensions and size shown on the plans. The post base plate shall be attached to the steel girder with 4 – ¾" A325 bolts, washer, and nuts (galvanized). Threads should be burred to prevent removal after installation.

Attachment to concrete footings (4.5' high)

The Contractor shall make provisions for setting all fence posts on top of existing concrete walls, and providing epoxy anchors of the size indicated on the plans.

Attachment to concrete footings (4.5' and 6' high)

Provide concrete footing where required or indicated. Footings shall be formed using 12-inch diameter Sonotube forms of not less than 2 feet in depth. Provide 4-inch sleeves or block-outs in concrete footings for fence. Beneath the footings shall be placed coarse aggregate or broken stone to a depth of 12-inches.

Preparation and Installation of Fence Posts:

Concrete surface shall be free of all loose material and steel shall be clean and free of corrosion.

Surfaces shall be free of oil, grease, loose paint, corrosive deposits, dust, laitance and other contaminants and sleeves and holes shall be clean of dust and debris.

Perform all grouting in accordance with the recommendations of ACI and the grout manufacturer's published specifications for site preparation, product mixing, and placing. For grouting in weather below 50ºF, contact manufacturer for cold weather instructions.

Arrange with the manufacturer of the grout for the services of a qualified field representative to instruct the work crews in the mixing of components, preparation of surfaces, technique of installation, and inspection procedures. The representative shall remain at the job site after work commences until the representative is satisfied that the grout is being installed correctly.

Erecting Fence Panels

After the posts have been properly grouted, and the grout fully cured, the fence panels may be installed.

All fence panels shall be delivered prepared for installation by field bolting only. Field welding is disallowed, except by the written permission of the Engineer.

After all threaded fasteners have been installed the exposed threads beyond the nut shall be nicked to prevent easy removal. Fasteners shall receive the same finish treatments as the fence. With field touch-up painting provided as necessary.

Method of Measurement:

This work shall be measured for payment by the number of feet of completed and accepted fence measured along the top of rail between centerline of posts in each continuous section.

Basis of Payment:
This will be paid for at the contract unit price per linear foot for “Ornamental Metal Fence (High)” complete in place. This price shall include the excavation, backfilling, placement of concrete footings, drilling holes in existing structural steel beams, drilling holes in concrete and installing of epoxy anchors, and all equipment, tools, and labor incidental thereto. “Ornamental Metal Fence (2.25’ High)” will be paid for as part of “Add Alternate No.3”.

Pay Item	Pay Unit
Ornamental Metal Fence 3.5’	LF
Ornamental Metal Fence 4.5	LF
Ornamental Metal Fence 6’	LF

ITEM #0921015A – UNIT PAVER SIDEWALK

Description:

The work under this item shall include all labor and materials necessary to the limits shown on the plans to provide for installing unit paver sidewalks, accessible ramps, and detectable warning strips where shown on the drawing, including all necessary excavation and compaction for proper subgrade preparation.

Installation shall be by a contractor and crew with at least three years of experience in placing interlocking concrete pavers on projects of similar nature or dollar cost.

Materials:

Materials are to be supplied by: Hanover Architectural Products
5000 Hanover Road
Hanover, PA 17331
p. 717-637-0500

Products from qualified manufacturers having a minimum of 5 years experience manufacturing unit pavers will be acceptable by the Engineer as equal, if they meet the following specifications for design, size, color and fabrication.

Paver Field
- Model: Apian Brick – Tumbled Finish
- Size: Mixed
- Color: Salmon/Charcoal
- Pattern: Random
- Or approved equal

Paver Banding
- Model: Halifax Flagstone
- Size: 12”x12” and 8”x12”
- Color: South Mountain Sand
- Pattern: Soldier Course
- Or approved equal

Concrete Pavers:

Pavers shall meet the minimum material and physical properties set forth in ASTM C 936, Standard Specification for Interlocking Concrete Paving Units.

1. Average compressive strength 8000 psi with no individual unit under 7,200 psi.

2. Average absorption of 5% with no unit greater than 7% when tested according to ASTM C 140.

3. Resistance to 50 freeze-thaw cycles, when tested according to ASTM C 67, with no breakage greater than 1.0% loss in dry weight of any individual unit. This test method shall be conducted not more than 12 months prior to delivery of units.

Pigment in concrete pavers shall conform to ASTM C 979. ACI Report No. 212.3R provides guidance on the use of pigments.

Processed Aggregate Base:

Processed Aggregate Base shall conform to the requirements of section 3.04 of the Standard Specifications.

Concrete:

The concrete shall conform to the requirements of section 9.21 of the Standard Specifications.

Reinforcing:

The reinforcing shall conform to the requirements of Article M.06.01 of the Standard Specifications.

Setting Bed:

Bituminous concrete leveling course: Class 12 per DOT Form 816.

Neoprene Tack Coat shall meet the following requirements:

1. Mastic (asphaltic adhesive):
   a) Solids (base) content by volume = 75 ± 1%.
   b) Weight = 8 to 8.5 lb./gal
   c) Solvent vehicle – Varsol (over 75 degrees F flash)

2. Base (2% neoprene, 10% fibers, 82% asphalt):
   a) Melting point (ASTM D-36-95) = 200 degrees F, minimum
   b) Penetration at 77 degrees F 3.5 oz. load 5 second = 23 to 27.
   c) Ductility (ASTM D-113-99 at 77 degrees F 3/16"/minute = 50 in. minimum.

Joint Sand:

Unilock® Unicare Polymeric Sand Plus (for Heavy Traffic Areas), color: Tan, or approved equivalent.

Paver Edge Restraint:

Paver edge restraint to be Pave Edge Rigid as manufactured from Pave Tech, Inc., 8626 Hollander Drive, Franksville, Wisconsin 53126, Phone: (262)-884-800, Fax: (262)-884-8006, or approved equivalent.

Submittals:

1. Shop or product drawings and product data shall be submitted.

2. Full size samples of concrete paving units shall be submitted to indicate color and shape selections. Color will be selected by Owner or Owner's Representative from available colors.

3. Test results shall be submitted from an independent testing laboratory for compliance of paving unit requirements to ASTM C 936 or other applicable requirements.

4. One 5'x5' sample panel shall be installed as specified and detailed for approval by the Landscape Architect and Borough Engineer.

Paver sample panels shall be installed in an area approved by the Engineer and shall be protected throughout duration of the project.

These sample panels will be used to determine joint sizes, lines, laying pattern(s), color(s), and other design features.

These panels shall be the standard from which the work will be judged.

Construction Methods:

Do not install pavers during heavy rain or snowfall.

Verify that subgrade preparation, compacted density and elevations conform to the specifications.

Site Preparation

The site must be stripped of all topsoil and other objectionable materials to the grades specified.

All sub drainage of underground services within the pavement area must be completed in conjunction with subgrade preparation and before the commencement of subbase construction.

After trimming to the grades specified, the subgrade is to be proof rolled to 95 percent Standard Proctor Density in the presence of the Engineer, with soft spots or localized pockets of objectionable material excavated and properly replaced with approved processed aggregate base.

The subgrade shall be trimmed to within 0 to ½ in. of the specified grades. The surface of the prepared subgrade shall not deviate by more than 3/8 in. from the bottom edge of a 10 ft. straight edge laid in any direction.

The Contractor shall ensure that the prepared subgrade is protected from damage from inundation by surface water. No traffic shall be allowed to cross the prepared subgrade. Repair of any resulting damage shall be the responsibility of the Contractor and shall be repaired.

Under no circumstances shall further pavement construction proceed until the Owner and/ or the Consultant has inspected the subgrade.

Processed Aggregate Base

Install processed aggregate base in conformance with Section 3.04 of the Standard Specifications and as shown on the details.

Concrete Base Installation

The concrete base shall be installed in conformance with Section 9.21 of the Standard Specifications and as shown on the details. The concrete base shall be finished to within 0 to 3/8 in. of the specified grade. The surface of the prepared concrete base shall not deviate more than 3/8 in. from the bottom edge of a 10 ft. straight edge laid in any direction.

Provide a finished surface for the concrete to the dimensions and details as shown on the plans.

Paver Installation

The contractor shall not install any pavers until after the Engineer has approved the paver sample panels.

Before placing pavers, the concrete base shall be inspected by the Engineer. Install a bituminous concrete leveling course as detailed on the plans.

A coating of neoprene-modified asphalt setting adhesive shall be applied by mopping, squeegeeing or troweling over the top surface of the bituminous concrete leveling course so as to provide a bond under the pavers. If adhesive is trowel-applied, trowel shall be serrated type with serration not to exceed 1/16".

Pavers shall be installed in patterns as shown on drawings. In areas where standard patterns do not apply, Contractor shall obtain design modifications from the Engineer prior to the installation of the pavers. Where required, cut pavers with an approved cutter to fit accurately, neatly and without damaged edges. After a section of the sidewalk has been completed, fill joints by sweeping in dry clean polymeric sand and tamp down pavers uniformly with a mechanical vibrator to true grade and free of movement.

It is the responsibility of the Contractor to discard all damaged pavers during the installation process. The Contractor shall replace any damaged pavers identified by the Engineer during final inspection.

Along all edges where pavers do not abut any other pavement, curbing, structures, or any stable materials, the Contractor shall install edging in order to retain pavers, regardless if edging is identified on drawings.

Method of Measurement and Basis of Payment:

All work associated with this item shall be paid as follows: "Unit Paver Sidewalk" by the square yard complete in place, which price shall include all excavation, subgrade, processed aggregate base, concrete base, expansion and construction joint dowels, reinforcing, bituminous concrete leveling course, neoprene tack coat, polymeric sand, pavers, paver edge restraints, all materials, equipment, tools, and labor incidental thereto.

Description	Unit
Unit Paver Sidewalk	SY

ITEM #0922250A – BITUMINOUS CONCRETE TRAIL

Description:

The work under this item shall consist of the construction of a paved trail consisting of formation of subgrade, grading, processed aggregate base, material for tack coat, Superpave mix courses in the locations and to the dimensions shown on the plans and in accordance with the details.

Materials:

Superpave mix material shall conform to the provisions of Section M.04 as revised in the Standard Specifications and to the Notice to Contractors included in the Special Provisions.

Processed aggregate base shall conform to the provisions of Section M.05 of the Standard Specifications.

Material for Tack Coat shall conform to the provisions of Section 4.06 and M.04 of the Standard Specifications.

Construction Methods:

Grading operations shall be performed in accordance with the provisions of Section 2.02 of the Standard Specifications.

Processed aggregate base shall be placed and compacted in accordance with applicable portions of Section 3.04.03.

Superpave 0.25 inch mix and 0.375 inch mix courses shall be constructed in accordance with the provisions of Section 4.06.03 as revised in the Standard Specifications.

The Contractor shall arrange his schedule such that the surface course of the paved trail is placed after all construction involving heavy vehicles or equipment has been completed such that those vehicles do not travel on the surface course at any time. Any damage to the surface course (depressions, cracking, etc.) caused by heavy vehicles shall be repaired to the Engineer's satisfaction at the Contractor's expense.

Method of Measurement

All work associated with this item shall be measured by the square yard complete in place. In no case will there be payment made for areas exceeding the dimensions shown on the plans, unless directed otherwise by the engineer in advance of performing such work.

Basis of Payment:

This work will be paid for at the contract unit price per square yard for "Bituminous Concrete Trail" complete in place, which price shall include all excavation, backfill, disposal or surplus material, formation of subgrade, processed aggregate base, superpave material, material for tack coat, and all equipment, tools, labor, and materials incidental thereto.

Pay Item	Pay Unit
Bituminous Concrete Trail	SY

ITEM #0939001A SWEEPING FOR DUST CONTROL

Description:

This item shall consist of furnishing all equipment, materials and labor necessary for dust control as directed by and to the satisfaction of the Engineer.

Materials:

All materials shall conform to the applicable sections of the Standard Specifications.

Construction Methods:

All construction methods shall conform to the applicable sections of the Standard Specifications.

Method of Measurement:

This work will not be measured for payment.

Basis of Payment:

This work will be paid for per hour for "Sweeping for Dust Control." Included in the cost of the work shall be all materials, labor and equipment necessary for dust control as directed by and to the satisfaction of the Engineer.

Pay item	Pay Unit
Sweeping for Dust Control	HR

ITEM #0944002A – FURNISH AND PLACE TOPSOIL

Description:

This work shall consist of mixing stockpiled topsoil with new topsoil, furnishing topsoil, placing, and shaping topsoil in areas shown on the plans or where directed by the Engineer. The topsoil shall be placed to the depth stated on the plans. All work and materials shall conform to the Requirements of Section 9.44 of the Standard Specifications Form 816, with the following exceptions:

Materials:

The material shall conform to the requirements of Section M.13.01-1 of the Standard Specifications Form 816, with the following exceptions:

Topsoil shall be natural, friable loam, free of subsoil, roots, sticks, clay, stones larger than 3/4 inch in any dimension, or any other objectionable extraneous matter or debris. It shall contain no toxic materials. Topsoil shall contain a minimum of six percent organic matter (humus) but not to exceed more than 20 percent organic matter and shall have a pH not less than 5.5 nor more than 7.0. Soluble salts content of over 500 parts per million is unsuitable. Avoid tidal marsh soils because of high salt content and sulfur activity.

All topsoil being used, whether from on-site stockpiles or off-site sources, is to be tested after stockpiling. Representative samples of topsoil shall be tested for acidity, fertility and general texture by a recognized and approved government testing agency and three (3) copies of findings and recommendations shall be furnished to the Engineer by the Contractor. The testing agency shall, after testing, determine the amount of limestone and fertilizer to be added to the topsoil. All test costs shall be borne by the Contractor.

Construction Methods:

Use all topsoil stripped and stockpiled on the site. All stockpiled topsoil shall be screened. During the bidding period, the Contractor shall determine whether sufficient topsoil is available to meet the requirements as herein specified and as called for on the drawings. If he determines that additional topsoil shall be required, he shall include such additional topsoil in his base bid price.

The areas on which topsoil is to be placed shall be graded to a reasonably true surface and cleaned of all stones, brickbats, and other kinds of rubbish. After areas have been brought to proper subgrade and approved by the Engineer, topsoil shall be spread to the depth specified, with due allowance made for settlement. All stones, roots, debris, sod, weeds, and other undesirable material shall be removed from the topsoil. After shaping and grading, all trucks and other equipment shall be excluded from the topsoiled area to prevent excessive compaction. The Contractor shall perform such work as required to provide a friable surface for seed germination and plant growth prior to seeding.

During hauling and spreading operations, the Contractor shall immediately remove any material dumped or spilled on roadways.

It shall be the Contractor's responsibility to restore to line, grade, and surface all eroded areas with approved material and to keep topsoiled area in acceptable condition until the completion of the construction work.

Wherever subgrade material is sand, gravel or other questionable material, and elsewhere as required by the Engineer, the Contractor shall consult the Engineer to decide on treatment of subgrade before placing the topsoil.

There shall be no application of topsoil made without the prior approval of the finished subgrade by the Engineer or his representative.

Placement of topsoil shall be performed only when it can be followed within a reasonable time by the seeding and sodding operation.

Resupplying of topsoil to eroded or settled areas to finish grade shall be the responsibility of the Contractor. Care shall be taken not to damage lawn area in the replacement of topsoil.

All excess topsoil shall remain the property of the Owner. If the topsoil remains after spreading required amounts, it shall be stockpiled on-site where directed by the Engineer.

Method of Measurement:

This work will be measured for payment at the actual number of square yards of "Furnishing and Placing Topsoil" completed and accepted by the Engineer.

Pay limits shall be as shown on the contract documents and specified within this special provision.

a. In areas of Bituminous Trail construction there shall be a maximum pay limit of 4' in width on either side of the trail, where appropriate, measured from the edge of new trail pavement and in accordance with the applicable detail.

b. In areas of Removal of Bituminous Type Pavement, maximum pay limits shall extend 4' from the outermost limit of the existing paved area where it abuts existing lawn areas.

Basis of Payment:

This work will be paid for at the contract unit price bid per square yard for “Furnishing and Placing Topsoil" which price shall include all work shown within the pay limits shown on the contract drawings including all materials, equipment, labor, tools and work incidental thereto.

Pay item	Pay Unit
Furnish and Place Topsoil	SY

ITEM #0949000A – WOOD CHIP MULCH

Description:

This item shall include furnishing and placing of mulch in the areas shown on the plans and/or at locations approved by the Engineer.

Submittals:

Certified Test Report:

Submit 5 copies of certified test reports for mulch in accordance with the contract general requirements.

Materials:

Mulch shall be shredded bark and shall be a natural forest product of 98% bark containing less than 2% wood or other debris. It shall be of White or Red Fir and/or Pine bark of a uniform grade with no additives or any other treatment. Size of bark shall be from 5/8" – 1-1/4". The pH factor should range from 5.8 - 6.2.

Construction Methods:

The Contractor shall notify the Engineer of the location from which the Contractor proposes to furnish the mulch to the project at least 15 calendar days prior to delivery.

The mulch 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 will be rejected and shall be replaced with suitable material by the Contractor.

Method of Payment:

The work will be measured for payment by the total number of square yards of surface area covered by mulch and accepted.

Basis of Payment:

This work will be paid for at the contract unit price bid per square yard for "WOOD CHIP MULCH", complete in place, which price shall include all materials, maintenance, equipment, tools and labor incidental thereto.

Pay item	Pay Unit
WOOD CHIP MULCH	SY

ITEM #0950005A – TURF ESTABLISHMENT - LAWN

Description: The work under this Item includes the furnishing and placing of fertilizer, lime, seed, and mulch on all areas to be seeded as shown on the plans or where directed by the Engineer. All work and materials shall conform to the Requirements of Section 9.50 of the Standard Specifications Form 816, with the following exceptions:

Submittals

a. Samples: Submit sample and product literature and guarantees in accordance with requirements of the General Conditions for the following:

a. Seed: Submit all empty seed bags after application of seed to the Engineer and one sample for approval prior to application of the seed.

b. Fertilizer and Limestone: - Submit for approval manufacturer's label or literature of product being used.

c. Mulch: - Submit one bale of salt hay.

Materials: The materials for this work shall conform to the requirements of Section M.13 of Standard Specification Form 816. The following mix shall be used for this item:

Turf Seed Mix:
In order to preserve and enhance the diversity, the source for seed mixtures shall be locally obtained within the Northeast USA including New England, New York, Pennsylvania, New Jersey, Delaware, or Maryland. One approved seed mixture is detailed below. Other proposed mixtures must be approved by the project Landscape Architect.

Species		
Proportion (Percent)	**Common name**	**Scientific name**
25	Abbey Kentucky Bluegrass	Poa pratensis
15	Envicta Kentucky Bluegrass	Poa pratensis
25	Pennlawn Red Fescue	Festuca rubra
15	Ambrose Chewing Fescue	Festuca rubra
20	Manhattan Ryegrass	Lolium perenne

Application Rate: 250 LBS/Acre

Construction Methods: Construction Methods shall be those established as agronomically acceptable and feasible and that are approved by the Engineer. Rate of application shall be field determined in Pure Live Seed (PLS) based on the minimum purity and minimum germination of the seed obtained. Calculate the PLS for each seed species in the mix. Adjust the seeding rate for the above composite mix, based on 250 lbs. (274 kg.) per acre (hectare). The seed shall be mulched in accordance with Article 9.50.03.

Preparation - Soil Preparation Procedures: Ground limestone shall be applied to the lawn and sod areas at a rate as recommended by the testing agency and thoroughly incorporated into the top three (3) inches of the soil at least five (5) days before seeding or sodding. Application of limestone shall be at least enough to bring the topsoil to a final pH reading of 6.5 - 7.0 prior to seeding or sodding procedures.

Fertilizer shall be applied at a rate of twenty (20) pounds per one thousand (1,000) square feet or as specifically recommended by the testing agency. The fertilizer shall be thoroughly incorporated into the top two inches of the topsoil.

Areas shall be made friable and receptive to seeding by methods approved by the Engineer. In all cases, the final prepared area shall meet the lines and grades for such surface as shown on the plans, or as directed by the Engineer. In no event will seeding be allowed on hard or crusted soil surface.

All areas shall be free from weeds. Removal of the weed growth from the slope areas shall be by approved methods, including hand mowing, which do not rut or scar the slope surface, or cause disruption of the slope lines and grades. Seeding on level areas shall not be permitted until all weed growth is substantially removed.

Seeding Season: The normal seeding dates for seeding shall be as follows:

Spring: March 15th to June 15th.
Fall: August 15th to October 15th.

These periods may be extended or reduced according to prevailing weather conditions at the time, upon approval by the Engineer.

If the Contractor seeds outside the seasonal periods, any additional material furnished and placed to establish growth shall be done at the Contractor's expense. The Contractor must also reseed, mulch and repair any areas seeded, whether out-of-season or not, that are damaged by fire, erosion, or any other cause, as directed by the Engineer at no expense to the Town.

Seeding Methods: Seed shall be uniformly applied by mechanical seeder and approved by the Engineer.

Before any seed is sown, the ground shall be raked until the surface is smooth, friable and of uniformly fine texture. No seed shall be sown on any area, which has not been so prepared. Lawn areas shall be seeded at the rate of five pounds of seed mixture to 1,000 square feet or 217 pounds per acre of lawn area. The seed shall be sown evenly by an approved mechanical seeder. After sowing, the seed shall be raked lightly in the ground, and the surface then rolled with a water-ballast, 150-pound roller and watered thoroughly with a fine spray. No seeding shall be permitted after a rain unless the surface of the ground is loosened or when the velocity of the wind exceeds a gentle breeze or about five miles per hour. Extreme care shall be taken during seeding and raking so that no change in grading is made and so that the seed is not raked from one spot to another.

Broadcast Seeding: Half the seed shall be sown with the sower moving in one direction, and the remainder shall be sown with the sower moving at right angles to the first sowing.

The Contractor shall not use rye seed as a starter crop for the grass mixes called for above. The use of such seed in the seed mixes will be cause for turning under and complete reseeding of the areas so affected.

Mulching: Areas seeded shall be mulched with salt hay unless otherwise ordered by the Engineer. Wood chip mulch shall not be used on seeded areas. Unless otherwise directed, mulch will be applied at a rate of one bale per 2,000 square feet. The mulch will be anchored according to the direction of the Engineer.

Compaction: The Contractor shall keep all equipment, vehicular and pedestrian traffic off areas that have been seeded to prevent excessive compaction and damage to young plants. Where such compaction has occurred, the Contractor shall re-work the soil to make a suitable seedbed; then re-seed and mulch such areas with the full amount of the specified materials, at no extra charge to the Town.

Cleanup: This work will not be considered complete until all cleanup operations are complete. This shall include the removal of all debris resulting from the seeding operation. The Contractor shall be required to shape, grade, and establish vegetative cover in accordance with the specifications on all areas disturbed outside the normal limits of the construction.

Warranties and Certificates: The Contractor shall supply the Engineer with all warranties or certificates, or both, furnished with the seed mixture or fertilizer prior to use of the material, if so requested.

Maintenance: The Contractor shall be held responsible for the maintenance of all work and parts thereof prior to final acceptance.

Maintenance shall include watering of seeded areas, mowing, weeding, cleaning up, edging, repairs of washouts and gullies, repairs to protecting fences and all other necessary work of maintenance.

The Contractor shall provide an adequate and acceptable turf. Adequately protect all lawn areas and mow until the lawn areas are acceptable to the Engineer. Once the turf areas are acceptable to the Engineer, the Contractor shall turn lawn maintenance over to the Owner. All clippings during cutting by the Contractor must be removed off-site. Mowing by the Contractor shall be as directed by the Engineer and shall not begin until grass attains an initial height of four (4) inches.

After final acceptance by the Owner, the Contractor will not thereafter be required to do any of the above work, except that nothing contained herein shall release the Contractor from his obligations under the Contract.

Fertilizer Schedule:

Commercial Fertilizer (10-8-4): Commercial fertilizer with the following composition by weight: Nitrogen, 10 percent; Phosphoric Acid (P205), eight percent; Potash, four percent. These elements may be organic, inorganic or a combination and shall be available according to the methods adopted by the Association of Agricultural Chemists. Commercial fertilizer (10-8-4) shall be delivered in sealed, standard sized bags of the manufacturer, accompanied by the manufacturer's guarantee. Store all fertilizer in such a manner that its effectiveness shall not be impaired.

Method of Measurement:

"Turf Establishment - Lawn" will be measured for payment by the actual number of square yards of surface area installed and accepted by the Engineer.

Pay limits shall be as shown on the contract documents and specified within this special provision.

a. In areas of Bituminous Trail construction there shall be a maximum pay limit of 4' in width on either side of the trail, where appropriate, measured from the edge of new trail pavement and in accordance with the applicable detail.

b. In areas of Removal of Bituminous Type Pavement, maximum pay limits shall extend 4' from the outermost limit of the existing paved area where it abuts existing lawn areas.

Basis of Payment: The work will be paid for at the contract unit price bid per square yard for "Turf Establishment - Lawn" which price shall include all work shown within the pay limits shown on the contract drawings including all materials, equipment, labor, tools and work incidental thereto.

Pay Item	Pay Unit
Turf Establishment - Lawn	SY

ITEM #0950029A – TURF ESTABLISHMENT - NEW ENGLAND MIX

Description: The work included in this item shall consist of providing an accepted stand of established native wildflowers and grasses by furnishing and placing seed as shown on the plans or as directed by the Engineer.

Submittals:

a. Submit sample and product literature and guarantees in accordance with requirements of the General Conditions for the following:

b. Seed: - Submit native seed mixtures for approval prior to application of the seed and all empty seed bag labels after application of seed to the Engineer. Species types within Native Seed Mixtures listed below may vary dependent upon season and/ or availability of species' seed.

c. Mulch: - Submit sample for approval prior to application.

Materials: The materials for this work shall conform to the requirements of Section M.13 of Standard Specification Form 816. All seed mixtures shall be supplied by Companies that specializes in native seed mixes and to the requirements below. All seed mixtures shall be free of invasive species. The following mix shall be used for this item:

a. Native Seed Mixtures:

Erosion Control / Restoration Mix

SPECIES	PERCENT
Virginia Wild Rye *(Elymus Virginicus)*	28
Creeping Red Fescue *(Festuca Rubra)*	24
Little Bluestem *(Schizachyrium Scoparium)*	15
Big Bluestem, Niagra *(Andropogon Gerardii)*	8
Fox Sedge *(Carex Vulpinoidea)*	8
Switch Grass *(Panicum Virgatum)*	8
Upland Bentgrass *(Agrostis Perennans)*	1
Creeping Bentgrass *(Agrostis Stolonifera)*	1
New England Aster *(Aster Novae-Angliae)*	1
Boneset *(Eupatorium Perfoliatum)*	1
Grass Leaved Goldenrod *(Euthamia Graminifolia (Solidago G.)*	1
Sensitive Fern *(Onoclea Sensibilis)*	1
Green Bulrush *(Scirpus Atroviens)*	1
Blue Vervain *(Verbena Hastata)*	1
Soft Rush *(Juncus Effusus)*	0.5
Wool Grass *(Scirpus Cyperinus)*	0.5

TOTAL 100

Application Rate: 35 LBS/ ACRE (1250 SQ. FT./ LB.)

b. Approved Supplier: New England Wetland Plants, Inc., 820 West Street, Amherst, MA 01002 (413) 548-8000 or approved equal.

Construction Methods: Construction Methods shall be those established as agronomically acceptable and feasible as determined by the Engineer. The seed shall be mulched in accordance with Article 9.50.03.

1. Preparation - Soil Preparation Procedures: Areas shall be made friable and receptive to seeding by methods approved by the Engineer. In all cases, the final prepared area shall meet the lines and grades for such surface as shown on the plans, or as directed by the Engineer. In no event will seeding be allowed on hard or crusted soil surface.

   All areas shall be reasonably free from weeds taller than three (3) inches. Removal of the weed growth from the slope areas shall be by approved methods, including hand mowing, which do not rut or scar the slope surface, or cause disruption of the slope lines and grades. Seeding on level areas shall not be permitted until substantially all weed growth is removed.

2. Seeding Season: In accordance with the supplier's recommendations.

   These periods may be extended or reduced according to prevailing weather conditions at the time, upon approval by the Engineer.

   If the Contractor seeds outside the seasonal periods, any additional material furnished and placed to establish growth shall be done at the Contractor's expense. The Contractor must also reseed, mulch and repair any areas seeded, whether out-of-season or not, that are damaged by fire, erosion, or any other cause, as directed by the Engineer at no expense to the Owner.

3. Seeding Methods: Seed shall be uniformly applied by mechanical seeder and approved by the Engineer.

   Before any seed is sown, the ground shall be raked until the surface is smooth, friable and of uniformly fine texture. No seed shall be sown on any area that has not been so prepared. The seed shall be sown evenly by an approved mechanical seeder. After sowing, the seed shall be raked lightly in the ground, and the surface then rolled with a water-ballast, 150-pound roller and watered thoroughly with a fine spray. No seeding

shall be permitted after a rain unless the surface of the ground is loosened or when the velocity of the wind exceeds a gentle breeze or about five (5) miles per hour. Extreme care shall be taken during seeding and raking so that no change in grading is made and so that the seed is not raked from one spot to another.

Broadcast Seeding: Half the seed shall be sown with the sower moving in one direction, and the remainder shall be sown with the sower moving at right angles to the first sowing.

The Contractor shall not use rye seed as a starter crop for the seed mixes called for above. The use of such seed in the seed mixes will be cause for turning under and complete reseeding of the areas so affected.

4. Mulching: Areas seeded shall be mulched with salt hay unless otherwise ordered by the Engineer. Wood chip mulch shall not be used on seeded areas. Unless otherwise directed, mulch will be applied at a rate of one bale per 2,000 square feet. The mulch will be anchored according to the direction of the Engineer.

5. Compaction: The Contractor shall keep all equipment, vehicular and pedestrian traffic off areas that have been seeded to prevent excessive compaction and damage to young plants. Where such compaction has occurred, the Contractor shall rework the soil to make a suitable seedbed; then re-seed and mulch such areas with the full amount of the specified materials, at no extra charge to the Owner.

6. Cleanup: This work will not be considered complete until all cleanup operations are complete. This shall include the removal of all debris resulting from the seeding operation. The Contractor shall be required to shape, grade, and establish vegetative cover in accordance with the specifications on all areas disturbed outside the normal limits of the construction.

7. Warranties and Certificates: The Contractor shall supply the Engineer with all warranties or certificates, or both, furnished with the seed mixture prior to use of the material, if so requested.

8. Maintenance: The Contractor shall be held responsible for the maintenance of all work and parts thereof prior to final acceptance.

   Maintenance shall include watering of seeded areas, weeding, clean-up, edging, repairs of washouts and gullies, repairs to protecting fences and all other necessary work of maintenance.

   The Contractor shall provide an adequate and acceptable growth of vegetation of the type specified. Adequately protect all seeded areas until the areas are acceptable to the Engineer.

After final acceptance by the Owner, the Contractor will not thereafter be required to do any of the above work, except that nothing contained herein shall release the Contractor from his obligations under the Contract.

9. Seed Schedule: All specified seed mixes shall be installed per the manufacturer's specific recommendations for seeding rates, seed bed preparation and seeding season/date requirements.

   If feasibility of this seed schedule cannot be met, contact the engineer immediately for review.

Method of Measurement: This work will be measured for payment by actual the number of square yards of surface area of accepted established grasses installed or by the number of square yards of surface area of seeding actually covered and accepted by the Engineer.

Basis of Payment: This work will be paid for at the contract unit price per square yards for "Turf Establishment - New England Mix," which price shall include all work shown within the pay limits shown on the contract drawings including all materials, equipment, labor, tools and work incidental thereto.

Pay Item	Pay Unit
Turf Establishment - New England Mix	SY

ITEM #0952051A – CONTROL AND REMOVAL OF INVASIVE VEGETATION

Description:

This work shall include eradication and removal of unwanted vegetation at the locations identified on the plans or where directed by the Engineers. The Engineer will designate all invasive vegetation to be removed, including, but not limited to Asiatic Bittersweet (*Celastrus orbiculatus*), Multiflora Rose (*Rosa multiflora*), Tree of Heaven (*Ailanthus altissiuma*), Japanese Knotweed (*Polygonum cuspidatum*), Honeysuckle species (*Lonicera spp*.), and Black locust (*Robinia pseudoacacia*) as depicted on the plans. Within the areas shown on plans, there are desirable species, which will remain.

Materials:

All herbicides shall be registered for the species being treated and shall be formulated for cut surface or injection applications. Broadcast or uncontrolled spray application will not be permitted.

Construction Methods:

The removal and eradication of all unwanted vegetation shall be initiated at the beginning of the spring, unless otherwise indicated in this specification. Conduct treatment and removal only at times and under conditions approved by the Engineer. All removal items shall be marked by the Contractor and approved by the Engineer prior to the start of work.

Vegetation designated for removal shall be flush cut, and remaining stubble chemically treated with the appropriate herbicide, or with roots completely removed to prevent resprouting. Flush cut all brush and trees not more than 2 inches above the ground line. Remove all twining vines in treetops to the extent possible without damaging branches of supporting desirable vegetation. Cut and remove vines overtopping tree canopies. Climbing spikes will not be permitted for aerial work. All cut vegetation shall be chipped and disposed of off site.

Complete eradication of invasive plants is essential to the process. Chemically treat all live stems or completely remove root systems where planting will occur. Any resprouting within one year of removal shall be treated. Make all applications in strict conformance to the herbicide manufacturer's recommendation and per requirements of regulatory agencies. Report in writing the formulation, concentration, area treated, and date for each application.

Specifically for Japanese Knotweed (*Polygonum cuspidatum*), the treatment shall consist of cutting or mowing of the stalks in late June. Stalks should then be allowed to regrow until after August 1st when they shall be sprayed with a Habitat™ or approved equivalent. This strategy shall be continued for every season that the project remains active.

Specifically for Multiflora Rose (*Rose multiflora*), and Honeysuckle species (*Lonicera spp*.), the shrubs shall be removed in their entirety in the spring or early summer (before fruit is set) in order to avoid further spread. The areas of removal shall be re-evaluated during the growing

seasons by the Engineer throughout the duration of the project to evaluate if any further grubbing is necessary.

Specifically for Tree of Heaven (*Ailanthus altissima*) and Black locust (*Robinia pseudoacacia*), the trees shall be cut in spring or summer and stumps shall be treated with undiluted triclopyr (Garlon 3A or approved equivalent). Any regrowth shall be retreated with triclopyr for the duration of the project.

Specifically for Asiatic Bittersweet (*Celastrus orbiculatus*), vines shall be cut and vine stumps treated with Habitat™ or approved equivalent. Any regrowth from stumps shall be recut and treated for the duration of the project.

The herbicide Habitat™, or approved equal, can be used in both wetlands and upland environments.

No equipment or vehicles other than that required to complete the work will be permitted in the areas designated for invasive vegetation removal.

Prune out any branches on nontreatment plants that are damaged during removal of vegetation. All corrective pruning shall conform to the National Arborists Association Pruning Standards.

Method of Measurement:

This work will be measured for payment by actual the number of square yards of vegetation sprayed and removed as directed and accepted by the Engineer.

Basis of Payment:

This work will be paid for at the contract unit price bid per square yard for "Control and Removal of Invasive Vegetation" complete in place, which price shall include all materials, containers, equipment, tools, labor, and work incidental for the removal of vegetation, off-site disposal of residue, including the loading, transport, dumping, and fees associated with legal off-site disposal shall also be included in the contract unit price for this item.

Pay Item	Pay Unit
Control and Removal of Invasive Vegetation	SY

ITEM # 0969060A - CONSTRUCTION FIELD OFFICE, SMALL

Description: Under the item included in the bid document, adequate weatherproof office quarters will be provided by the Contractor for the duration of the work, and if required, for a maximum of ninety days thereafter for the exclusive use of ConnDOT forces and others who may be engaged to augment ConnDOT forces with relation to the contract. The office quarters shall be located convenient to the work site and installed in accordance with Article 1.08.02, this office shall be separated from any office occupied by the Contractor. Ownership and liability of the office quarters shall remain with the Contractor.

Materials: Materials shall be in like new condition for the purpose intended and shall be approved by the Engineer.

Office Requirements: The Contractor shall furnish the office quarters and equipment as described below.

	Description:
150 SF	Sq. Ft. of floor space with a minimum ceiling height of 7 ft. and shall be partitioned as shown on building floor plan as provided by the Engineer.
1 EA	Minimum number of exterior entrances.
7 EA	Minimum number of parking spaces.

Office layout: The office shall have a minimum square footage as indicated in the table above, and shall be partitioned as shown on building floor plan as provided by the Engineer. The underside of the office shall be fully skirted to the ground.

Lavatory Facilities: The Contractor shall furnish lavatory and toilet facilities at a location convenient to the office quarters for the use of Department personnel and such assistants as they may engage. He shall also supply lavatory and sanitary supplies as required.

Windows and Entrances: The windows shall be of a type that will open and close conveniently, shall be sufficient in number and size to provide adequate light and ventilation, and shall be fitted with locking devices, blinds and screens. The entrances shall be secure, screened, and fitted with a lock for which four keys shall be furnished. All keys to the construction field office shall be furnished to the Department and will be kept in their possession while State personnel are using the office. Any access to the entrance ways shall meet applicable building codes and be slip resistant, with appropriate handrails.

Lighting: The Contractor shall equip the office interior with electric lighting that provides a minimum illumination level of 100 foot-candles at desk level height, and electric outlets for each desk and drafting table. The Contractor shall also provide exterior lighting that provides a minimum illumination level of 2 foot-candles throughout the parking area and for a minimum distance of 10 ft. on each side of the field office.

The Contractor shall provide the following additional equipment, facilities, and/or services at the Field Office on this project to include at least the following to the satisfaction of the Engineer:

Parking Facility: Adequate parking spaces with adequate illumination on a paved surface, with surface drainage if needed. If paved parking does not exist adjacent to the field office, the Contractor shall provide a parking area of sufficient size to accommodate the number of vehicles indicated in the table above. Construction of the parking area and driveway, if necessary, will consist of a minimum of 6 inches of processed aggregate base graded to drain. The base material will be extended to the office entrance.

Field Office Security: Physical Barrier Devices - This shall consist of physical means to prevent entry, such as: 1) All windows shall be barred or security screens installed; 2) All field office doors shall be equipped with dead bolt locks and regular day operated door locks; and 3) Other devices as directed by the Engineer to suit existing conditions.

Electric Service: The field office shall be equipped with an electric service panel to serve the electrical requirements of the field office, including: lighting, general outlets, computer outlets, calculators etc., and meet the following minimum specifications:

A. 120/240 volt, 1 phase, 3 wire.
B. Ampacity necessary to serve all equipment. Service shall be a minimum 100 amp dedicated to the construction field office.
C. The electrical panel shall include a main circuit breaker and branch circuit breakers of the size and quantity required.
D. Additional 120 volt, single phase, 20 amp, isolated ground dedicated power circuit with dual NEMA 5-20 receptacles will be installed at each computer workstation location.
E. Additional 120 volt, single phase, 20 amp, isolated ground dedicated power circuit with dual NEMA 5-20 receptacles will be installed, for use by the Telephone Company.
F. Additional 120-volt circuits and duplex outlets as required meeting National Electric Code requirements.
G. One exterior (outside) wall mounted GFI receptacle, duplex, isolated ground, 120 volt, straight blade.
H. After work is complete and prior to energizing, the State's ConnDOT electrical inspector, must be contacted at 860-594-2240. (Do Not Call Local Town Officials)
I. Prior to field office removal the ConnDOT Data Communications office must be notified to deactivate the communications equipment.

Heating, Ventilation and Air Conditioning (HVAC): The field office shall be equipped with sufficient heating, air conditioning and ventilation equipment to maintain a temperature range of 68^{o}-80^{o} Fahrenheit within the field office.

The Following Furnishings and Equipment Shall Be Provided In The Applicable Field Office Type:

Qty	Description:
1 EA	Office desks (2.5 ft x 5 ft) with drawers, locks, and matching desk chairs that have pneumatic seat height adjustment and dual wheel casters on the base.
1 EA	Office Chairs.
1 EA	Fire resistant cabinets (legal size/4 drawer), locking.

Qty	Description:
1 EA	Drafting type tables (3 ft x 6 ft) and supported by wall brackets and legs; and matching drafters stool that have pneumatic seat height adjustment, seat back and dual wheel casters on the base.
1 EA	Personal computer tables (4 ft x 2.5 ft).
1 EA	Hot and cold water dispensing unit and supply of cups and bottled water shall be supplied by the Contractor for the duration of the project.
1 EA	Electronic office type printing calculators capable of addition, subtraction, multiplication and division with memory and a supply of printing paper.
1 EA	Telephone.
1 EA	Telephone answering machine.
1 EA	Plain paper facsimile (FAX) machine capable of transmitting via telephone credit card. All supplies, paper and maintenance shall be provided by the Contractor.
1 EA	Copier/Scanner - dry, plain paper with automatic feeder and reducing capability. All supplies, paper and maintenance shall be provided by the Contractor.
1 EA	Computer - All supplies and maintenance shall be provided by the Contractor.
1 EA	Laser printer - All supplies, paper and maintenance shall be provided by the Contractor.
1 EA	Digital Camera - All supplies and maintenance shall be provided by the Contractor.
1 EA	Wastebaskets - 30 gal., including plastic waste bags.
1 EA	Wastebaskets - 5 gal., including plastic waste bags.
1 EA	Electric pencil sharpeners.
* EA	Fire extinguishers - provide and install type and *number to meet applicable State and local codes for size of office indicated, including a fire extinguisher suitable for use on a computer terminal fire.
1 EA	Vertical plan racks for 2 sets of 2 ft x 3 ft plans for each rack.
1 EA	Infrared Thermometer, including certified calibration, case, cleaning wipes.
1 EA	Concrete Curing Box as specified below under Concrete Testing Equipment.
1 EA	Concrete Air Meter as specified below under Concrete Testing Equipment.
1 EA	Concrete Slump Cone as specified below under Concrete Testing Equipment.

The furnishings and equipment required herein shall remain the property of the Contractor. Any supplies required to maintain or operate the above listed equipment or furnishings shall be provided by the Contractor for the duration of the project.

Telephone Service: This shall consist of the installation of two (2) telephone lines: one (1) line for phone/voice service and one (1) line dedicated for the facsimile machine. The Contractor shall pay all charges except for out-of-state toll calls made by State personnel.

Computer Hardware and Software:

The installation of computer hardware and software will be limited to providing internet access for desk units or a wireless card for laptops. All PC's, laptops, scanners, copiers, digital cameras and associated software necessary for the Contractor's work will be furnished and installed by the Contractor.

The Contractor will be responsible for all supplies, maintenance and repairs necessary throughout the Contract life.

Concrete Testing Equipment: If the Contract includes items that require compressive strength cylinders for concrete, in accordance with the Schedule of Minimum Testing Requirements for Sampling Materials for Test, the Contractor shall provide the following. All testing equipment will remain the property of the Contractor at the completion of the project.

A) Concrete Cylinder Curing Box – meeting the requirements of Section 6.12 of the Standard Specifications.

B) Air Meter – The air meter provided shall be in good working order and will meet the requirements of AASHTO T 152.

C) Slump Cone Mold – Slump cone, base plate, and tamping rod shall be provided in like-new condition and meet the requirements of AASHTO T119, Standard Test Method for Slump of Hydraulic-Cement Concrete.

Maintenance: During the occupancy by the Department, the Contractor shall maintain all facilities and furnishings provided under the above requirements, and shall maintain and keep the office quarters clean through the use of weekly professional cleaning to include, but not limited to, washing & waxing floors, cleaning restrooms, removal of trash, etc. Exterior areas shall be mowed and clean of debris. A trash receptacle (dumpster) with weekly pickup (trash removal) shall be provided. Snow removal, sanding and salting of all parking, walkway, and entrance ways areas shall be accomplished during a storm if on a workday during work hours, immediately after a storm and prior to the start of a workday. If snow removal, salting and sanding are not completed by the specified time, the State will provide the service and all costs incurred will be deducted from the next payment estimate.

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

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

Basis of Payment: The furnishing and maintenance of the construction field office will be paid at the listed unit price per month for the item "Construction Field Office, Small", which price shall include all material, equipment, labor, utility services and work incidental thereto.

The cost of providing the parking area, external illumination, trash removal and snow and ice removal shall be included in the monthly unit price bid for the respective item "Construction Field Office, Small".

Pay Item	Pay Unit
Construction Field Office, Small	Month

ITEM #0970006A – TRAFFICPERSON (UNIFORMED OFFICER)

9.70.01—Description: Under this item the Contractor shall provide the services of traffic control police officers for such periods as determined by the Naugatuck Police Department for the control and direction of vehicular traffic and pedestrians. Traffic persons requested solely for the Contractor's operational needs will not be approved for payment.

9.70.03—Construction Method: On a weekly basis, the Contractor shall inform the Engineer and Police Department of their scheduled operations for the following week and the number of Trafficpersons requested. The Contractor shall make arrangement with the Police Department regarding the number of Trafficpersons required.

If the Contractor changes or cancels any scheduled operations without prior notice of same as required by the Police Department, and such that Trafficperson services are no longer required, the Contractor will be responsible for payment at no cost to the City of any show-up cost for any Trafficperson not used because of the change. Exceptions, as approved by the Engineer, may be granted for adverse weather conditions and unforeseeable causes beyond the control and without the fault or negligence of the Contractor.

Prior to the start of operations on the project requiring the use of Trafficpersons, a meeting will be held with the Contractor, Police Department, and Engineer to review the Trafficperson operations, lines of responsibility, and operating guidelines which will be used on the project. In the event of an unplanned, emergency, or short term operation, the Engineer may approve the temporary use of properly clothed persons for traffic control until such time as an authorized Trafficperson may be obtained. In no case shall this temporary use exceed 8 hours for any particular operation.

Law enforcement personnel shall wear the high visibility safety garment provided by their law enforcement agency. If no high visibility safety garment is provided, the Contractor shall provide the law enforcement personnel with high visibility safety apparel.

Law Enforcement Personnel may be also be used to conduct motor vehicle enforcement operations in and around work areas as directed and approved by the Police Department. Uniformed Municipal Police Officers shall be sworn Municipal Police Officers or Uniformed Constables who perform criminal law enforcement duties from the Municipality in which the project is located. Their services will also include an official Municipal Police vehicle when requested by the Engineer.

9.70.04—Method of Measurement: Services of Trafficpersons will be measured for payment by the actual number of hours for each person rendering services approved by the Engineer. These services shall include, however, only such trafficpersons as are employed within the limits of construction, project right of way of the project or along detours authorized by the Police Department to assist the motoring public through the construction work zone. Services for continued use of a detour or bypass beyond the limitations approved by the Engineer, for

movement of construction vehicles and equipment, or at locations where traffic is unnecessarily restricted by the Contractor's method of operation, will not be measured for payment.

Trafficpersons shall not work more than twelve hours in any one 24 hour period. In case such services are required for more than twelve hours, additional Trafficpersons shall be furnished and measured for payment.

Travel time will not be measured for payment for services provided by Trafficpersons.

Mileage fees associated with Trafficperson services will not be measured for payment.

Safety garments and STOP/SLOW paddles will not be measured for payment.

9.70.05—Basis of Payment: Trafficpersons will be paid in accordance with the schedule described herein.

There will be no direct payment for safety garments or STOP/SLOW paddles. All costs associated with furnishing safety garments and STOP/SLOW paddles shall be considered included in the general cost of the item.

The sum of money shown on the Estimate and in the itemized proposal as "Estimated Cost" for this work will be considered the bid price even though payment will be made as described below. The estimated cost figure is not to be altered in any manner by the bidder. Should the bidder alter the amount shown, the altered figures will be disregarded and the original price will be used to determine the total amount for the contract. The Contractor will pay all police officer invoices directly.

The Borough will pay the Contractor its actual costs for "Trafficperson" plus an additional 5% as reimbursement for the Contractor's administrative expense in connection with the services provided.

Payment, not to exceed 80%, will be made to the Contractor based on an approved invoice for services provided. Remaining payment and the 5% administrative expense will be paid once the receipted bill or cancelled check is submitted to the Engineer.

The invoice must include a breakdown of each officer's actual hours of work and actual rate applied. Mileage fees associated with Trafficperson services are not reimbursable expenses and are not to be included in the billing invoice. The use of a municipal police vehicle authorized by the Engineer will be paid at the actual rate charged by the municipality. The invoice will be reviewed and approved by the Engineer prior to any payments. The rate charged by the municipality for use of a uniformed municipal police officer and/or a municipal police vehicle shall not be greater than the rate it normally charges others for similar services.

Pay Item	Pay Unit
Traffic Person (Uniformed Officer)	Est.

ITEM #0971001A - MAINTENANCE AND PROTECTION OF TRAFFIC

Article 9.71.01 – Description is supplemented by the following:

The Contractor shall maintain and protect traffic as follows and as limited in the Special Provision "Prosecution and Progress":

The Contractor shall maintain and protect traffic in accordance with Section 9.71 of the Standard Specifications.

(A) The Contractor shall keep all existing streets and sidewalks open to vehicular and pedestrian traffic for the full length and duration of the project and shall provide a sufficient number of travel lanes and pedestrian pass ways to accommodate traffic ordinarily using the street and sidewalks. The Contractor shall maintain and protect traffic in accordance with the current edition of "The Manual on Uniform Traffic Control Devices (MUTCD), Part VI", The portions of streets over which traffic is maintained shall be kept in such condition that traffic will be safely and adequately accommodated. Sidewalks are to be kept free of excavated materials, tool, machinery and other subjects that will impede or endanger pedestrian traffic. Suitable ingress and egress provisions shall be made for abutting owners and tenants at all times.

(B) The Contractor shall furnish erect, light and maintain such signs, barricades, barrels, flashers and warning lights as needed or directed by the Engineer, for the regulation and protection of traffic and pedestrians. Such signs, barricades, barrels, flashers, and warning lights shall be used to safely and adequately keep pedestrians, including handicapped persons, and vehicles from equipment, materials, obstacles, excavations, and newly constructed structures. Flagmen shall be provided for the regulation and protection of traffic or pedestrians, as needed or directed.

(C) The Contractor shall sweep all areas designated on the contract drawings.

(D) At no time, unless otherwise approved by the Engineer, shall the Contractor close or cause to be closed any portion of roadways beyond what is stipulated herein, or on the plans, as necessary to perform the work.

MAPLE STREET

The Contractor shall maintain and protect existing traffic operations.

Excepted therefrom will be those periods, during the allowable period, when the Contractor is actively working, at which time the Contractor shall maintain and protect two lanes of through traffic in each direction on a paved travel path not less than 24 feet in width.

Excepted therefrom will be those periods, during the allowable period, when the Contractor is actively working, at which time the Contractor will be allowed to halt traffic on Maple Street to perform necessary work with the approval of the Engineer, for a period of time not to exceed ten minutes, between 12:01 a.m. and 5:00 a.m. on Monday through Friday, except as otherwise approved by the Engineer.

ROUTE 8 SOUTHBOUND OFF-RAMP AT INTERCHANGE 29

The Contractor shall maintain and protect existing traffic operations.

Excepted therefrom will be those periods, during the allowable period, when the Contractor is actively working, at which time the Contractor shall maintain and protect one lane of through traffic on a paved travel path not less than 12 feet in width.

ROUTE 8 SOUTHBOUND ON-RAMP AT INTERCHANGE 28

The Contractor shall maintain and protect existing traffic operations.

Excepted therefrom will be those periods, during the allowable period, when the Contractor is actively working, at which time the Contractor shall maintain and protect one lane of through traffic on a paved travel path not less than 12 feet in width.

GENERAL PULASKI WALK

The Contractor shall install temporary concrete barriers across General Pulaski Walk starting from the eastern side of the existing curb cut for the Polish American Club. At no time can access to the club be interrupted for longer than ten minutes without prior coordination between the project engineer and Club owner.

ALL OTHER ROADS

The Contractor shall maintain and protect a minimum of one 11 foot wide land of traffic in each direction.

Excepted therefrom will be those periods, during the allowable period, when the Contractor is actively working, at which time the Contractor shall maintain and protect at least an 11 foot wide alternating one-way traffic operation. The length of the alternating one-way operation shall not exceed 500 feet.

COMMERCIAL AND RESIDENTIAL DRIVEWAYS

The Contractor shall maintain access to and egress from all commercial and residential driveways throughout the project limits. The Contractor will be allowed to close said driveways to perform the required work during those periods when the businesses are closed unless permission is granted from the business owner to close the driveway during business hours. If a temporary closure of a residential driveway is necessary, the Contractor shall coordinate with the owner to determine the time period of the closure.

STAGING AREA

The Contractor will not be allowed to store any material, or equipment between the street lines within the Borough limits. The Contractor shall review the proposed staging area as shown on the construction drawings and submit to the Engineer his/her approval. If the proposed area is deemed unsatisfactory or additional area is needed the contractor shall submit all proposed locations for staging area.

Article 9.17.03 – Construction Method is supplemented as follows:

SIGNING

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

Adjustments of Signing and Traffic Control Devices

The traffic control plans included herein indicate patterns, location and spacing of signs and devices under ideal conditions. Adjustments to these standard signing plans and patterns may be necessary to account for concurrent construction and may be accomplished as directed by the Engineer. If adjustments are made to the standard signing patterns, the adjustments shall always be to improve the visibility of the signing and devices and to better control traffic. Adjustments in the signing patterns installed for traffic control shall be done by the Contractor's forces at no charge to the Borough of Naugatuck.

Trafficpersons

For use of local police officers whenever traffic is impeded, please refer to Notice to Contractor – Trafficpersons

Excavations and Trenches

For maintenance and protection of vehicular and pedestrian traffic near and around project excavation and trenches, please refer to Notice to Contractor – Excavations and Trenches

Sign Materials

Please refer to Notice to Contractor – Sign Materials for provisions and standards regarding all construction and portable signs, mounting heights, sign materials, and traffic cones, drums, and barricades.

Traffic Control Plan

For information regarding submission and execution of proposed traffic control plans, please refer to Notice to Contractor – Traffic Control Plan.

Detour

For information regarding coordination, scheduling, and time allowances for project detour(s), please refer to Notice to Contractor – Detour

TRAFFIC CONTROL DURING CONSTRUCTION OPERATIONS (English Version)

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

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

Speed and volume of traffic
Duration of operation
Exposure to hazards

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

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

If a lane reduction taper is required to shift traffic, the entire length of the taper should be installed on a tangent section of roadway so that the entire taper area can be seen by the motorist.

Any existing signs that are in conflict with the traffic control patterns shall be removed, covered, or turned so that they are not readable by oncoming traffic.

When installing a traffic control pattern, a Buffer Area should be provided and this area shall be free of equipment, workers, materials and parked vehicles.

Typical traffic control plans 20 through 25 may be used for moving operations such as line striping, pot hole patching, mowing, or sweeping when it is necessary for equipment to occupy a travel lane.

Traffic control patterns will not be required when vehicles are on an emergency patrol type activity or when a short duration stop is made and the equipment can be contained within the shoulder. Flashing lights and appropriate trafficperson shall be used when required.

Although each situation must be dealt with individually, conformity with the typical traffic control plans contained herein is required. In a situation not adequately covered by the typical traffic control plans, the Contractor must contact the Engineer for assistance prior to setting up a traffic control pattern.

PLACEMENT OF SIGNS: Signs must be placed in such a position to allow motorists the opportunity to reduce their speed prior to the work area. Signs shall be installed on the same side

of the roadway as the work area. On multi-lane divided highways, advance warning signs may be installed on both sides of the highway. On directional roadways (on-ramps, off-ramps, one-way roads), where the sight distance to signs is restricted, these signs should be installed on both sides of the roadway.

Allowable Adjustment of Signs and Devices Shown on the Traffic Control Plans

The traffic control plans contained herein show the location and spacing of signs and devices under ideal conditions. Signs and devices should be installed as shown on these plans whenever possible.

The proper application of the traffic control plans and installation of traffic control devices depends on actual field conditions.

Adjustments to the traffic control plans shall be made only at the direction of the Engineer to improve the visibility of the signs and devices and to better control traffic operations. Adjustments to the traffic control plans shall be based on safety of work forces and motorists, abutting property requirements, driveways, side roads, and the vertical and horizontal curvature of the roadway.

The Engineer may require that the traffic control pattern be located significantly in advance of the work area to provide better sight line to the signing and safer traffic operations through the work zone.

Table I indicates the minimum taper length required for a lane closure based on the posted speed limit of the roadway. These taper lengths shall only be used when the recommended taper lengths shown on the traffic control plans cannot be achieved.

TABLE I – MINIMUM TAPER LENGTHS

POSTED SPEED LIMIT MILES PER HOUR	MINIMUM TAPER LENGTH IN FEET FOR A SINGLE LANE CLOSURE
30 OR LESS	180
35	250
40	320
45	540
50	600
55	660
65	780

SECTION 1. WORK ZONE SAFETY MEETINGS

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

1.b) A Work Zone Safety Meeting Agenda, (see Section 9), shall be developed and used at the meeting to outline the anticipated traffic control issues during the construction of this project. Any issues that can't be resolved at these meetings will be brought to the attention of the District Engineer and the Office of Construction.

SECTION 2. INSTALLING AND REMOVING TRAFFIC CONTROL PATTERNS

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

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

2.c) Stopping traffic may be allowed:

- As per the contract for such activities as blasting, steel erection, etc.
- During paving, milling operations, etc. where, in the middle of the operation, it is necessary to flip the pattern to complete the operation on the other half of the roadway and traffic should not travel across the longitudinal joint or difference in roadway elevation.
- To move slow moving equipment across live traffic lanes into the work area.

2.d) Under certain situations when the safety of the traveling public and/or that of the workers may be compromised due to conditions such as traffic volume, speed, roadside obstructions, or sight line deficiencies, as determined by the Engineer and/or State Police, traffic may be briefly impeded while installing and/or removing the advanced warning signs and the first ten traffic cones/drums only. Appropriate measures shall be taken to safely slow traffic. If required, State Police may use traffic slowing techniques, including the use of Truck Mounted Impact Attenuators (TMAs) as appropriate, for a minimum of one mile in advance of the pattern starting point. Once the advanced warning signs and the first ten traffic cones/drums are installed/removed, the two TMAs and sign crew should continue to install/remove the pattern as described in Section 4c and traffic shall be allowed to resume their normal travel.

2.e) The Contractor must adhere to using the proper signs, placing the signs correctly, and ensuring the proper spacing of signs.

2.f) Additional devices are required on entrance ramps, exit ramps, and intersecting roads to warn and/or move traffic into the proper travelpath prior to merging/exiting with/from the main line traffic. This shall be completed before installing the mainline pattern past the ramp or intersecting roadway.

2.g) Prior to installing a pattern, any conflicting existing signs shall be covered with an opaque material. Once the pattern is removed, the existing signs shall be uncovered.

2.h) On limited access roadways, workers are prohibited from crossing the travel lanes to install and remove signs or other devices on the opposite side of the roadway. Any signs or devices on the opposite side of the roadway shall be installed and removed separately.

SECTION 3. USE OF HIGH MOUNTED INTERNALLY ILLUMINATED FLASHING ARROW

3.a) On limited access roadways, one Flashing Arrow shall be used for each lane that is closed. The Flashing Arrow shall be installed concurrently with the installation of the traffic control pattern and its placement shall be as shown on the traffic control plan. For multiple lane closures, one Flashing Arrow is required for each lane closed. If conditions warrant, additional Flashing Arrows should be employed (i.e.: curves, major ramps, etc.).

3.b) On non-limited access roadways, the use of a Flashing Arrow for lane closures is optional. The roadway geometry, sight line distance, and traffic volume should be considered in the decision to use the Flashing Arrow.

3.c) The Flashing Arrow shall not be used on two lane, two-way roadways for temporary alternating one-way traffic operations.

3.d) The Flashing Arrow board display shall be in the "arrow" mode for lane closure tapers and in the "caution" mode (four corners) for shoulder work, blocking the shoulder, or roadside work near the shoulder. The Flashing Arrow shall be in the "caution" mode when it is positioned in the closed lane.

3.e) The Flashing Arrow shall not be used on a multi-lane roadway to laterally shift all lanes of traffic, because unnecessary lane changing may result.

3.f) If the required number of Flashing Arrows is not available, the traffic control pattern shall not be installed.

SECTION 4. USE OF TRUCK MOUNTED IMPACT ATTENUATOR VEHICLES (TMAs)

4.a) For lane closures on limited access roadways, a minimum of two TMAs shall be used to install and remove traffic control patterns. If two TMAs are not available, the pattern shall not be installed.

4.b) On non-limited access roadways, the use of TMAs to install and remove patterns closing a lane(s) is optional. The roadway geometry, sight line distance, and traffic volume should be considered in the decision to utilize the TMAs.

4.c) Generally, to establish the advance and transition signing, one TMA shall be placed on the shoulder and the second TMA shall be approximately 1,000 feet ahead blocking the lane. The flashing arrow board mounted on the TMA should be in the "flashing arrow"

mode when taking the lane. The sign truck and workers should be immediately ahead of the second TMA. In no case shall the TMA be used as the sign truck or a work truck. Once the transition is in place, both TMAs shall travel in the closed lane until all Changeable Message Signs, signs, Flashing Arrows, and cones/drums are installed. The flashing arrow board mounted on the TMA should be in the "caution" mode when traveling in the closed lane.

4.d) A TMA shall be placed prior to the first work area in the pattern. If there are multiple work areas within the same pattern, then additional TMAs may be positioned at each additional work area as needed. The flashing arrow board mounted on the TMA should be in the "caution" mode when in the closed lane.

4.e) TMAs shall be positioned a sufficient distance prior to the workers or equipment being protected to allow for appropriate vehicle roll-ahead in the event that the TMA is hit, but not so far that an errant vehicle could travel around the TMA and into the work area. For additional placement and use details, refer to the specification entitled "Type 'D' Portable Impact Attenuation System". Some operations, such as paving and concrete repairs, do not allow for placement of the TMA(s) within the specified distances. In these situations, the TMA(s) should be placed at the beginning of the work area and shall be advanced as the paving or concrete operations proceed.

4.f) TMAs should be paid in accordance with how the unit is utilized. When it is used as a TMA and is in the proper location as specified, then it should be paid at the specified hourly rate for "Type 'D' Portable Impact Attenuation System". When the TMA is used as a Flashing Arrow, it should be paid at the daily rate for "High Mounted Internally Illuminated Flashing Arrow". If a TMA is used to install and remove a pattern and then is used as a Flashing Arrow, the unit should be paid as a "Type 'D' Portable Impact Attenuation System" for the hours used to install and remove the pattern, typically 2 hours (1 hour to install and 1 hour to remove), and is also paid for the day as a "High Mounted Internally Illuminated Flashing Arrow".

4.g) If the required number of TMAs is not available, the pattern shall not be installed.

SECTION 5. USE OF STATE POLICE OFFICERS

5.a) On limited access highways, the Engineer may determine that State Police Officers will be utilized for regional work zone traffic safety and enforcement operations in addition to project-related work zone assignments. State Police Officers shall be uniformed off-duty sworn Connecticut State Police Officers. Their services will also include the use of official State Police vehicles and associated equipment. State Police Officers will be used on all limited access highways. State Police Officers will not be used on non-limited access highways unless specifically under their jurisdiction or authorized in writing by the Engineer. State Police Officers with official State Police vehicles will be used at such locations and for such periods as the Engineer deems necessary to control traffic operations and promote increased safety to motorists through the construction sites. State Police may be utilized only on limited access highways and secondary roadways under their primary jurisdiction.

5.b) On a weekly basis, the Contractor shall submit to the Engineer the state police request form as an indication of their scheduled operations for the following week. This form shall be submitted no later than Wednesday morning of the week prior to the scheduled operations. The Engineer shall review this schedule and approve the type and number of Officers required by signing off under the "Completed by DOT's Authorized Representative" line on Department of Public Safety Form DPS-0691-C. Once the Engineer has approved the number of Officers requested the Engineer will fax the order to the Department of Public Safety's Overtime Office.

5.c) Prior to the start of operations, a meeting will be held with the Contractor, Trooper in charge and Engineer to review the Trafficperson operations, lines of responsibility, and operating guidelines which will be used for the scheduled work.

5.d) At least one Officer should be used per critical sign pattern. Shoulder closures and right lane closures can generally be implemented without the presence of a State Police Officer. Likewise in areas with moderate traffic and wide, unobstructed medians, left lane closures can be implemented without State Police presence. Certain situations may require State Police presence, if one is available, even though the general guidelines above indicate otherwise. Examples of this include: nighttime lane closures; left lane closures with minimal width for setting up advance signs and staging; lane and shoulder closures on turning roadways/ramps or mainline where sight distance is minimal; and closures where extensive turning movements or traffic congestion regularly occur.

5.e) Once the pattern is in place, the State Police Officer should be positioned in a non-hazardous location at the beginning of the pattern or at one of the work areas not protected by a TMA. If traffic backs up beyond the beginning of the pattern, then the State Police Officer should be repositioned prior to the backup to give warning to the oncoming motorists. Where State Police Officer and TMA are in close proximity to each other, the TMA should be placed to protect the State Police Officer's vehicle from oncoming traffic.

5.f) Other functions of the State Police Officer(s) shall include:

- *Assisting entering/exiting construction vehicles within the work area.
- *Enhancing worker visibility/safety for workers in close proximity to the open travel lane(s).
- Speed control of traffic within the work area.
- Enforcement of speed and other motor vehicle laws within the work area.

Typically, the State Police Officer should be out of the vehicle for the functions marked with an asterisk (*).

5.g) State Police Officers assigned to a work site are to only take direction from the Engineer.

5.h) There will be no separate payment to the Contractor for State Police Services. The direct cost of such services will be paid by the Department. Indirect costs associated with scheduling and coordinating State Police shall be included under the Item – Maintenance and Protection of Traffic.

SECTION 6. USE OF (REMOTE CONTROL) CHANGEABLE MESSAGE SIGNS

6.a) For lane closures on limited access roadways, one Changeable Message Sign shall be used in advance of the traffic control pattern. Prior to installing the pattern, the Changeable Message Sign shall be installed and in operation, displaying the appropriate lane closure information (i.e.: Left Lane Closed - Merge Right). The Changeable Message Sign shall be positioned ½ - 1 mile ahead of the lane closure taper. If the nearest Exit ramp is greater than the specified ½ - 1 mile distance, then an additional Changeable Message Sign shall be positioned a sufficient distance ahead of the Exit ramp to alert motorists of the lane closure and provide them an opportunity to take the exit.

6.b) On non-limited access roadways, the use of Changeable Message Signs for lane closures is optional. The roadway geometry, sight line distance, and traffic volume should be considered in the decision to use the Changeable Message Sign.

6.c) The advance Changeable Message Sign is typically placed off the right shoulder, 5 feet from the edge of pavement. In areas where the Changeable Message Sign cannot be placed beyond the edge of pavement, it may be placed on the paved shoulder with a minimum of five (5) traffic drums placed in a taper in front of it to delineate its position. The advance Changeable Message Sign shall be adequately protected if it is used for a continuous duration of 36 hours or more.

6.d) When the Changeable Message Signs are no longer required, they should be removed from the clear zone and have the display screen cleared and turned 90° away from the roadway.

6.e) The Changeable Message Sign generally should not be used for generic messages (ex: Road Work Ahead, Bump Ahead, Gravel Road, etc.).

6.f) The Changeable Message Sign should be used for specific situations that need to command the motorist's attention which cannot be conveyed with standard construction signs (Examples include: Exit 34 Closed Sat/Sun - Use Exit 35, All Lanes Closed - Use Shoulder, Workers on Road - Slow Down).

6.g) Messages that need to be displayed for long periods of time, such as during stage construction, should be displayed with construction signs. For special signs, please coordinate with the Office of Construction and the Division of Traffic Engineering for the proper layout/dimensions required.

6.h) Section 10 contains the messages that are allowed on the Changeable Message Sign. For any other message(s), approval must be received from the Office of Construction prior to their use. No more than two (2) displays shall be used within any message cycle.

6.i) If the required number of Changeable Message Signs is not available, the pattern shall not be installed.

SECTION 7. USE OF (REMOTE CONTROL) CHANGEABLE MESSAGE SIGNS WITH RADAR

7.a) (Remote Control) Changeable Message Signs with Radar shall be used when specified, or as directed by the Engineer.

7.b) The typical placement of a (Remote Control) Changeable Message Sign with Radar is in the work zone portion of the traffic control pattern.

7.c) The typical usage of the (Remote Control) Changeable Message Sign with Radar is to display a message when a preset speed is exceeded. The sign will blank when no vehicles are present.

7.d) The preset speed for activating the message should be set 5-10 MPH above the posted, or desired, speed.

7.e) Section 12 contains the messages that are allowed on the (Remote Controlled) Changeable Message Sign with Radar. For any other message(s), approval must be received from the Office of Construction prior to their use. No more than two (2) displays shall be used within any message cycle.

SECTION 8. USE OF TRAFFIC DRUMS AND TRAFFIC CONES

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

8.b) Traffic drums shall be used in place of traffic cones in traffic control patterns that are in effect for more than a 72-hour duration.

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

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

SECTION 9. GENERAL

9.a) If the required minimum number of signs and equipment (i.e. one High Mounted Internally Illuminated Flashing Arrow for each lane closed, two TMAs, Changeable Message Sign, etc.) are not available, the traffic control pattern shall not be installed**.**

9.b) The Contractor shall have back-up equipment (TMAs, High Mounted Internally Illuminated Flashing Arrow, Changeable Message Sign, construction signs, cones/drums,

etc.) available at all times in case of mechanical failures, etc. The only exception to this is in the case of sudden equipment breakdowns in which the pattern may be installed but the Contractor must provide replacement equipment within 24 hours.

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

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

SECTION 10. WORK ZONE SAFETY MEETING AGENDA

1) Review Project scope of work and time.
2) Review Section 1.08, Prosecution and Progress of the Special Provisions.
3) Review Section 9.70, Trafficperson of the Specifications.
4) Review Section 9.71, Maintenance and Protection of Traffic of the Special Provisions, including "Work Zone Safety Procedures".
5) Review Contractor's schedule and method of operations.
6) Review areas of special concern: ramps, turning roadways, medians, lane drops, etc.
7) Open discussion of work zone questions and issues.
8) Discussion of review and approval process for changes in contract requirements as they relate to work zone areas.

SECTION 11. WORK ZONE SAFETY PROCEDURES - ALLOWABLE MESSAGES FOR CHANGEABLE MESSAGE SIGNS

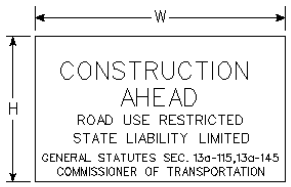
Message No.	Frame 1	Frame 2	Message No.	Frame 1	Frame 2
1	LEFT LANE CLOSED	MERGE RIGHT	9	LANES CLOSED AHEAD	REDUCE SPEED
2	2 LEFT LANES CLOSED	MERGE RIGHT	10	LANES CLOSED AHEAD	USE CAUTION
3	LEFT LANE CLOSED	REDUCE SPEED	11	WORKERS ON ROAD	REDUCE SPEED

4	2 LEFT LANES CLOSED	REDUCE SPEED	12	WORKERS ON ROAD	SLOW DOWN
5	RIGHT LANE CLOSED	MERGE LEFT	13	EXIT XX CLOSED	USE EXIT YY
6	2 RIGHT LANES CLOSED	MERGE LEFT	14	EXIT XX CLOSED USE YY	FOLLOW DETOUR
7	RIGHT LANE CLOSED	REDUCE SPEED	15	2 LANES SHIFT AHEAD	USE CAUTION
8	2 RIGHT LANES CLOSED	REDUCE SPEED	16	3 LANES SHIFT AHEAD	USE CAUTION

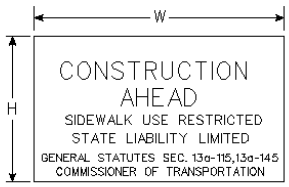
SECTION 12. WORK ZONE SAFETY PROCEDURES - ALLOWABLE MESSAGES FOR CHANGEABLE MESSAGE SIGN WITH RADAR

Message No.	Frame 1	Frame 2	Message No.	Frame 1	Frame 2
1	TOO FAST	SLOW DOWN	4		
2	TOO FAST SLOW DOWN		5		
3	YOU'RE SPEEDING	FINES DOUBLE	6		

SERIES 16 SIGNS



		W	H
16-E	80-1605	84"	60"
16-H	80-1608	60"	42"
16-M	80-1613	30"	24"



		W	H
16-S	80-1619	48"	30"

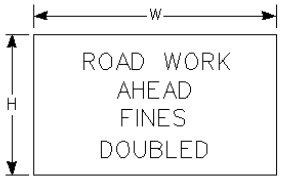
THE 16-S SIGN SHALL BE USED ON ALL PROJECTS THAT REQUIRE SIDEWALK RECONSTRUCTION OR RESTRICT PEDESTRIAN TRAVEL ON AN EXISTING SIDEWALK.

SERIES 16 SIGNS SHALL BE INSTALLED IN ADVANCE OF THE TRAFFIC CONTROL PATTERNS TO ALLOW MOTORISTS THE OPPORTUNITY TO AVOID A WORK ZONE. SERIES 16 SIGNS SHALL BE INSTALLED ON ANY MAJOR INTERSECTING ROADWAYS THAT APPROACH THE WORK ZONE. ON LIMITED- ACCESS HIGHWAYS, THESE SIGNS SHALL BE LOCATED IN ADVANCE OF THE NEAREST UPSTREAM EXIT RAMP AND ON ANY ENTRANCE RAMPS PRIOR TO OR WITHIN THE WORK ZONE LIMITS.

THE LOCATION OF SERIES 16 SIGNS CAN BE FOUND ELSEWHERE IN THE PLANS OR INSTALLED AS DIRECTED BY THE ENGINEER.
SIGNS 16-E AND 16-H SHALL BE POST MOUNTED.
SIGN 16-E SHALL BE USED ON ALL EXPRESSWAYS.
SIGN 16-H SHALL BE USED ON ALL RAMPS, OTHER STATE ROADWAYS, AND MAJOR TOWN/CITY ROADWAYS.
SIGN 16-M SHALL BE USED ON OTHER TOWN ROADWAYS.

REGULATORY SIGN "ROAD WORK AHEAD, FINES DOUBLED"

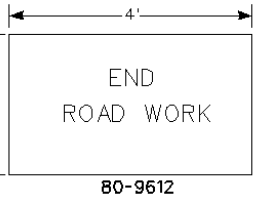
THE REGULATORY SIGN "ROAD WORK AHEAD, FINES DOUBLED" SHALL BE INSTALLED FOR ALL WORK ZONES THAT OCCUR ON ANY STATE HIGHWAY IN CONNECTICUT WHEN THERE ARE WORKERS ON THE HIGHWAY OR WHEN THERE IS OTHER THAN EXISTING TRAFFIC OPERATIONS.
THE "ROAD WORK AHEAD, FINES DOUBLED" REGULATORY SIGNS SHALL NOT BE INSTALLED ON TOWN ROADS.
THE "ROAD WORK AHEAD FINES DOUBLED" REGULATORY SIGN SHALL BE PLACED AFTER THE SERIES 16 SIGN AND IN ADVANCE OF THE "ROAD WORK AHEAD" SIGN.



	W	H
31-1906	48"	42"

"END ROAD WORK" SIGN

THE LAST SIGN IN THE PATTERN MUST BE THE "END ROAD WORK" SIGN.



80-9612

REV'D 1-02

CONNECTICUT
DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & HIGHWAY OPERATIONS
DIVISION OF TRAFFIC ENGINEERING

CONSTRUCTION
TRAFFIC CONTROL PLAN

REQUIRED SIGNS

APPROVED J.Carey PRINCIPAL ENGINEER DATE 1-02

NOTES FOR TRAFFIC CONTROL PLANS

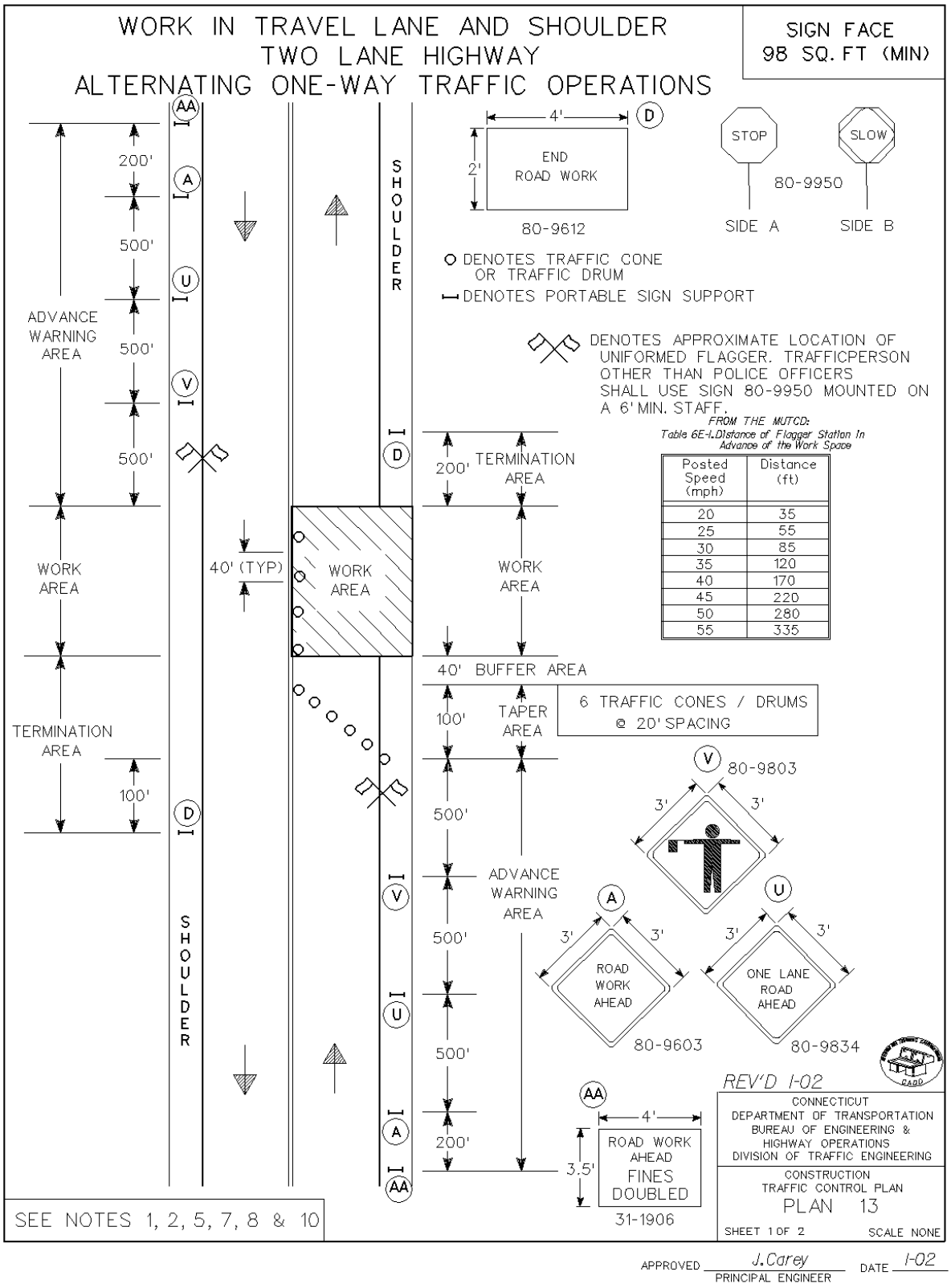
1. IF A TRAFFIC STOPPAGE OCCURS IN ADVANCE OF SIGN (A), THEN AN ADDITIONAL SIGN (A) SHALL BE INSTALLED IN ADVANCE OF THE STOPPAGE.
2. SIGNS (AA), (A) AND (D) SHOULD BE OMITTED WHEN THESE SIGNS HAVE ALREADY BEEN INSTALLED TO DESIGNATE A LARGER WORK ZONE THAN THE WORK ZONE THAT IS ENCOMPASSED ON THIS PLAN.
3. SEE TABLE #1 FOR ADJUSTMENT OF TAPERS IF NECESSARY.
4. A CHANGEABLE MESSAGE SIGN MAY BE UTILIZED ONE HALF TO ONE MILE IN ADVANCE OF THE LANE CLOSURE TAPER.
5. IF THIS PLAN REMAINS IN CONTINUOUS OPERATION FOR MORE THAN 72 HOURS, THEN TRAFFIC DRUMS SHALL BE USED IN PLACE OF TRAFFIC CONES.
6. ANY LEGAL SPEED LIMIT SIGNS WITHIN THE LIMITS OF A ROADWAY / LANE CLOSURE AREA WILL BE COVERED WITH AN OPAQUE MATERIAL WHILE THE CLOSURE IS IN EFFECT AND UNCOVERED WHEN THE ROADWAY / LANE CLOSURE IS REOPENED TO ALL LANES OF TRAFFIC.
7. IF THIS PLAN REMAINS IN CONTINUOUS OPERATION FOR MORE THAN 36 HOURS, THEN THE EXISTING CONFLICTING PAVEMENT MARKINGS SHALL BE ERADICATED OR COVERED AND TEMPORARY PAVEMENT MARKINGS THAT DEPICT THE PROPER TRAVELPATHS SHALL BE INSTALLED.
8. DISTANCES BETWEEN SIGNS IN THE ADVANCE WARNING AREA MAY BE REDUCED TO 200' ON LOW SPEED URBAN ROADS (SPEED LIMIT < 40 MPH).
9. FOR LANE CLOSURES ONE (1) MILE OR LONGER, A "REDUCE SPEED TO 45 MPH" SIGN SHALL BE PLACED AT THE ONE MILE POINT AND AT EACH MILE THEREAFTER.
10. IF THIS PLAN IS TO REMAIN IN OPERATION DURING THE HOURS OF DARKNESS, INSTALL BARRICADE WARNING LIGHTS - HIGH INTENSITY ON ALL POST-MOUNTED DIAMOND SIGNS IN THE ADVANCE WARNING AREA.
11. A CHANGEABLE MESSAGE SIGN SHALL BE INSTALLED ONE HALF TO ONE MILE IN ADVANCE OF THE LANE CLOSURE TAPER.

REV'D 1-02

CONNECTICUT
DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING &
HIGHWAY OPERATIONS
DIVISION OF TRAFFIC ENGINEERING

CONSTRUCTION
TRAFFIC CONTROL PLAN
NOTES

NOTES.DGN


WORK IN TRAVEL LANE AND SHOULDER
TWO LANE HIGHWAY
ALTERNATING ONE-WAY TRAFFIC OPERATIONS
SIGN FACE
98 SQ. FT (MIN)
200'
500'
500'
500'
ADVANCE WARNING AREA
WORK AREA
TERMINATION AREA
100'
40' (TYP)
SHOULDER
SHOULDER
WORK AREA
4'
2'
END ROAD WORK
80-9612
STOP
SLOW
80-9950
SIDE A
SIDE B
DENOTES TRAFFIC CONE OR TRAFFIC DRUM
DENOTES PORTABLE SIGN SUPPORT
DENOTES APPROXIMATE LOCATION OF UNIFORMED FLAGGER. TRAFFICPERSON OTHER THAN POLICE OFFICERS SHALL USE SIGN 80-9950 MOUNTED ON A 6' MIN. STAFF.
FROM THE MUTCD:
Table 6E-1.Distance of Flagger Station In Advance of the Work Space
Posted Speed (mph) | Distance (ft)
20 | 35
25 | 55
30 | 85
35 | 120
40 | 170
45 | 220
50 | 280
55 | 335
200'
TERMINATION AREA
WORK AREA
40' BUFFER AREA
100'
TAPER AREA
6 TRAFFIC CONES / DRUMS @ 20' SPACING
500'
ADVANCE WARNING AREA
500'
500'
200'
80-9803
3'
3'
ROAD WORK AHEAD
80-9603
ONE LANE ROAD AHEAD
80-9834
4'
3.5'
ROAD WORK AHEAD
FINES DOUBLED
31-1906
SEE NOTES 1, 2, 5, 7, 8 & 10
REV'D 1-02
CONNECTICUT
DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & HIGHWAY OPERATIONS
DIVISION OF TRAFFIC ENGINEERING
CONSTRUCTION
TRAFFIC CONTROL PLAN
PLAN 13
SHEET 1 OF 2
SCALE NONE
APPROVED J. Carey
PRINCIPAL ENGINEER
DATE 1-02

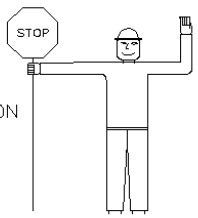
WORK IN TRAVEL LANE AND SHOULDER
TWO LANE HIGHWAY
ALTERNATING ONE-WAY TRAFFIC OPERATIONS

HAND SIGNAL METHODS TO BE USED BY UNIFORMED FLAGGERS

THE FOLLOWING METHODS FROM SECTION 6E.04 FLAGGER PROCEDURES IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" SHALL BE USED BY UNIFORMED FLAGGERS WHEN DIRECTING TRAFFIC THROUGH A WORK AREA. THE STOP/SLOW SIGN PADDLE (SIGN NO. 80-9950) SHOWN ON THE TYPICAL DETAIL SHEET ENTITLED "SIGNS FOR CONSTRUCTION AND PERMIT OPERATIONS" SHALL BE USED.

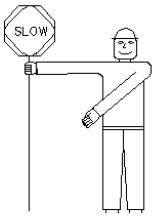
A. TO STOP TRAFFIC

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



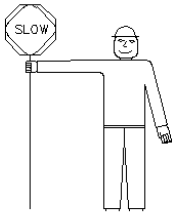
B. TO DIRECT TRAFFIC TO PROCEED

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



C. TO ALERT OR SLOW TRAFFIC

TO ALERT OR SLOW TRAFFIC, THE FLAGGER SHALL FACE ROAD USERS WITH THE SLOW PADDLE FACE AIMED TOWARD ROAD USERS IN A STATIONARY POSITION WITH THE ARM EXTENDED HORIZONTALLY AWAY FROM THE BODY. TO FURTHER ALERT OR SLOW TRAFFIC, THE FLAGGER HOLDING THE SLOW PADDLE FACE TOWARD ROAD USERS MAY MOTION UP AND DOWN WITH THE FREE HAND, PALM DOWN.



REV'D 1-02

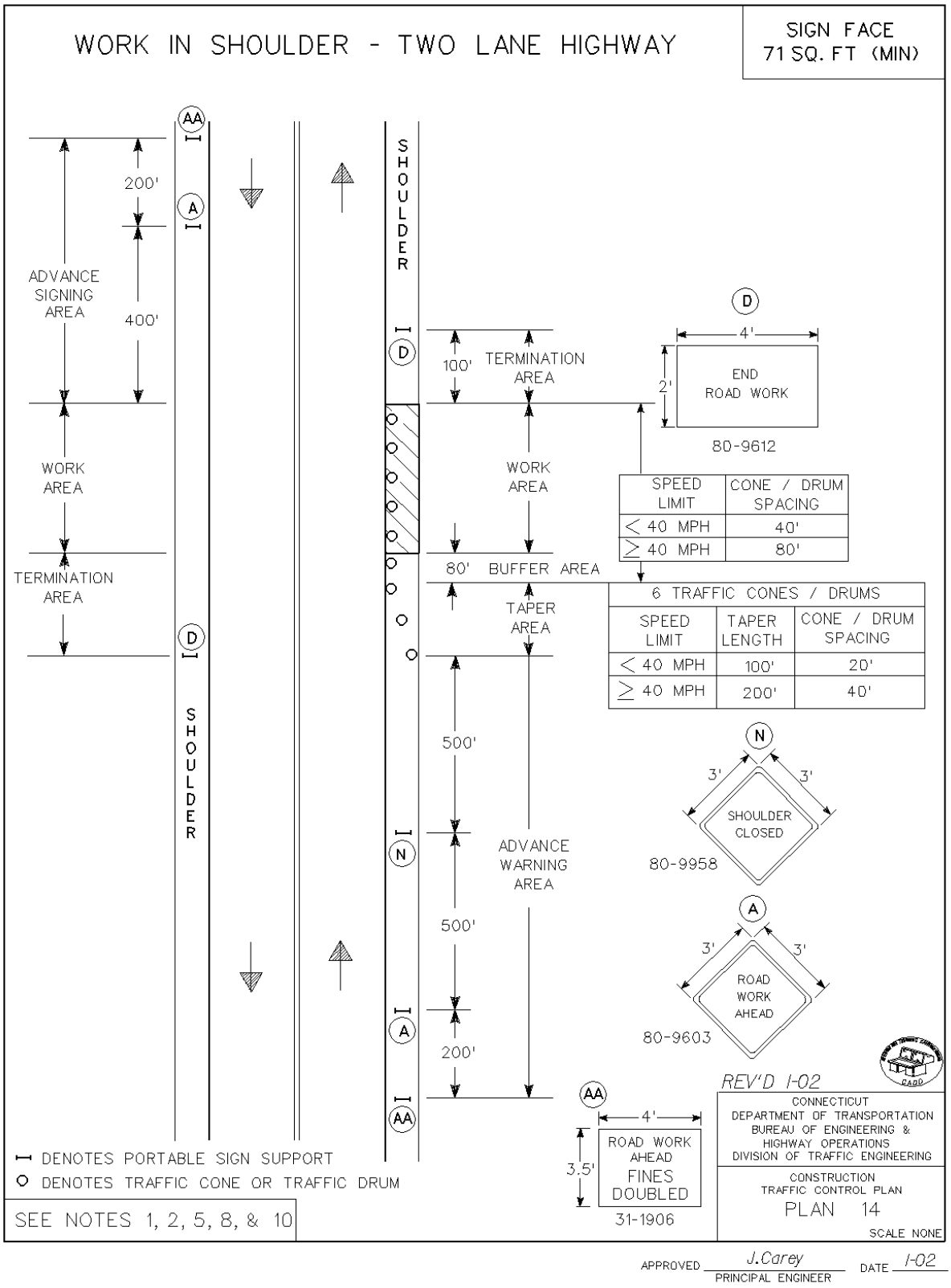
CONNECTICUT
DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & HIGHWAY OPERATIONS
DIVISION OF TRAFFIC ENGINEERING

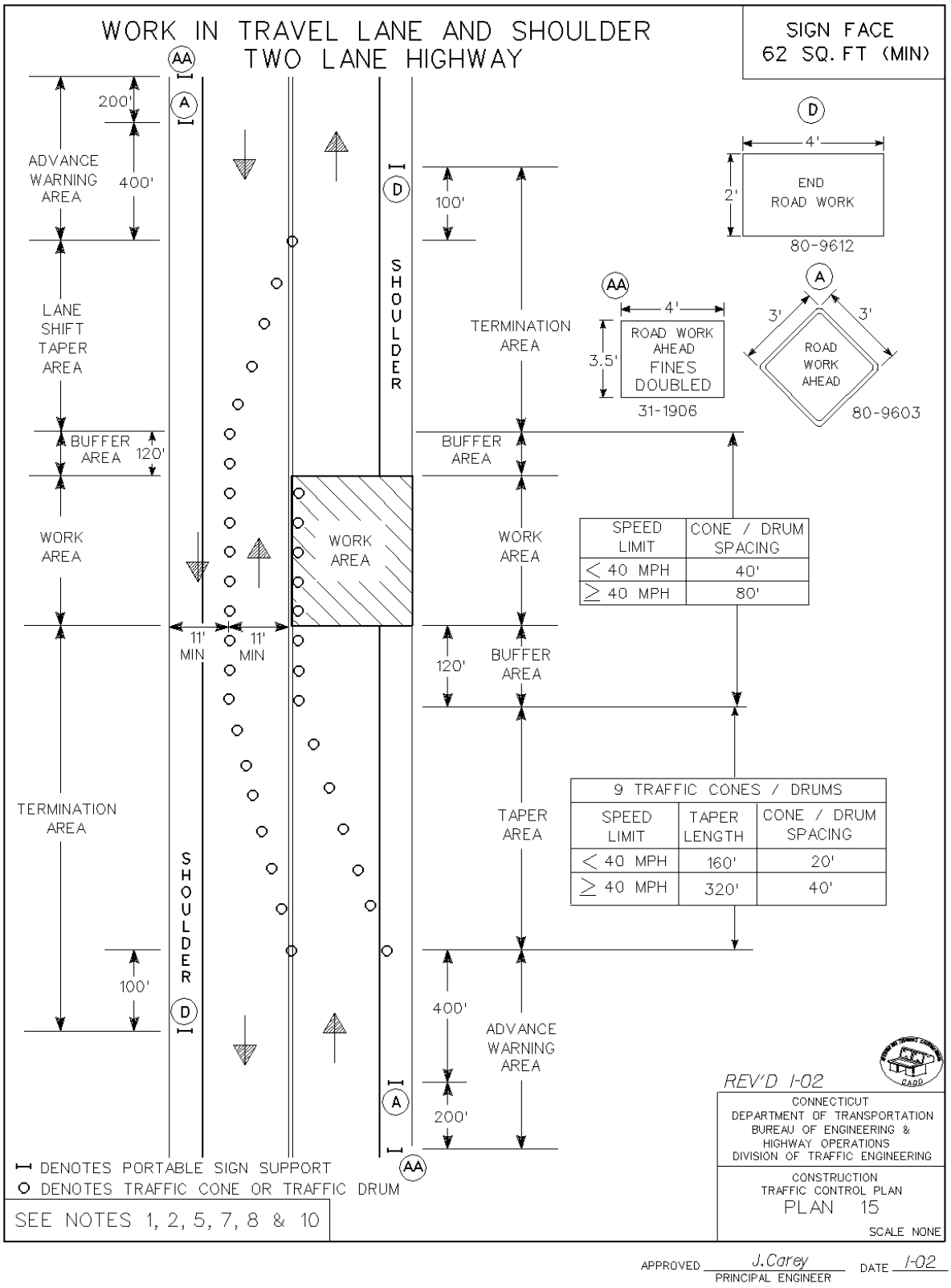
CONSTRUCTION
TRAFFIC CONTROL PLAN
PLAN 13

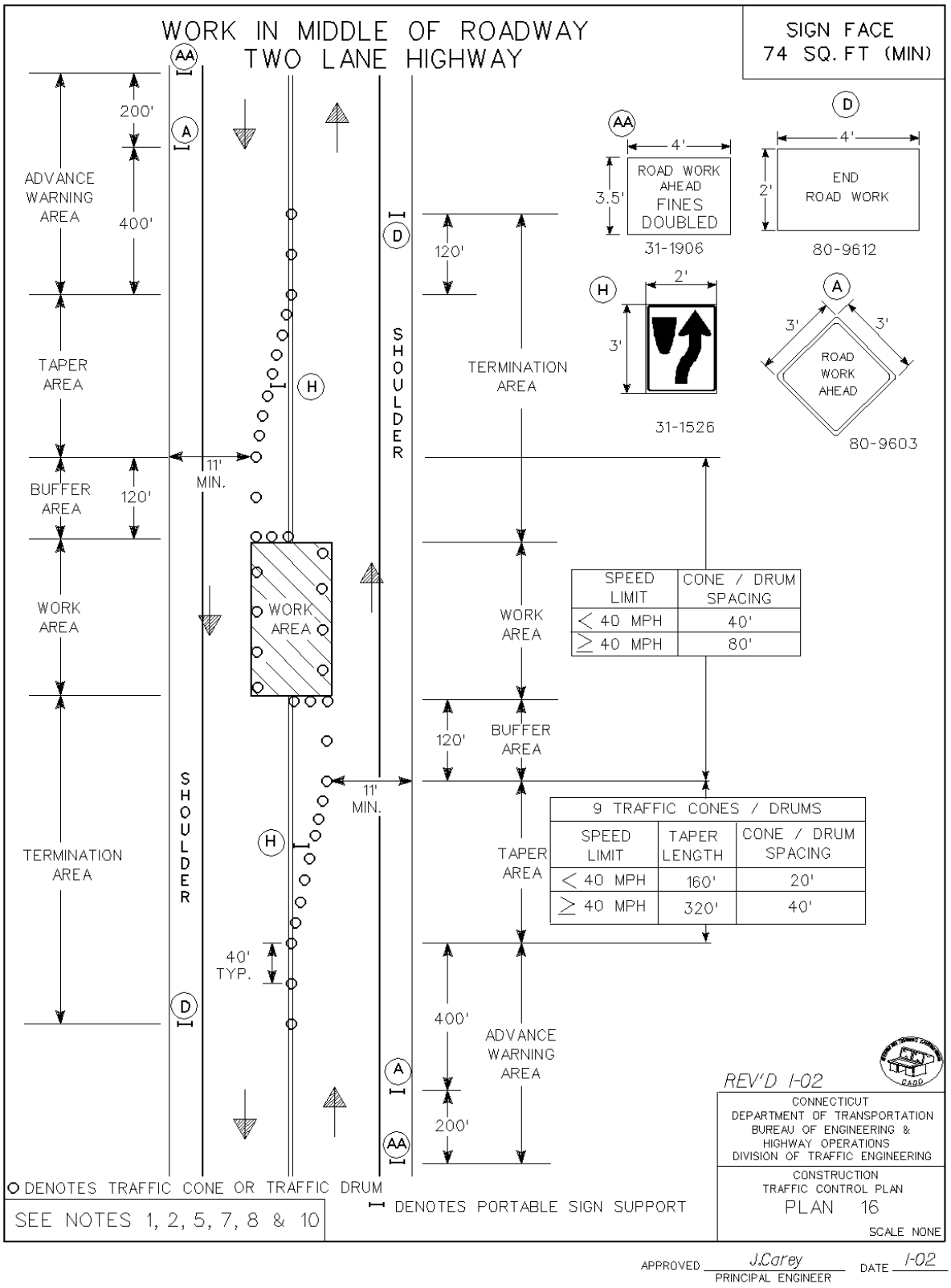
SHEET 2 OF 2 SCALE NONE

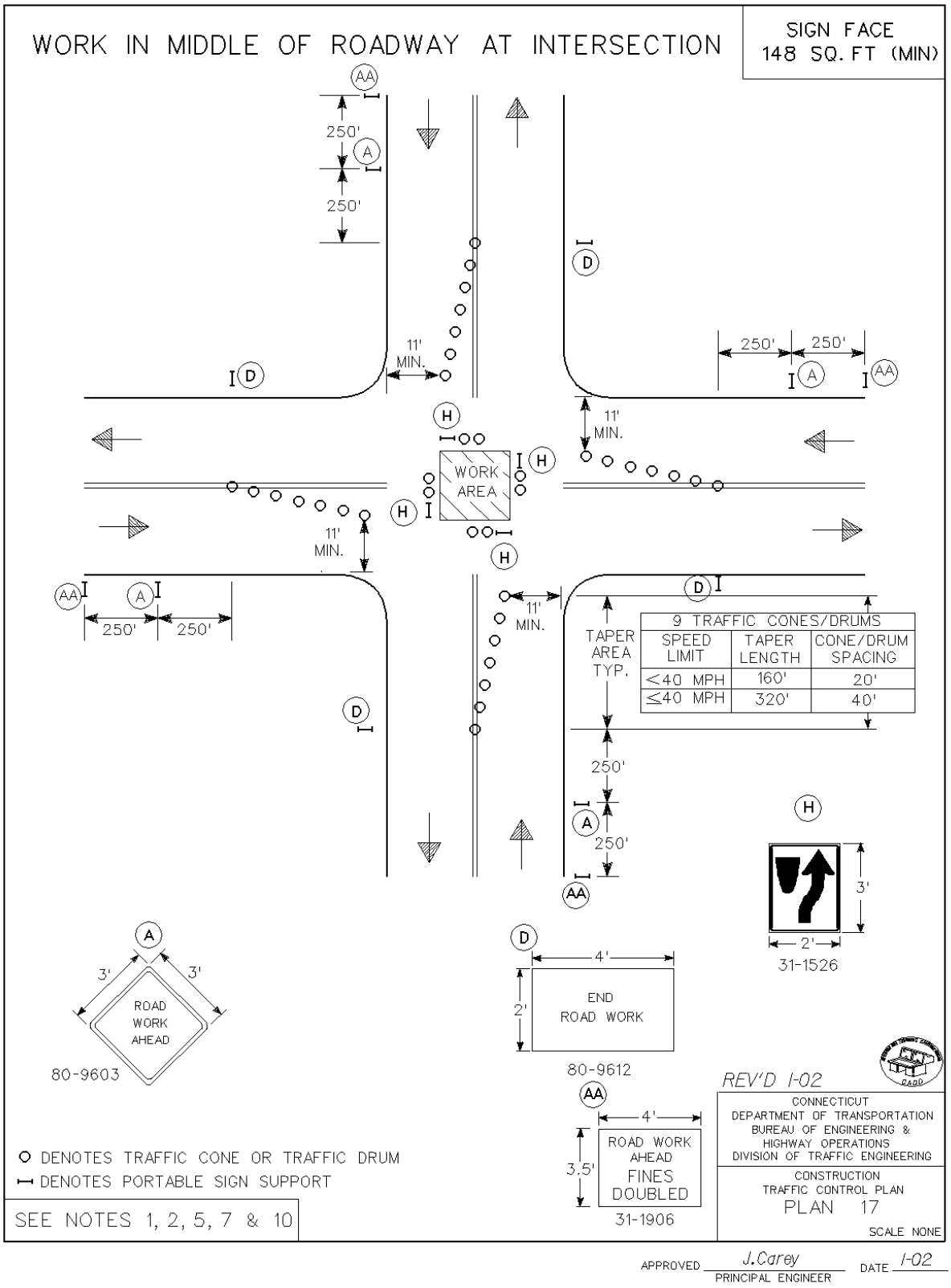
SEE NOTES 1, 2, 5, 7, 8 & 10

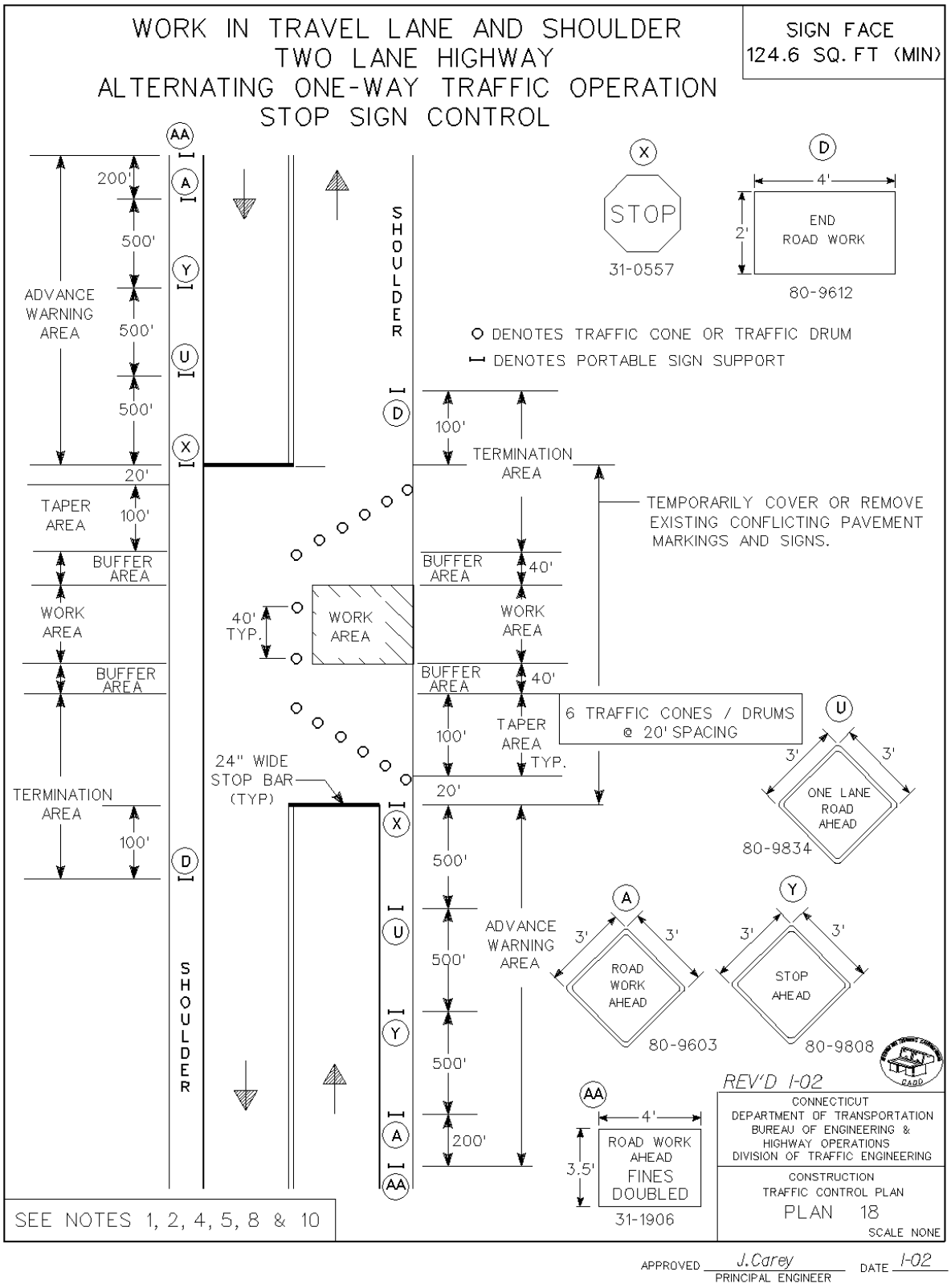
APPROVED J.Carey PRINCIPAL ENGINEER DATE 1-02


WORK IN SHOULDER - TWO LANE HIGHWAY
SIGN FACE
71 SQ. FT (MIN)
AA
A
D
N
200'
400'
ADVANCE SIGNING AREA
WORK AREA
TERMINATION AREA
SHOULDER
100'
TERMINATION AREA
WORK AREA
80' BUFFER AREA
TAPER AREA
500'
500'
200'
ADVANCE WARNING AREA
4'
2'
END ROAD WORK
80-9612
SPEED LIMIT
CONE / DRUM SPACING
< 40 MPH
40'
≥ 40 MPH
80'
6 TRAFFIC CONES / DRUMS
SPEED LIMIT
TAPER LENGTH
CONE / DRUM SPACING
< 40 MPH
100'
20'
≥ 40 MPH
200'
40'
3'
3'
SHOULDER CLOSED
80-9958
ROAD WORK AHEAD
80-9603
3.5'
ROAD WORK AHEAD
FINES DOUBLED
31-1906
I DENOTES PORTABLE SIGN SUPPORT
O DENOTES TRAFFIC CONE OR TRAFFIC DRUM
SEE NOTES 1, 2, 5, 8, & 10
REV'D 1-02
CONNECTICUT
DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & HIGHWAY OPERATIONS
DIVISION OF TRAFFIC ENGINEERING
CONSTRUCTION
TRAFFIC CONTROL PLAN
PLAN 14
SCALE NONE
APPROVED J.Carey PRINCIPAL ENGINEER
DATE 1-02


WORK IN TRAVEL LANE AND SHOULDER
TWO LANE HIGHWAY
SIGN FACE
62 SQ. FT (MIN)
ADVANCE WARNING AREA
200'
400'
LANE SHIFT TAPER AREA
BUFFER AREA
120'
WORK AREA
TERMINATION AREA
100'
SHOULDER
11' MIN
11' MIN
WORK AREA
TERMINATION AREA
BUFFER AREA
120'
TAPER AREA
400'
ADVANCE WARNING AREA
200'
SHOULDER
END ROAD WORK
4'
2'
80-9612
ROAD WORK AHEAD FINES DOUBLED
4'
3.5'
31-1906
ROAD WORK AHEAD
3'
3'
80-9603
SPEED LIMIT
CONE / DRUM SPACING
< 40 MPH
40'
≥ 40 MPH
80'
9 TRAFFIC CONES / DRUMS
SPEED LIMIT
TAPER LENGTH
CONE / DRUM SPACING
< 40 MPH
160'
20'
≥ 40 MPH
320'
40'
I DENOTES PORTABLE SIGN SUPPORT
O DENOTES TRAFFIC CONE OR TRAFFIC DRUM
SEE NOTES 1, 2, 5, 7, 8 & 10
REV'D 1-02
CONNECTICUT
DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & HIGHWAY OPERATIONS
DIVISION OF TRAFFIC ENGINEERING
CONSTRUCTION
TRAFFIC CONTROL PLAN
PLAN 15
SCALE NONE
APPROVED J.Carey PRINCIPAL ENGINEER
DATE 1-02


WORK IN MIDDLE OF ROADWAY
TWO LANE HIGHWAY
SIGN FACE
74 SQ. FT (MIN)
ADVANCE WARNING AREA
200'
400'
TAPER AREA
BUFFER AREA
120'
WORK AREA
TERMINATION AREA
11' MIN.
SHOULDER
WORK AREA
40' TYP.
120'
TERMINATION AREA
WORK AREA
BUFFER AREA
TAPER AREA
ADVANCE WARNING AREA
400'
200'
4'
3.5'
ROAD WORK AHEAD
FINES DOUBLED
31-1906
4'
2'
END ROAD WORK
80-9612
2'
3'
31-1526
3'
3'
ROAD WORK AHEAD
80-9603
SPEED LIMIT
CONE / DRUM SPACING
< 40 MPH
40'
≥ 40 MPH
80'
9 TRAFFIC CONES / DRUMS
SPEED LIMIT
TAPER LENGTH
CONE / DRUM SPACING
< 40 MPH
160'
20'
≥ 40 MPH
320'
40'
O DENOTES TRAFFIC CONE OR TRAFFIC DRUM
I DENOTES PORTABLE SIGN SUPPORT
SEE NOTES 1, 2, 5, 7, 8 & 10
REV'D 1-02
CONNECTICUT
DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & HIGHWAY OPERATIONS
DIVISION OF TRAFFIC ENGINEERING
CONSTRUCTION
TRAFFIC CONTROL PLAN
PLAN 16
SCALE NONE
APPROVED J.Carey PRINCIPAL ENGINEER
DATE 1-02


WORK IN MIDDLE OF ROADWAY AT INTERSECTION
SIGN FACE
148 SQ. FT (MIN)
250'
250'
11'
MIN.
WORK
AREA
9 TRAFFIC CONES/DRUMS
SPEED LIMIT
TAPER LENGTH
CONE/DRUM SPACING
≤40 MPH
160'
20'
≥40 MPH
320'
40'
TAPER
AREA
TYP.
3'
2'
31-1526
ROAD
WORK
AHEAD
80-9603
END
ROAD WORK
4'
2'
80-9612
ROAD WORK
AHEAD
FINES
DOUBLED
3.5'
31-1906
REV'D 1-02
CONNECTICUT
DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING &
HIGHWAY OPERATIONS
DIVISION OF TRAFFIC ENGINEERING
CONSTRUCTION
TRAFFIC CONTROL PLAN
PLAN 17
SCALE NONE
O DENOTES TRAFFIC CONE OR TRAFFIC DRUM
I DENOTES PORTABLE SIGN SUPPORT
SEE NOTES 1, 2, 5, 7 & 10
APPROVED J.Carey
PRINCIPAL ENGINEER
DATE 1-02


WORK IN TRAVEL LANE AND SHOULDER
TWO LANE HIGHWAY
ALTERNATING ONE-WAY TRAFFIC OPERATION
STOP SIGN CONTROL
SIGN FACE
124.6 SQ. FT (MIN)
STOP
31-0557
END
ROAD WORK
80-9612
DENOTES TRAFFIC CONE OR TRAFFIC DRUM
DENOTES PORTABLE SIGN SUPPORT
ADVANCE
WARNING
AREA
200'
500'
500'
500'
20'
TAPER
AREA
100'
BUFFER
AREA
WORK
AREA
BUFFER
AREA
TERMINATION
AREA
100'
SHOULDER
SHOULDER
100'
TERMINATION
AREA
BUFFER
AREA
40'
WORK
AREA
40'
TYP.
BUFFER
AREA
40'
100'
TAPER
AREA
TYP.
20'
TEMPORARILY COVER OR REMOVE
EXISTING CONFLICTING PAVEMENT
MARKINGS AND SIGNS.
6 TRAFFIC CONES / DRUMS
@ 20' SPACING
24" WIDE
STOP BAR
(TYP)
ONE LANE
ROAD
AHEAD
80-9834
3'
3'
ROAD
WORK
AHEAD
80-9603
STOP
AHEAD
80-9808
ADVANCE
WARNING
AREA
500'
500'
500'
200'
ROAD WORK
AHEAD
FINES
DOUBLED
3.5'
4'
31-1906
REV'D 1-02
CONNECTICUT
DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING &
HIGHWAY OPERATIONS
DIVISION OF TRAFFIC ENGINEERING
CONSTRUCTION
TRAFFIC CONTROL PLAN
PLAN 18
SCALE NONE
SEE NOTES 1, 2, 4, 5, 8 & 10
APPROVED J.Carey
PRINCIPAL ENGINEER
DATE 1-02

Article 9.71.05 – Basis of Payment is supplemented by the following:

This work will be paid for at the contract lump sum price for "Maintenance and Protection of Traffic. This price shall include the cost of all sweeping, signs, barricades, barrels, flashers, warning lights, and all flashing signs, etc., and all materials, labor and equipment necessary for the maintenance and protection of traffic as specified herein. Payment for Uniformed Police Officers required by the Borough will be made under the Item "Trafficperson (Municipal Police Officer)" as specified in these Technical Specifications.

No separate payment will be made for traffic signs, barricades, barrels, flashers, warning lights, flagmen, etc. and all costs in connection therewith shall be included in the contract lump sum item "Maintenance and Protection of Traffic."
The contract lump sum price for “Maintenance and Protection of traffic” shall also include furnishing, installing, and removing the material for temporary traversable slope in those areas where a longitudinal dropdown exists.

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

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

Pay Item	Pay Unit
Maintenance and Protection of Traffic	LS

ITEM #0979003A - CONSTRUCTION BARRICADE TYPE III

Description**:**

The Contractor shall furnish construction barricades to conform to the requirements of NCHRP Report 350 (TL-3) and to the requirements stated in Article 9.71 "Maintenance and Protection of Traffic," as shown on the plans and/or as directed by the Engineer.

Materials**:**

Prior to using the construction barricades, 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 (TL-3).

Alternate stripes of white and orange Type III or Type VI reflective sheeting shall be applied to the horizontal members as shown on the plans. Application of the reflective sheeting shall conform to the requirements specified by the reflective sheeting manufacturer. Only one type of sheeting shall be used on a barricade and all barricades furnished shall have the same type of reflective sheeting. Reflective sheeting shall conform to the requirements of Article M.18.09.01.

Construction barricades shall be designed and fabricated so as to prevent them from being blown over or displaced by the wind from passing vehicles. Construction barricades shall be approved by the Engineer before they are used.

Construction Methods**:** Ineffective barricades, as determined by the Engineer and in accordance with the ATSSA guidelines contained in "Quality Standards for Work Zone Traffic Control Devices", shall be replaced by the Contractor at no cost to the State.

Barricades that are no longer required shall be removed from the project and shall remain the property of the Contractor.

Method of Measurement**:**

Construction Barricade Type III will be measured for payment by the number of construction barricades required and used.

Basis of Payment**:** "Construction Barricade Type III" required and used will be paid for at the Contract unit price per each. Each barricade will be paid for once, regardless of the number of times it is used.

Pay Item	Pay Unit
Construction Barricade Type III	EA.

ITEM #0980001A – CONSTRUCTION STAKING

Description:

The work under this item shall consist of construction layout and reference staking necessary for the proper control and satisfactory completion of all work on the project, except property lines, highway lines, or non-access lines.

Materials:

All stakes used for control staking shall be of the same quality as used by the Department for this purpose. For slope limits, pavement edges, gutter lines, etc., where so-called "green" or "working" stakes are commonly used, lesser quality stakes will be acceptable, provided the stakes are suitable for the intended purpose.

Construction Methods:

The Department will furnish the Contractor such control points, bench marks, and other data as may be necessary for the construction staking and layout by qualified engineering or surveying personnel as noted elsewhere herein.
The Contractor shall be responsible for the placement and preservation of adequate ties to all control points, necessary for the accurate re-establishment of all base lines, center lines, and all critical grades as shown on the plans.
All stakes, references, and batter boards which may be required for construction operations, signing and traffic control shall be furnished, set and properly referenced by the Contractor. The Contractor shall be solely and completely responsible for the accuracy of the line and grade of all features of the work. Any errors or apparent discrepancies found in previous surveys, plans, specifications or special provisions shall be called to the Engineer's attention immediately for correction or interpretation prior to proceeding with the work.
During roadway construction (or site work), the Contractor shall provide and maintain for the periods needed, as determined by the Engineer, reference stakes at 100 foot intervals outside the slope limits. Further, the Contractor shall provide and maintain reference stakes at 50 foot intervals immediately prior to and during the formation of subgrade and the construction of all subsequent pavement layers. These stakes shall be properly marked as to station, offset and shall be referenced to the proposed grade, even if laser or GPS machine controls are used.
The Contractor shall provide and maintain reference stakes at drainage structures, including reference stakes for the determination of the structure alignments as may be needed for the proper construction of the drainage structure. The reference stakes shall be placed immediately prior to and maintained during the installation of the drainage structure. These stakes shall be properly marked as to station, offset and shall be referenced to the proposed grade.
The Contractor shall furnish copies of data used in setting and referencing stakes and other layout markings used by the Contractor after completion of each operation.
The Contractor shall provide safe facilities for convenient access by Department forces to control points, batter boards, and references.

All staking shall be performed by qualified engineering or surveying personnel who are trained, experienced and skilled in construction layout and staking of the type required under the contract. Prior to start of work, the Contractor shall submit for review and comment the qualifications of personnel responsible for construction staking on the project. On all projects with an original contract value greater than $25 million and bridge rehabilitation and reconstruction projects greater than $10 million, surveying shall be performed under the direct supervision of a Professional Surveyor licensed in the State of Connecticut. The submission shall include a description of the experience and training which the proposed staff possesses and a list of state projects the personnel have worked on previously. All field layout and staking required for the project shall be performed under the direct supervision of a person, or persons, of engineering background experienced in the direction of such work and acceptable to the Engineer. If the personnel responsible for construction staking change during the course of the project, then a revised submittal will be required.

The Department may check the control of the work, as established by the Contractor, at any time as the work progresses. The Contractor will be informed of the results of these checks, but the Department by so doing in no way relieves the Contractor of responsibility for the accuracy of the layout work. The Contractor shall correct or replace, at the Contractor's own expense, any deficient layout and construction work which may be the result of the inaccuracies in the Contractor's staking operations or the failure to report such inaccuracies, or the Contractor's failure to report inaccuracies found in work done by the Department or by others. If, as a result of these inaccuracies, the Department is required to make further studies, redesign, or both, all expenses incurred by the Department due to such inaccuracies will be deducted from any monies due the Contractor.

The Contractor shall furnish all necessary personnel, engineering equipment and supplies, materials, transportation, and work incidental to the accurate and satisfactory completion of this work.

For roadways where the existing pavement markings need to be reestablished:
Prior to any resurfacing or obliteration of existing pavement markings, the Contractor and a representative of the Engineer must establish and document pavement marking control points from the existing markings. These control points shall be used to reestablish the positions of the lanes, the beginnings and endings of tapers, channelization lines for on and off ramps, lane use arrows, stop bars, and any lane transitions in the project area. The Contractor shall use these control points to provide appropriate premarking prior to the installation of the final markings. The Contractor shall provide and maintain reference stakes and/or markings at 100 foot intervals immediately off the edge of pavement to be used to reestablish the existing pavement markings. The Contractor shall also provide and maintain reference stakes and/or markings at any point where there is a change in pavement markings to reestablish the existing pavement markings.

For non-limited access roadways
As per subsection (a) of section 13b-79 p, subdivision (22) of the general statutes, effective October 1, 2008, the Department shall accommodate bicyclists on State roadways where feasible. In an effort to provide a bicycle friendly environment, the Department is seeking to

provide minimum shoulder widths of 4 to 5 feet wherever possible. On paving jobs where new pavement markings will be applied, State roads are to be stripped with travel lanes no less than 11 feet and no more than 12 feet to provide for wider shoulders.
The Contractor and a representative of the Engineer and a representative of the Division of Traffic Engineering shall adjust the pavement marking control points as described above to accommodate this pedestrian and bicycle safety initiative.

Method of Measurement:

Construction staking will be at the Contract lump sum for construction staking

9.80.05—Basis of Payment:

Construction staking will be paid for at the Contract lump sum price for "Construction Staking," which price shall include all materials, tools, equipment, labor and work incidental thereto. A schedule of values for payment shall be submitted to the Department for review and comment prior to payment.

Pay Item	Pay Unit
Construction Staking	LS

ITEM #0992084A – INFORMATION KIOSK
ITEM #0992085A – INFORMATION SIGN

Description:

Under this item the Contractor shall furnish and install information kiosks and signs at locations shown and detailed on the Contract plans.

Submittals:

Shop or product drawings and product data shall be submitted for each item including anchoring method.

Materials:

Manufacturer:

Fossil Industries Inc.
44 Jefryn Boulevard
Deer Park, NJ 11729
p. 63-254-9200
f. 631-254-4172

Concrete shall conform to the requirements of Section 9.21 of the Standard Specifications.

Processed Aggregate Base shall conform to the requirements of Section 3.04 of the Standard Specifications.

Reinforcing shall conform to the requirements of Article M.06.01 of the Standard Specifications.

Steel flat stock shall meet the standards of ASTM 36, AISI M1020 or 1015 as applicable.

All hardware shall conform to ASTM A307 requirements and shall be galvanized per ASTM A153.

Welding shall be in conformance with AWS codes. All connections shall be formed with "fish mouthed" joints full seam welded, ground smooth, and sanded.

All steel shall be galvanized in accordance with the requirements of Section M.06.03 of the Standard Specifications, after fabrication.

Shop prime and paint all steel with approved paint as detailed on the shop drawings, as appropriate.

Anchoring Systems: Non-corrosive recommended by the manufacturer.

Construction Methods:

Installation shall conform to manufacturer's instructions and Contract plans

Acceptance Standards: Site improvement items provided and fabricated under this specification will be rejected by the Engineer for any of the following conditions:

a. Upon installation, horizontal or vertical curves do not match the shapes and profiles shown on the approved shop drawings. Curves that have broken backs, sags, saddles, tangents, or kinks will be rejected.

b. Components not plumb or set at proposed grade.
c. Field welding or cutting.
d. Threaded connections not fully drawn together tightly to manufacturers recommended torque or threads not deformed to prevent loosening.
e. Anchorage systems not properly installed t the provisions defined by the manufacturer.

Method of Measurement:

This item shall be measured for payment by the actual number Information Kiosks and Information Signs installed where indicated on the plans or ordered by the Engineer

Basis of Payment:

Payment for this item shall be at the contract unit price bid per each "Information Kiosk" and "Information Sign" complete in place, which price shall include all materials, equipment and labor incidental to or necessary for the satisfactory completion of the work for this item, including but not limited to anchor systems, concrete slabs/ foundations and excavation/backfill.

Pay Item	Pay Unit
Information Kiosk	EA
Information Sign	EA

ITEM #0992090A – BENCH
ITEM #0992091A – TRASH RECEPTACLE
ITEM #0992092A - BIKE RACK

Description:

Under this item the Contractor shall furnish and install decorative benches, trash receptacles, and bike racks at locations shown and detailed on the Contract plans.

Submittals:

Shop or product drawings and product data shall be submitted for each item including anchoring method.

Materials:

Concrete shall conform to the requirements of Section 9.21 of the Standard Specifications.

Processed Aggregate Base shall conform to the requirements of Section 3.04 of the Standard Specifications.

Reinforcing shall conform to the requirements of Article M.06.01 of the Standard Specifications.

Bench

Manufacturer:	DuMor, Inc. Mifflintown, PA or approved equal
Catalogue Number:	Cast Iron, #58-60
Color:	Black

Trash Receptacle

Manufacturer:	DuMor, Inc. Mifflintown, PA or approved equal
Catalogue Number:	Cast Iron, #102-32dm
Color:	Black

Bike Rack

Manufacturer:	DuMor, Inc. Mifflintown, PA or approved equal
Catalogue Number:	Galvinized Steel Tube, #83-00/S1 Embedment
Color:	Galvanized

Anchoring Systems: Non-corrosive recommended by the manufacturer. See details on sheets SD-2 and 3.

Construction Methods:

Installation shall conform to manufacturer's instructions and Contract plans

Acceptance Standards: Site improvement items provided and fabricated under this specification will be rejected by the Engineer for any of the following conditions:

f. Upon installation, horizontal or vertical curves do not match the shapes and profiles shown on the approved shop drawings. Curves that have broken backs, sags, saddles, tangents, or kinks will be rejected.

g. Components not plumb or set at proposed grade.
h. Field welding or cutting.
i. Threaded connections not fully drawn together tightly to manufacturers recommended torque or threads not deformed to prevent loosening.
j. Anchorage systems not properly installed t the provisions defined by the manufacturer.

Method of Measurement:

This item shall be measured for payment by the actual number of Benches, Trash Receptacle, and Bike Racks installed where indicated on the plans or ordered by the Engineer

Basis of Payment:

Payment for this item shall be at the contract unit price bid per each "Bench," "Trash Receptacle," and "Bike Rack" complete in place, which price shall include all materials, equipment and labor incidental to or necessary for the satisfactory completion of the work for this item, including but not limited to benches, trash receptacles, bike racks, anchor systems, drilling and grouting, concrete slabs/ foundations and excavation/backfill.

Pay Item	Pay Unit
Bench	EA
Trash Receptacle	EA
Bike Rack	EA

ITEM #0992095A – GATEWAY SIGN

Description:

This work consists of furnishing and installing Gateway Signs where shown on the plans and where directed by the Engineer.

Materials:

All signs will be made from the same material and manufacturer as used by the Borough for their existing gateway signs and as detailed on the contract drawings.

Construction Methods:

All signs shall be installed as shown on the plans and as directed by the Engineer.

Concrete shall be placed in accordance with the applicable sections of Section 6.01 of the standard specifications.

Reinforcing steel shall be installed in accordance with the applicable sections of Section 6.02 of the standard specifications.

Method of Measurement:

Signs will be measured as individual units, in place, and acceptable to the Engineer.

Basis of Payment:

This work will be paid for at the contract unit price each for "Gateway Sign," complete in place, which price shall include all materials, equipment, tools, and labor incidental thereto.

Pay Item	Pay Unit
Gateway Sign	EA

ITEM # 1002008A – LIGHT POLE AND FIXTURES (DECORATIVE)

Description:

This work shall include the furnishing, assembling and installation of a decorative light standard and luminaire on a concrete foundation in each location shown on the plans. Work under this item shall include all fasteners and hardware necessary for complete installation of foundation, ground rod, standard and luminaire.

Materials:

The materials for this work shall conform to the applicable requirements of Article M.15.04 of Form 816 of the Standard Specifications and the following requirements:

1. Pedestrian Light Pole, Base and Luminaire:

    a. Shall be as manufactured by Lumec, 640 Cure-Boivin, Boisbriand, Quebec, Canada, J7G 2A7 telephone (450) 430-7040, web address: www.lumec.com. The street light shall be catalog #DMS50-85QL-SCB5-120-IF-1A-BKTX Typical for all fixtures, Pole Mount #SAM8V-14-BRTX 14'HT. Substitutions require approval from the Landscape Architect/Engineer.

    b. Anchor Bolts: Fully galvanized anchor bolts as recommended by and manufactured by Lumec.

2. All luminaires to be furnished with specified QL induction lamp and 120 volt, single phase driver.

3. Concrete light pole foundation for fixtures on grade shall be Class "A" concrete. Reinforcing steel shall conform to Article M.06.01 of the Standard Specifications.

Construction Methods:

The light standard shall be installed on the foundation, set plumb and true to the vertical plane at locations as indicated on the plans. The luminaire and standard shall be assembled carefully, without damage, and to the manufacturer's specifications or recommendations.

All exposed faces on the concrete foundations shall be neatly finished and smooth and top edges shall be rounded or beveled. Conduit shall be extended so as to pass through the concrete deck on which the light standard base will rest. A ground rod shall be installed per the Contract Drawings.

Method of Measurement:

This work will be measured for payment by the actual number of decorative light standards and luminaires (single), assembled, together on a concrete foundation, complete in place, and accepted by the Engineer.

Basis of Payment:

This work will be paid for at the contract unit price for each "Light Pole and Fixtures (Decorative)", complete in place and successfully tested, which price shall include all equipment, tools, labor, finishing, testing and materials incidental thereto.

Pay Item	Pay Unit
Light Pole and Fixtures (Decorative)	EA

ITEM # 1003595A – DECORATIVE LIGHT POLE AND LIGHT FIXTURE (BRIDGE)

Description:

This work shall include the furnishing, assembling and installation of a decorative light pole and fixture on the existing steel structure of the General Pulaski Pedestrian Bridge in each location shown on the plans. Work under this item shall include all fasteners and hardware necessary for complete installation of standard and luminaire.

Materials:
The materials for this work shall conform to the applicable requirements of Article M.15.04 of Form 816 of the Standard Specifications and the following requirements:

1. Pedestrian Light Pole, Base and Luminaire:

    a. Shall be as manufactured by Lumec, 640 Cure-Boivin, Boisbriand, Quebec, Canada, J7G 2A7 telephone (450) 430-7040, web address: www.lumec.com. The street light shall be catalog #DMS50-85QL-SCB5-120-IF-1A-BKTX Typical for all fixtures, Pole Mount #SAM8V-12-BRTX 12'HT. Substitutions require approval from the Landscape Architect/Engineer.

2. All luminaires to be furnished with specified QL induction lamp and 120 volt, single phase driver.

3. Refer to Contract Drawings for details of mounting to pedestrian bridge where applicable.

Construction Methods:

The light standard shall be set plumb and true to the vertical plane. The luminaire and standard shall be assembled carefully, without damage, and to the manufacturer's specifications or recommendations.

Method of Measurement:

This work will be measured for payment by the actual number of decorative light standards and luminaires (single), assembled, complete in place, and accepted by the Engineer.

Basis of Payment:

This work will be paid for at the contract unit price for each "Decorative Light Pole and Fixtures (Bridge)", complete in place and successfully tested, which price shall include all equipment, tools, labor, finishing, testing and materials incidental thereto.

Pay Item	Pay Unit
Decorative Light Pole and Light Fixture (Bridge)	EA

ITEM #1003892A – CONCRETE FOUNDATION – (provided by CL&P)

Description:

This item shall consist of furnishing and installing concrete light pole foundations, grounding wire, ground rod and connections, complete in place, at the locations, and as described herein, and to the dimensions shown on the plans or as directed by the Landscape Architect/Engineer.

Materials:

The materials for this work shall conform to the applicable requirements of Article M.15.04 of Form 816 of the Standard Specifications and the following requirements:

1. Pedestrian Light Pole Base:

    a. Shall be as provided by CL&P. The Contractor must coordinate order and delivery of the bases with the work of his contract.

2. Concrete light pole foundation shall be Class "C" concrete. Reinforcing steel shall conform to Article M.06.01 of the Standard Specifications. Bases are to be provided by CL&P.

3. 3/4 inch by 10 foot Ground Rod with #6 copper ground wire.

Construction Methods:

Light standards foundation shall be installed plumb in locations shown on the drawings.

Excavation for light pole foundation shall be done in conformance with Section 10.00 of the Standard Specifications.

Method of Measurement:

This work will be measured for payment by the number of complete decorative light pole concrete foundations of the type specified, and accepted in place.

Basis of Payment:

This work will be paid for at the Contract unit price each for "Decorative Light Pole Concrete Foundation" of the type specified, complete in place, which price shall include all work and materials, including excavation, trenching and backfilling, sidewalk repair, concrete light pole foundation, ground wire, ground rod, and all equipment, materials, tools, and labor incidental.

Description	Unit
Concrete Foundation	Each

ITEM #1003912A - REMOVE CONCRETE LIGHT STANDARD BASE

Description:

Under this item the contractor shall remove an existing concrete light standard base where shown on the plans or as directed. The removed concrete base shall remain the property of the contractor.

Construction Methods:

The contractor shall remove a concrete light standard base where indicated on the plans or as directed by the Engineer. The removed base shall be properly disposed of by the contractor. The resulting excavation shall be backfilled, top soiled, graded and seeded to match surroundings in conformance with Section M.13, unless otherwise noted on the plans.

Method of Measurement:

This work will be measured for payment by the number of concrete light standard bases removed and disposed of, complete and accepted.

Basis of Payment:

This work will be paid for at the contract unit price each for "Remove Concrete Light Standard Base", which price shall include all materials, equipment and work incidental thereto including removal of base, excavation, backfill, topsoil, grading, seeding, fertilizing, hauling and disposing of concrete base.

Description	Unit
Remove Concrete Light Standard Base	Each

ITEM #1003916A - REMOVE AND RELOCATE LIGHT STANDARD

DESCRIPTION:

Under this item the Contractor shall remove, temporarily store as required, and install an existing light standard where shown on the plans, or as directed by the Engineer. The installation shall consist of erecting the light standard with bracket, ballast, luminaire and lamp onto a new foundation/anchorage, and making all necessary electrical connections for proper operation.

MATERIALS:

The Contractor shall be responsible for damage to all equipment and materials incurred during removal and hauling to the specified area. All repairs or replacements due to damage or loss by the Contractor shall be made at the Contractor's expense.

CONSTRUCTION METHOD:

The Contractor shall remove a light standard, bracket, luminaire and ballast where indicated on the plans, or as directed by the Engineer. The Contractor shall effectively disconnect the luminaire from the lighting circuit and detach the pole from the grounding system. The Contractor shall remove the four anchor nuts with associated hardware and remove the light standard from the foundation/anchorage. The light standard, bracket arm, luminaire and mounting hardware shall be properly stored as a unit away from traffic and sources of possible damage.

Upon installation of the new foundation/anchorage (paid for under separate bid item), the removed light standard shall be bolted securely to the anchor bolts. The completely assembled light standard shall be erected plumb with the aid of aluminum shims, if necessary. The bracket shall be securely attached to the light standard and the assembly shall be erected with the bracket placed perpendicular to the center line of the roadway.

The light standard shall be connected to the ground rod and grounding system and the luminaire shall be reconnected to the lighting circuit as indicated on the plans.

The Contractor shall make all necessary arrangements with the District Electrical Maintenance Supervisor, for locking and unlocking of the circuits on which any work is to be done, through the Engineer.

All work shall be in strict conformance with the National Electric Code.

METHOD OF MEASUREMENT:

This work will be measured for payment by the number of light standards removed and relocated, complete and accepted.

BASIS OF PAYMENT:

This work will be paid for at the contract unit price each for "Remove and Relocate Light Standard" as specified, which price shall include removal, storage, delivery, and installation of the light standard, connections, and all work, materials, tools and equipment incidental thereto.

Description	Unit
Remove and Relocate Light Standard	Each

ITEM #1008012A – 1" RIGID METAL CONDUIT - SURFACE
ITEM #1008212A – 1" RIGID METAL CONDUIT UNDER PAVEMENT
ITEM #1008215A – 2" RIGID METAL CONDUIT UNDER PAVEMENT

All of the provisions of Section 10.0 of the Standard Specifications shall apply with the following modifications:

Description:

Work under these items shall consist of furnishing and installing all electrical components in the locations shown on the plans and in accordance with the dimensions and details shown on the plans or as directed by the Engineer.

Materials/Construction Methods:

All electrical work shall be installed in accordance with the latest edition of the national electrical code. All electrical equipment utilized shall be U.L. listed.

Rigid Metal Conduit – Surface –
Contractor to coordinate all fasteners and support methods for all surface mounted conduit with CL&P.

Expansion fittings shall be installed in the conduit mounted to the surface of the pedestrian bridge at all expansion joints.

Liquid tight flexible metal conduit should be installed at all abutment/pier to superstructure transition points.

Method of Measurement and Basis for Payment:

Rigid Metal Conduit – Surface - The work under this item shall consist of the work to install rigid metal conduit and pull wires on the surface of the General Pulaski Pedestrian Bridge, between proposed decorative light poles shown on the plans. Work includes but is not limited to conduit, pull wires, expansion fittings, liquid tight flexible metal conduit, and all fastening hardware. Payment for these items shall be at the unit price bid per linear foot for rigid metal conduit actually placed.

Description	Unit
1" Rigid Metal Conduit - Surface	LF

Rigid Metal Conduit Under Roadway – The work under these items shall consist of the work to install rigid metal conduit and pull wires between proposed decorative light poles and to the limits of the work shown on the plans. The work under these items shall also consist of the necessary watertight caps and marking tape. Work includes but is not limited to trenching and backfilling, conduits, processed trap rock, clean fill, sand encasement, and marking tape. Payment for these items shall be at the unit price bid per linear foot for rigid metal conduit actually placed.

Description	Unit
1" Rigid Metal Conduit Under Pavement	LF
2" Rigid Metal Conduit Under Pavement	LF

ITEM #1010901A REMOVE AND RELOCATE CONCRETE HANDHOLE

Description:

Under this item the Contractor shall remove and relocate an existing concrete handhole as indicated on the plans or as directed by the Engineer. This item shall also include the removal and reinstallation of existing conductors from existing underground conduit, cutting and threading of existing rigid metal conduit, re-feeding the adjacent light pole, and returning any areas disturbed by the excavation to final grade as shown on the plans or as directed by the Engineer.

Materials:

The Contractor shall be responsible for damage to all equipment and materials incurred during removal and hauling to specified areas. All repairs or replacements due to damage or loss by the Contractor shall be made at the Contractor's expense.

Construction Method:

The Contractor shall contact Mr. David Moriarty of ConnDOT District 3 Electrical Maintenance (203-264-9590) when access to the lighting circuit is required. The lighting circuitry is 480 volt, 3 phase, 3 wire, and the lighting control cabinet is located on South Main Street in Naugatuck. The Contractor shall disconnect the existing lighting conductors in the existing handhole to be relocated. The Contractor shall carefully excavate around the handhole and remove the two existing polyethylene cable ducts from the handhole. The Contractor shall access the existing handhole in the gore area between the Route 8 on-ramp and off-ramp and pull back the existing lighting conductors until they are completely removed from the conduit that crosses under the off-ramp. Upon removal of the existing circuitry the Contractor shall remove the handhole and temporarily place the handhole in a location safely away from vehicular traffic. The Contractor shall excavate around the existing RMC on the west side of the off ramp and cut this conduit to the new handhole location which will be approximately 8’ from the curb line (as indicated on the plans, or as directed by the Engineer). The Contractor shall thread the end of the conduit and reinstall the handhole to the new location. A minimum of 3” of the existing RMC shall extend into the handhole. The Contractor shall install end bells at the end of the conduits which enter handholes. The Contractor shall install a new insulated bonding bushing on the threaded end of the conduit. Upon setting of the handhole, the Contractor and pull back the conductors through the ramp conduit crossing and into the relocated handhole. The Contractor shall reconnect the lighting conductors and ground wire in the handhole as indicated on the plan. As part of this item the Contractor shall also excavate around the existing adjacent light pole foundation and sweep the existing cable duct and ground wire from the bridge parapet into the light pole base. Conduit and conductors shall be installed from the pole base to the handhole under separate bid items. The steel handhole cover shall be installed on the top of the handhole.

Areas disturbed by the excavation for the handholes shall be neatly graded to conform to the adjacent contours. Where topsoil has been removed, it shall be fertilized, seeded and mulched.

The Contractor shall complete all work associated with this item during the daytime hours in order to eliminate lighting outages. Highway lighting operations shall not be disrupted during the course of this work.

Method of Measurement:

This work will be measured for payment by the number of concrete handholes removed ad relocated complete and accepted.

Basis of Payment:

This work will be paid for at the contract unit price each for "Remove and Relocate Concrete Handhole" as specified, which price shall include removal, excavation, relocating, trenching, installation, disconnecting, conductor removal and reinstallation, cutting of conduit, threading of conduit, end bells, bonding bushing, reconnecting circuit conductors, grading and placing topsoil, seeding, fertilizing, mulching and all equipment tools, labor and work incidental thereto.

Description	Unit
Remove and Relocate Concrete Handhole	EA

ITEM 1017103A – SERVICE ENTRANCE AND CABINET (100A SERVICE)

Description:

Work under these Items shall consist of furnishing, installing and coordination of new utility service and distribution system to power new loads as indicated on the drawings. The work shall include providing all material, labor, tools, equipment, wiring, fees and coordination with Connecticut Light and Power (CL&P), and the Borough of Naugatuck.

Submittals:

Material Certificate of Compliance:

Submit required copies of material certificate of compliance for service equipment in accordance with the contract general requirements.

Shop Drawings:

Submit required copies of shop drawings for service equipment in accordance with the contract general requirements. Include meter socket, GFI service receptacle, panelboard, breakers, fuses, lighting controls, enclosure and concrete base.

Materials:

General: The Service enclosure shall include the following pieces of equipment: meter socket, GFI service receptacle, time clock, panelboard with main breaker and lighting controls. Utility service shall be 208/120V, 1-phase, 3-wire and will be provided from an existing CL&P pole as indicated on the drawings. Service conduit shall be furnished and installed by Contractor. Service cable shall be furnished and installed by Contractor unless otherwise coordinated with CL&P. All wire and labor for connection from meter to panelboard shall be by the Contractor.

Hinged Door Service Enclosure

Manufacturers shall be equal to Hoffman, Marlin Controls or McKinstry and shall be constructed of NEMA 3R enclosure; 12 gauge stainless steel (304) with continuously welded seams. The door shall be continuous hinge with stainless steel pin held closed by three-point latching mechanism with recessed cylinder lock and latch dead bolt with protective shroud. Lock shall be keyed as directed by the Borough of Naugatuck. Provide 5 keys for the lock. The door shall be provided with a 90 degree locking door stop to prevent the door from opening more than 90 degrees and to prevent the door from closing on workers. Provide door with a drawing pocket. The interior shall be provided with 12 gauge metal panel for mounting electrical equipment; finish with white enamel. Provide grounding lug on panel for bonding.

Circuit Breaker Panelboard

Manufacturers shall be equal to Square D or GE with ratings as indicated on drawings. Pane1board bus shall be Tin-plated copper, ratings as indicated. Provide with Copper ground bus. Minimum short circuit rating: 42,000 amperes RMS symmetrical for 240 volt panelboards.

Molded case circuit breakers shall be NEMA AB1. Provide circuit breakers with integral thermal and instantaneous magnetic trip in each pole. Provide circuit breakers UL Listed as SWD for control of high-intensity discharge lighting. Provide cabinet front in surface type hinged front construction, fastened with screws. Circuit breaker operating handle access door shall have key locks, with all panels keyed alike. Finish in manufacturer's standard gray enamel.

Electric Meter Socket

Manufacturer shall be as listed for approved manufacturers by the Utility Company.

Ground Rods

Service Pedestal shall be provided with a Copper, 3/4 inch Diameter, 10 feet long ground rod equal to Erico Products Company.

Concrete Base

Poured concrete base shall be sized to provide a minimum 3" lip on all sides of enclosure. Base shall be provided with formed opening for conduit entry or conduits shall be coordinated and cast in place. Exact dimensions, reinforcement and materials shall be as detailed on Drawings.

Construction Method:

Utility Service Connections

General: The necessary work, coordination and CRS submission required to meet CL&P requirements per the latest Information and Requirements issued by CL&P. Contractor shall pay all Utility fees associated with new service.

The work shall be in accordance with manufacturer's recommendations and all state and local codes.

The Contractor shall coordinate all final electrical service connection with CL&P and meet utility company's requirements. Coordination with the Borough of Naugatuck's Electrical Inspector is required.

Method of Measurement:

Service and Distribution and Utility Service Connection shall be measured for payment by the number of each service installed, wired, operational, accepted and all coordination with CL&P and the Borough of Naugatuck Electrical Inspector completed.

Basis of Payment:

This work will be paid for at the Contract lump sum price for "Service and Distribution" and Utility Service Connection". This price shall include all materials, labor, equipment herein, tools and incidental expenses thereto.

Contractor is to be responsible for:

Utility Service:

- Riser
- Riser Clamps
- Slip Fittings
- Installation of 2-1/2" underground conduit with pull-string
- Trenching & Backfilling
- Electric Meter Socket

Service Enclosure:

- Concrete pad
- Service enclosure
- Panelboard
- Time Clock
- GFCI Receptacle
- All associated conduit & wire

DESCRIPTION	PAY UNIT
SERVICE ENTRANCE AND CABINET (100A SERVICE)	LS

ITEM NO. 1206023A - REMOVAL AND RELOCATION OF EXISTING SIGNS

Description:

Work under this item shall consist of the removal and/or relocation of designated extruded aluminum and sheet aluminum side-mounted signs, sign posts, sign supports, and foundations where indicated on the plans or as directed by the Engineer.

Construction Methods:

The Contractor shall take care during the removal of existing signs, sign posts, and sign supports that are to be relocated so that they are not damaged. Any material that is damaged shall be replaced by the Contractor at no cost to the Owner.
Sheet aluminum signs designated for removal are to be salvaged if they are in suitable condition as determined by the Engineer. The Contractor shall sort all salvaged sheet aluminum signs by size and shall stack ten signs to a bundle. Each bundle shall be bound by tape or metal strap and the bundles shall be stacked on pallets. The Contractor shall confirm intended delivery of the salvaged sheet aluminum signs at least seven days in advance and shall deliver the signs to the Borough of Naugatuck or State of Connecticut Department of Traffic depending on ownership. Extruded aluminum signs, sheet aluminum signs not suitable for salvage, sign posts, sign supports, and foundations designated for removal shall be removed and disposed of by the Contractor as directed by the Engineer and in accordance with existing standards for removal of signing.

Method of Measurement:

Payment under Removal and Relocation of Existing Signs shall be at the contract lump sum price which shall include all extruded aluminum and sheet aluminum side-mounted signs, sign posts, and sign supports designated for relocation, all sheet aluminum side-mounted signs designated for salvage, all extruded aluminum and sheet aluminum signs, sign posts, sign supports, and foundations designated for removal and disposal, and all work and equipment required.

Basis of Payment:

This work will be paid for at the contract lump sum price for "Removal and Relocation of Existing Signs" which price shall include relocating designated extruded aluminum and sheet aluminum side-mounted signs, sign posts, and sign supports, removing and disposing of designated extruded aluminum and sheet aluminum side-mounted signs, sign posts, sign supports, and foundations, and all equipment, material, tools and labor incidental thereto. This price shall also include the loading, transporting, and unloading of sheet aluminum side-mounted signs designated for salvage and all equipment, material, tools and labor incidental thereto.

Pay Item	Pay Unit
Removal and Relocation of Existing Signs	L.S.

ITEM #1208906A – SIGN FACE – SHEET ALUMINUM – BRIGHT WIDE ANGLE RETROREFLECTIVE SHEETING

Description:

This item shall consist of furnishing and installing wood sign posts at locations indicated on the plans or as ordered and in conformance with the plans and these specifications.

Materials:

Wood sign posts shall be Pressure Treated Southern Yellow Pine conforming to the requirements of Article M.12.13 with the dimensions as shown on the plans.

Construction Methods:

Wood sign posts shall be set in a bored or augured hole and the post hole shall be backfilled with 13 mm crushed stone compacted into place around the post.

Basis of Payment:

This work will be paid for at the Contract unit price per square foot for "Sign Face – Sheet Aluminum" of the type specified complete in place, which price shall include the completed sign, metal sign post(s), wood sign post(s), V-Loc post anchor system, span-mounted sign brackets and mast arm-mounted brackets or parapet-mounted sign support, mounting hardware, including reinforcing plates, and all materials, equipment, labor and work incidental thereto.

Pay Item	Pay Unit
Sign Face – Sheet Aluminum (Type)	SF

ITEM #1220011A - CONSTRUCTION SIGNS – TYPE III REFLECTIVE SHEETING

Description:

The Contractor shall furnish construction signs with Type III reflective sheeting and their required portable supports or metal sign posts that conform to the requirements of NCHRP Report 350 (TL-3) and to the signing requirements stated in Article 9.71 "Maintenance and Protection of Traffic," as shown on the plans and/or as directed by the Engineer.

Materials:

Prior to using the construction signs and their portable supports, 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).

Portable sign supports shall be designed and fabricated so that the signs do not blow over or become displaced by the wind from passing vehicles. Portable sign supports shall be approved by the Engineer before they are used.

Mounting height of signs on portable sign supports shall be a minimum of 1 foot and a maximum of 2 feet, measured from the pavement to the bottom of the sign.

All sign faces shall be rigid and reflectorized. Reflective sheeting shall conform to the requirements of Article M.18.09.01 (Type III). Sheet aluminum sign blanks shall conform to the requirements of Article M.18.13. Metal sign posts shall conform to the requirements of Article M.18.14. Application of reflective sheeting, legends, symbols, and borders shall conform to the requirements specified by the reflective sheeting manufacturer. Attachments shall be provided so that the signs can be firmly attached to the portable sign supports or metal posts without causing damage to the signs.

The following types of construction signs shall not be used: mesh, non-rigid, roll-up.

The following portable sign support systems or equivalent systems that meet the above requirements may be used:

- Korman Model #SS548 flexible sign stand with composite aluminum sign substrate (APOLIC)
- Traffix "Little Buster" dual spring folding sign stand with corrugated polyethylene (0.4 in. thick) sign substrate (InteCel)

Construction Methods:

Ineffective signs, as determined by the Engineer and in accordance with the ATSSA guidelines contained in "Quality Standards for Work Zone Traffic Control Devices", shall be replaced by the Contractor at no cost to the State.

Signs and their portable supports or metal posts that are no longer required shall be removed from the project and shall remain the property of the Contractor.

Method of Measurement:

Construction Signs - Type III Reflective Sheeting will be measured for payment by the number of square feet of sign face. Sign supports will not be measured for payment.

Basis of Payment:

"Construction Signs – Type III Reflective Sheeting" required and used on the project will be paid for at the Contract unit price per square foot. This price shall include the furnishing and maintenance of the signs, portable sign supports, metal sign posts and all hardware. Each sign and support or posts will be paid for once, regardless of the number of times it is used.

Pay Item	Pay Unit
Construction Signs – Type III Reflective Sheeting	S.F.

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GENERAL CONTRACT PROVISIONS

SUPPLEMENTAL SPECIFICATIONS TO THE STANDARD SPECIFICATIONS FORM 816

FHWA REQUIRED CONTRACT PROVISIONS

Form PR-1273 All Federal Aid Construction Contracts

STATE OF CONNECTICUT REQUIRED CONTRACT PROVISIONS

SUBSTITUTION OF SECURITIES FOR RETAINAGES ON STATE CONTRACTS AND SUBCONTRACTS

NONDISCRIMINATION

NONDISCRIMINATION (SEXUAL ORIENTATION)

RESIDENTS' PREFERENCE IN WORK ON OTHER PUBLIC FACILITIES

CONSTRUCTION, ALTERATION OR REPAIR OF PUBLIC WORKS PROJECTS BY THE STATE OR POLITICAL SUBDIVISION

LIMITATION ON AWARDING OF CONTRACTS

RATE OF WAGES FOR WORK ON STATE HIGHWAYS

ANNUAL ADJUSTMENTS TO PREVAILING WAGES

AWARDING OF CONTRACTS TO OCCUPATIONAL SAFETY AND HEALTH LAW VIOLATORS PROHIBITED

CONSTRUCTION SAFETY AND HEALTH STANDARDS

SERVICE OF PROCESS

AMERICANS WITH DISABILITIES ACT OF 1990

EXECUTIVE ORDER NO. THREE

EXECUTIVE ORDER 7C

EXECUTIVE ORDER 14

EXECUTIVE ORDER NO. 16 - VIOLENCE IN THE WORKPLACE PREVENTION

EXECUTIVE ORDER NO. SEVENTEEN - LISTING ALL EMPLOYMENT OPENINGS WITH THE CONNECTICUT STATE EMPLOYMENT SERVICE

EXECUTIVE ORDER NO. 17

EXECUTIVE ORDER NO. 18

CONNECTICUT REQUIRED EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES

AFFIRMATIVE ACTION REQUIREMENTS A(76)

PRIVATIZED PUBLIC RECORDS

OVERSIGHT OF LARGE STATE CONTRACTS

CONSTRUCTION SAFETY AND HEALTH COURSE

HEALTH INSURANCE PORTABILITY AND ACCOUNTABILITY ACT OF 1996 ("HIPAA")

ATTACHMENTS

STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION SPECIFICATION (EXECUTIVE ORDER 11246)

CONTRACTOR'S EXEMPT PURCHASE CERTIFICATE

EXECUTIVE ORDER NO. THREE

EXECUTIVE ORDER NO. 14

EXECUTIVE ORDER NO. 16

EXECUTIVE ORDER NO. SEVENTEEN

EXECUTIVE ORDER NO. 17

EXECUTIVE ORDER NO. 18

CONNECTICUT REQUIRED EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES

FEDERAL AND STATE WAGE SCHEDULE (included elsewhere in this document)

State of Connecticut Department of Transportation

SUPPLEMENTAL SPECIFICATIONS TO THE

STANDARD SPECIFICATIONS FOR ROADS, BRIDGES AND

INCIDENTAL CONSTRUCTION

FORM 816
2004

July 2010

These supplemental Specifications are not included herein. Rather, they are available on the CT Department of Transportation website, and the Contractor is responsible for obtaining them for use on this project.

FHWA - Form 1273

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

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ATTACHMENTS

A. Employment Preference for Appalachian Contracts (included in Appalachian contracts only)

I. GENERAL

1. These contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

2. Except as otherwise provided for in each section, the contractor shall insert in each subcontract all of the stipulations contained in these Required Contract Provisions, and further require their inclusion in any lower tier subcontract or purchase order that may in turn be made. The Required Contract Provisions shall not be incorporated by reference in any case. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with these Required Contract Provisions.

3. A breach of any of the stipulations contained in these Required Contract Provisions shall be sufficient grounds for termination of the contract.

4. A breach of the following clauses of the Required Contract Provisions may also be grounds for debarment as provided in 29 CFR 5.12:

Section I, paragraph 2;
Section IV, paragraphs 1, 2, 3, 4, and 7;
Section V, paragraphs 1 and 2a through 2g.

5. Disputes arising out of the labor standards provisions of Section IV (except paragraph 5) and Section V of these Required Contract Provisions shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the U.S. Department of Labor (DOL) as set forth in 29 CFR 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the DOL, or the contractor's employees or their representatives.

6. **Selection of Labor:** During the performance of this contract, the contractor shall not:

a. discriminate against labor from any other State, possession, or territory of the United States (except for employment preference for Appalachian contracts, when applicable, as specified in Attachment A), or

b. employ convict labor for any purpose within the limits of the project unless it is labor performed by convicts who are on parole, supervised release, or probation.

II. NONDISCRIMINATION

(Applicable to all Federal-aid construction contracts and to all related subcontracts of $10,000 or more.)

1. **Equal Employment Opportunity:** Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630 and 41 CFR 60) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The Equal Opportunity Construction Contract Specifications set forth under 41 CFR 60-4.3 and the provisions of the American Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the State highway agency (SHA) and the Federal Government in carrying out EEO obligations and in their review of his/her activities under the contract.

b. The contractor will accept as his operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, preapprenticeship, and/or on-the-job training."

2. **EEO Officer:** The contractor will designate and make known to the SHA contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active contractor program of EEO and who must be assigned adequate authority and responsibility to do so.

3. **Dissemination of Policy:** All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minority group employees.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. **Recruitment:** When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed

in publications having a large circulation among minority groups in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minority group applicants. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority group applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, he is expected to observe the provisions of that agreement to the extent that the system permits the contractor's compliance with EEO contract provisions. (The DOL has held that where implementation of such agreements have the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Executive Order 11246, as amended.)

c. The contractor will encourage his present employees to refer minority group applicants for employment. Information and procedures with regard to referring minority group applicants will be discussed with employees.

5. **Personnel Actions:** Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with his obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of his avenues of appeal.

6. **Training and Promotion:**

a. The contractor will assist in locating, qualifying, and increasing the skills of minority group and women employees, and applicants for employment.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision.

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of minority group and women employees and will encourage eligible employees to apply for such training and promotion.

7. **Unions:** If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use his/her best efforts to obtain the cooperation of such unions to increase opportunities for minority groups and women within the unions, and to effect referrals by such unions of minority and female employees. Actions by the contractor either directly or through a contractor's association acting as agent will include the procedures set forth below:

a. The contractor will use best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority group members and women for membership in the unions and increasing the skills of minority group employees and women so that they may qualify for higher paying employment.

b. The contractor will use best efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the SHA and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of minority and women referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minority group persons and women. (The DOL has held that it shall be no excuse that the union with which the contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority employees.) In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the SHA.

8. **Selection of Subcontractors, Procurement of Materials and Leasing of Equipment:** The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment.

a. The contractor shall notify all potential subcontractors and suppliers of his/her EEO obligations under this contract.

b. Disadvantaged business enterprises (DBE), as defined in 49 CFR 23, shall have equal opportunity to compete for and perform subcontracts which the contractor enters into pursuant to this contract. The contractor will use his best efforts to solicit bids from and to utilize DBE subcontractors or subcontractors with meaningful minority group and female representation among their employees. Contractors shall obtain lists of DBE construction firms from SHA personnel.

c. The contractor will use his best efforts to ensure subcontractor compliance with their EEO obligations.

9. **Records and Reports:** The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the SHA and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women;

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees; and

(4) The progress and efforts being made in securing the services of DBE subcontractors or subcontractors with meaningful minority and female representation among their employees.

b. The contractors will submit an annual report to the SHA

each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. If on-the job training is being required by special provision, the contractor will be required to collect and report training data.

III. NONSEGREGATED FACILITIES

(Applicable to all Federal-aid construction contracts and to all related subcontracts of $10,000 or more.)

a. By submission of this bid, the execution of this contract or subcontract, or the consummation of this material supply agreement or purchase order, as appropriate, the bidder, Federal-aid construction contractor, subcontractor, material supplier, or vendor, as appropriate, certifies that the firm does not maintain or provide for its employees any segregated facilities at any of its establishments, and that the firm does not permit its employees to perform their services at any location, under its control, where segregated facilities are maintained. The firm agrees that a breach of this certification is a violation of the EEO provisions of this contract. The firm further certifies that no employee will be denied access to adequate facilities on the basis of sex or disability.

b. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, timeclocks, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive, or are, in fact, segregated on the basis of race, color, religion, national origin, age or disability, because of habit, local custom, or otherwise. The only exception will be for the disabled when the demands for accessibility override (e.g. disabled parking).

c. The contractor agrees that it has obtained or will obtain identical certification from proposed subcontractors or material suppliers prior to award of subcontracts or consummation of material supply agreements of $10,000 or more and that it will retain such certifications in its files.

IV. PAYMENT OF PREDETERMINED MINIMUM WAGE

(Applicable to all Federal-aid construction contracts exceeding $2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural minor collectors, which are exempt.)

1. **General:**

a. All mechanics and laborers employed or working upon the site of the work will be paid unconditionally and not less often than once a week and without subsequent deduction or rebate on any account [except such payroll deductions as are permitted by regulations (29 CFR 3) issued by the Secretary of Labor under the Copeland Act (40 U.S.C. 276c)] the full amounts of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment. The payment shall be computed at wage rates not less than those contained in the wage determination of the Secretary of Labor (hereinafter "the wage determination") which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor or its subcontractors and such laborers and mechanics. The wage determination (including any additional classifications and wage rates conformed under paragraph 2 of this Section IV and the DOL poster (WH-1321) or Form FHWA-1495) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers. For the purpose of this Section, contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act (40 U.S.C. 276a) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of Section IV, paragraph 3b, hereof. Also, for the purpose of this Section, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in paragraphs 4 and 5 of this Section IV.

b. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein, provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed.

c. All rulings and interpretations of the Davis-Bacon Act and related acts contained in 29 CFR 1, 3, and 5 are herein incorporated by reference in this contract.

2. **Classification:**

a. The SHA contracting officer shall require that any class of laborers or mechanics employed under the contract, which is not listed in the wage determination, shall be classified in conformance with the wage determination.

b. The contracting officer shall approve an additional classification, wage rate and fringe benefits only when the following criteria have been met:

(1) the work to be performed by the additional classification requested is not performed by a classification in the wage determination;

(2) the additional classification is utilized in the area by the construction industry;

(3) the proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination; and

(4) with respect to helpers, when such a classification prevails in the area in which the work is performed.

c. If the contractor or subcontractors, as appropriate, the laborers and mechanics (if known) to be employed in the additional classification or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the DOL, Administrator of the Wage and Hour Division, Employment Standards Administration, Washington, D.C. 20210. The Wage and Hour Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

d. In the event the contractor or subcontractors, as appropriate, the laborers or mechanics to be employed in the additional classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. Said Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary

e. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 2c or 2d of this Section IV shall be paid to all workers performing work in the additional classification from the first day on which work is performed in the classification.

3. **Payment of Fringe Benefits:**

a. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor or subcontractors, as appropriate, shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly case equivalent thereof.

b. If the contractor or subcontractor, as appropriate, does not make payments to a trustee or other third person, he/she may consider as a part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided, that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

4. **Apprentices and Trainees (Programs of the U.S. DOL) and Helpers:**

a. Apprentices:

(1) Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the DOL, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau, or if a person is employed in his/her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State apprenticeship agency (where appropriate) to be eligible for probationary employment as an apprentice.

(2) The allowable ratio of apprentices to journeyman-level employees on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any employee listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate listed in the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor or subcontractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman-level hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

(3) Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator for the Wage and Hour Division determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

(4) In the event the Bureau of Apprenticeship and Training, or a State apprenticeship agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor or subcontractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the comparable work performed by regular employees until an acceptable program is approved.

b. Trainees:

(1) Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the DOL, Employment and Training Administration.

(2) The ratio of trainees to journeyman-level employees on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(3) Every trainee must be paid at not less than the rate specified in the approved program for his/her level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman-level wage rate on the wage determination which provides for less than full fringe benefits for apprentices, in which case such trainees shall receive the same fringe benefits as apprentices.

(4) In the event the Employment and Training Administration withdraws approval of a training program, the contractor or subcontractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Helpers:

Helpers will be permitted to work on a project if the helper classification is specified and defined on the applicable wage determination or is approved pursuant to the conformance procedure set forth in Section IV.2. Any worker listed on a payroll at a helper wage rate, who is not a helper under a approved definition, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed.

5. **Apprentices and Trainees (Programs of the U.S. DOT):**

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

6. **Withholding:**

The SHA shall upon its own action or upon written request of an authorized representative of the DOL withhold, or cause to be withheld, from the contractor or subcontractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements which is held by the same prime contractor, as much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the SHA contracting officer may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

7. **Overtime Requirements:**

No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers, mechanics, watchmen, or guards (including apprentices, trainees, and helpers described in paragraphs 4 and 5 above) shall require or permit any laborer, mechanic, watchman, or guard in any workweek in which he/she is employed on such work, to work in excess of 40 hours in such workweek unless such laborer, mechanic, watchman, or guard receives compensation at a rate not less than one-and-one-half times his/her basic rate of pay for all hours worked in excess of 40 hours in such workweek.

8. **Violation:**

Liability for Unpaid Wages; Liquidated Damages: In the event of any violation of the clause set forth in paragraph 7 above, the contractor and any subcontractor responsible thereof shall be liable to the affected employee for his/her unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory) for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer, mechanic, watchman, or guard employed in violation of the clause set forth in paragraph 7, in the sum of $10 for each calendar day on which such employee was required or permitted to work in excess of the standard work week of 40 hours without payment of the overtime wages required by the clause set forth in paragraph 7.

9. **Withholding for Unpaid Wages and Liquidated Damages:**

The SHA shall upon its own action or upon written request of any authorized representative of the DOL withhold, or cause to be withheld, from any monies payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph 8 above.

V. STATEMENTS AND PAYROLLS

(Applicable to all Federal-aid construction contracts exceeding $2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural collectors, which are exempt.)

1. **Compliance with Copeland Regulations (29 CFR 3):**

The contractor shall comply with the Copeland Regulations of the Secretary of Labor which are herein incorporated by reference.

2. **Payrolls and Payroll Records:**

a. Payrolls and basic records relating thereto shall be maintained by the contractor and each subcontractor during the course of the work and preserved for a period of 3 years from the date of completion of the contract for all laborers, mechanics, apprentices, trainees, watchmen, helpers, and guards working at the site of the work.

b. The payroll records shall contain the name, social security number, and address of each such employee; his or her correct classification; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalent thereof the types described in Section 1(b)(2)(B) of the Davis Bacon Act); daily and weekly number of hours worked; deductions made; and actual wages paid. In addition, for Appalachian contracts, the payroll records shall contain a notation indicating whether the employee does, or does not, normally reside in the labor area as defined in Attachment A, paragraph 1. Whenever the Secretary of Labor, pursuant to Section IV, paragraph 3b, has found that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) of the Davis Bacon Act, the contractor and each subcontractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, that the plan or program has been communicated in writing to the laborers or mechanics affected, and show the cost anticipated or the actual cost incurred in providing benefits. Contractors or subcontractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprentices and trainees, and ratios and wage rates prescribed in the applicable programs.

c. Each contractor and subcontractor shall furnish, each week in which any contract work is performed, to the SHA resident engineer a payroll of wages paid each of its employees (including apprentices, trainees, and helpers, described in Section IV, paragraphs 4 and 5, and watchmen and guards engaged on work during the preceding weekly payroll period). The payroll submitted shall set out accurately and completely all of the information required to be maintained under paragraph 2b of this Section V. This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal stock number 029-005-0014-1), U.S. Government Printing Office, Washington, D.C. 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors.

d. Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his/her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) that the payroll for the payroll period contains the information required to be maintained under paragraph 2b of this Section V and that such information is correct and complete;

(2) that such laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in the Regulations, 29 CFR 3;

(3) that each laborer or mechanic has been paid not less that the applicable wage rate and fringe benefits or cash equivalent for the classification of worked performed, as specified in the applicable wage determination incorporated into the contract.

e. The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 2d of this Section V.

f. The falsification of any of the above certifications may subject the contractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 231.

g. The contractor or subcontractor shall make the records required under paragraph 2b of this Section V available for inspection, copying, or transcription by authorized representatives of the SHA, the FHWA, or the DOL, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the SHA, the FHWA, the DOL, or all may, after written notice to the contractor, sponsor, applicant, or owner, take such actions as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

VI. RECORD OF MATERIALS, SUPPLIES, AND LABOR

1. On all Federal-aid contracts on the National Highway System, except those which provide solely for the installation of protective devices at railroad grade crossings, those which are constructed on a force account or direct labor basis, highway beautification contracts, and contracts for which the total final construction cost for roadway and bridge is less than $1,000,000 (23 CFR 635) the contractor shall:

a. Become familiar with the list of specific materials and supplies contained in Form FHWA-47, "Statement of Materials and Labor Used by Contractor of Highway Construction Involving Federal Funds," prior to the commencement of work under this contract.

b. Maintain a record of the total cost of all materials and supplies purchased for and incorporated in the work, and also of the quantities of those specific materials and supplies listed on Form FHWA-47, and in the units shown on Form FHWA-47.

c. Furnish, upon the completion of the contract, to the SHA resident engineer on Form FHWA-47 together with the data required in paragraph 1b relative to materials and supplies, a final labor summary of all contract work indicating the total hours worked and the total amount earned.

2. At the prime contractor's option, either a single report covering all contract work or separate reports for the contractor and for each subcontract shall be submitted.

VII. SUBLETTING OR ASSIGNING THE CONTRACT

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the State. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635).

a. "Its own organization" shall be construed to include only workers employed and paid directly by the prime contractor and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of

a subcontractor, assignee, or agent of the prime contractor.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph 1 of Section VII is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the SHA contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the SHA contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the SHA has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

VIII. SAFETY: ACCIDENT PREVENTION

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the SHA contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).

IX. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, the following notice shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

NOTICE TO ALL PERSONNEL ENGAGED ON FEDERAL-AID HIGHWAY PROJECTS

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined not more that $10,000 or imprisoned not more than 5 years or both."

X. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

(Applicable to all Federal-aid construction contracts and to all related subcontracts of $100,000 or more.)

By submission of this bid or the execution of this contract, or subcontract, as appropriate, the bidder, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any facility that is or will be utilized in the performance of this contract, unless such contract is exempt under the Clean Air Act, as amended (42 U.S.C. 1857 et seq., as amended by Pub.L. 91-604), and under the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq., as amended by Pub.L. 92-500), Executive Order 11738, and regulations in implementation thereof (40 CFR 15) is not listed, on the date of contract award, on the U.S. Environmental Protection Agency (EPA) List of Violating Facilities pursuant to 40 CFR 15.20.

2. That the firm agrees to comply and remain in compliance with all the requirements of Section 114 of the Clean Air Act and Section 308 of the Federal Water Pollution Control Act and all regulations and guidelines listed thereunder.

3. That the firm shall promptly notify the SHA of the receipt of any communication from the Director, Office of Federal Activities, EPA, indicating that a facility that is or will be utilized for the contract is under consideration to be listed on the EPA List of Violating Facilities.

4. That the firm agrees to include or cause to be included the requirements of paragraph 1 through 4 of this Section X in every nonexempt subcontract, and further agrees to take such action as the government may direct as a means of enforcing such requirements.

XI. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

1. **Instructions for Certification - Primary Covered Transactions:**

(Applicable to all Federal-aid contracts - 49 CFR 29)

a. By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this

transaction for cause of default.

d. The prospective primary participant shall provide immediate written notice to the department or agency to whom this proposal is submitted if any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the department or agency to which this proposal is submitted for assistance in obtaining a copy of those regulations.

f. The prospective primary participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the nonprocurement portion of the "Lists of Parties Excluded From Federal Procurement or Nonprocurement Programs" (Nonprocurement List) which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph f of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Primary Covered Transactions

1. The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

b. Have not within a 3-year period preceding this proposal been convicted of or had a civil judgement rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph 1b of this certification; and

d. Have not within a 3-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

2. Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

2. **Instructions for Certification - Lower Tier Covered Transactions:**

(Applicable to all subcontracts, purchase orders and other lower tier transactions of $25,000 or more - 49 CFR 29)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "primary covered transaction," "participant," "person," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and

frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Covered Transactions:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XII. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

(Applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000 - 49 CFR 20)

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

3. The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

ATTACHMENT A - EMPLOYMENT PREFERENCE FOR APPALACHIAN CONTRACTS

(Applicable to Appalachian contracts only.)

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph 1c shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph 4 below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which he estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, he shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within 1 week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph 1c above.

5. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

Amendment to Required Contract Provisions (FHWA – Form 1273)
Federal-Aid Construction Contracts

NOTICE TO CONTRACTORS:

This notice hereby amends the "Required Contract Provisions – Federal-Aid Construction Contracts" (FHWA Form 1273) language as stated below .

Delete Section VI, "Record of Materials, Supplies and Labor" in its entirety. Form FHWA-47, "Statement of Materials and Labor Used by Contractor of Highway Construction Involving Federal Funds" has been discontinued.

State of Connecticut Required Contract Provisions.

SUBSTITUTION OF SECURITIES FOR RETAINAGES ON STATE CONTRACTS AND SUBCONTRACTS

The contractor is advised of the provisions of Section 3-112a of the General Statutes of the State of Connecticut, as revised which is quoted as follows:

(a) Under any contract made or awarded by the state, or by any public department or official thereof, or under any subcontract made directly thereunder with the contractor, the contractor and any subcontractor may, from time to time, withdraw the whole or any portion of the amount retained for payments to the contractor or subcontractors, as the case may be, pursuant to the terms of the contract or subcontracts, upon depositing with the Comptroller (1) United States Treasury bonds, United States Treasury notes, United States Treasury certificates of indebtedness or United States Treasury bills, or (2) bonds or notes of the state of Connecticut or (3) bonds of any political subdivision in the state of Connecticut. No amount shall be withdrawn in excess of the market value of the securities at the time of deposit or of the par value of such securities, whichever is lower.

(b) The Comptroller shall, on a regular basis, collect all interest or income on the obligations so deposited and shall pay the same, when and as collected, to the contractor and the subcontractors who deposited the obligations. If the deposit is in the form of coupon bonds, the Comptroller shall deliver each coupon as it matures to the contractor and the subcontractors.

(c) Any amount deducted by the state, or by any public department or official thereof, pursuant to the terms of the contract, and subcontracts made directly thereunder with the contractor, from the retainages due the contractor and said subcontractors, shall be deducted, first from that portion of the retainages for which no security has been substituted, then from the proceeds of any deposited security. In the latter case, the contractor and the subcontractors shall be entitled to receive interest, coupons or income only from those securities which remain after such amount has been deducted.

1. Non-discrimination. References in this section to "contract" shall mean this Contract and references to "contractor" shall mean the Contractor.

(a) The following subsections are set forth here as required by section 4a-60 of the Connecticut General Statutes:

(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, 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. 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, 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; (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 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 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 sections 46a-68e and 46a-68f and with each regulation or relevant order issued by said commission pursuant to sections 46a-56, 46a-68e and 46a-68f; (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 section 46a-56.

(b) 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 project.

(c) "Minority business enterprise" means any small contractor or supplier of materials fifty-one per cent 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 section 32-9n; and "good faith" means that degree of diligence which a reasonable person would exercise in the performance of legal duties and obligations. "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.

(d) 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.

(e) The contractor shall develop and maintain adequate documentation, in a manner prescribed by the commission, of its good faith efforts.

(f) The contractor shall include the provisions of sections (a) and (b) above 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 section 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.

(g) The following subsections are set forth here as required by section 4a-60a of the Connecticut General Statutes:

(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 of 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 section 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 section 46a-56.

(h) The contractor shall include the provisions of section (g) above 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 section 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.

(i) For the purposes of this entire Non-Discrimination section, "contract" includes any extension or modification of the contract, "contractor" includes any successors or assigns of the contractor, "marital status" means being single, married as recognized by the state of Connecticut, widowed, separated or divorced, and "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. For the purposes of this section, "contract" does 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).

NONDISCRIMINATION (SEXUAL ORIENTATION)

(a) Pursuant to Section 4a-60a of the Connecticut General Statutes, (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 of 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 section 46a-56 of the general statutes; (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 section 46a-56 of the general statutes.

(b) The contractor shall include the provisions of subsection (a) 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 section 46a-56 of the general statutes; 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 interest of the state and the state may so enter.

RESIDENTS' PREFERENCE IN WORK ON OTHER PUBLIC FACILITIES

The Contractor shall comply with the provisions of Section 31-52a of the General Statutes of the State of Connecticut, Revision of 1985, a part of which is quoted as follows:

(b) Each contract for any such project covered by this section under the supervision of the state or any of its agents shall contain the following provision: "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."

CONSTRUCTION, ALTERATION OR REPAIR OF PUBLIC WORKS PROJECTS BY THE STATE OR POLITICAL SUBDIVISION

The contractor shall comply with the provisions of Section 31-53 of the General Statutes of the State of Connecticut, as revised, a part of which is quoted as follows:

(a) Each contract for the construction, remodeling, refinishing, refurbishing rehabilitation, alteration or repair of any public works project by the state or any of its agents, or by any political subdivision of the state or any of its agents, shall contain the following provision: "The wages paid on an hourly basis to any mechanic, laborer or workman employed upon the work herein contracted to be done and the amount of payment or contribution paid or payable on behalf of each such employee to any employee welfare fund, as defined in subsection (h) of this section, 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 employees to any such employee welfare fund shall pay to each employee as part of his wages the amount of payment or contribution for his classification on each pay day."

LIMITATION ON AWARDING OF CONTRACTS

The contractor shall comply with the provisions of Section 31-53a of the General Statutes of the State of Connecticut, as revised, a part of which is quoted as follows:

2) No general contractor that enters into a contract with the state or any of its agents, or with any political subdivision of the state or any of its agents, for the construction, remodeling, refinishing, refurbishing, rehabilitation, alteration or repair of any public works project subject to the provisions of section 31-53, as amended, or for any state highway project that falls under the provisions of section 31-54, shall award any work under such contract to the persons or firms appearing on the list distributed by the Labor Commissioner pursuant to subsection (a) of this section or to any firm, corporation, partnership or association in which such persons or firms have an interest until a period of up to three years, as determined by the Labor Commissioner, has elapsed from the date of publication of the list containing the names of such persons or firms.

(3) Prior to performing any work under a contract for the construction, remodeling, refinishing, refurbishing, rehabilitation, alteration or repair of any public works project subject to the provisions of section 31-53, as amended, or for any state highway project that falls under the provisions of section 31-54, each person, firm, corporation, partnership or association engaged by a general contractor to perform such work shall submit a sworn affidavit to the general contractor attesting that such person, firm, corporation, partnership or association does not hold an interest of ten per cent or greater in a firm appearing on the list distributed by the Labor Commissioner pursuant to subsection (a) of this section. The receipt and retention by a general contractor of such sworn affidavit shall fulfill the general contractor's obligation under subdivision (2) of this subsection.

RATE OF WAGES FOR WORK ON STATE HIGHWAYS

The contractor shall comply with the provisions of Section 31-54 of the General Statutes of the State of Connecticut, as revised, which is quoted as follows:

The Labor Commissioner shall hold a hearing at any required time to determine the prevailing rate of wages upon any highway contract within any specified area on an hourly basis and the amount of payment or contributions paid or payable on behalf of each employee to any employee welfare fund, as defined in section 31-53, upon any classifications of skilled, semiskilled and ordinary labor. Said commissioner shall determine the prevailing rate of wages on an hourly basis and the amount of payment or contributions paid or payable on behalf of each employee to any employee welfare fund, as defined in section 31-53, in each locality where any highway or bridge is to be constructed, and the Commissioner of Transportation shall include such rate of wage on an hourly basis and the amount of payment or contributions paid or payable on behalf of each employee to any employee welfare fund, as defined in section 31-53, or in lieu thereof, in cash as part of wages each pay day, for each classification of labor in the proposal for the contract and in the contract. The rate and the amount so established shall, at all times, be considered as the minimum rate of wage on an hourly basis and the amount of payment or contributions to an employee welfare fund, or cash in lieu thereof, for the classification for which it was established. Any contractor who pays any person at a lower rate of wage on an hourly basis or the amount of payment or contributions paid or payable on behalf of each employee to any employee welfare fund, as defined in section 31-53, or where he is not obligated by any agreement to make payment or contributions to the employee welfare funds, as defined in section 31-53, and fails to pay the amount of such payment or contributions directly to the employee as part of his wages each pay day, than that so established for the classifications of work specified in any such contract shall be fined not more than two hundred dollars for each offense. The provisions of this section shall apply only to state highways and bridges on state highways.

ANNUAL ADJUSTMENTS TO PREVAILING WAGES

The contractor shall comply with the provisions of Public Act 02-69 which reads, as follows:

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 provision 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 employee, effective each July first.

AWARDING OF CONTRACTS TO OCCUPATIONAL SAFETY AND HEALTH LAW VIOLATORS PROHIBITED

The contractor shall comply with the provisions of Section 31-57b of the General Statutes of the State of Connecticut, as revised, which is quoted as follows:

No contract shall be awarded by the State or any of its political subdivisions to any person or firm or any firm, corporation, partnership or association in which such persons or firms have an interest (1) which has been cited for three or more wilful or serious violations of any occupational safety and health act or of any standard, order or regulation promulgated pursuant to such act, during the three-year period preceding the bid, provided such violations were cited in accordance with the provisions of any state occupational safety and health act or the Occupational Safety and Health Act of 1970, and not abated within the time fixed by the citation and such citation has not been set aside following appeal to the appropriate agency or court having jurisdiction or (2) which has received one or more criminal convictions related to the injury or death of any employee in the three-year period preceding the bid. Any person who knowingly provides false information concerning the information required pursuant to this section shall be assessed a civil penalty of not less than five hundred dollars nor more than five thousand dollars and shall be disqualified from bidding on or participating in a contract with the state or any of its political subdivisions for five years

from the date of the final determination that the information is false. Any political subdivision or any state agency receiving false information pursuant to this section shall notify the Commissioner of Administrative Services and, upon receipt of such notice, the commissioner shall conduct a hearing in accordance with the provisions of chapter 54. Upon a determination that false information was provided, the commissioner shall impose a civil penalty in accordance with the provisions of this section. Such civil penalty shall be paid to the Treasurer or to an official of the political subdivision, as the case may be. Any civil penalty imposed pursuant to this section may be collected in a civil proceeding by any official of a political subdivision authorized to institute civil actions or, in the case of the state, by the attorney general, upon complaint of the Commissioner of Administrative Services.

CONSTRUCTION SAFETY AND HEALTH STANDARDS

It is a condition of this contract, and shall be made a condition of each subcontract entered into pursuant to this contract, that the contractor and any subcontractor shall not require any laborer or mechanic employed in performance of the contract to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health or safety, as determined under construction safety and health standards (Title 29, Code of Federal Regulations, Part 1926, formerly Part 1518, as revised from time to time), promulgated by the United States Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (83 Stat. 96).

SERVICE OF PROCESS

The successful bidder, 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.

AMERICANS WITH DISABILITIES ACT OF 1990

This clause 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.

EXECUTIVE ORDER NO. THREE

This contract is subject to the provisions of Executive Order No. Three of Governor Thomas J. Meskill promulgated June 16, 1971 and, as such, this contract may be cancelled, terminated or suspended by the State Labor Commissioner for violation of, or noncompliance with said Executive Order No. Three, or any state or federal law concerning nondiscrimination, notwithstanding that the Labor Commissioner is not a party to this contract. The parties to this contract as part of the consideration hereof, agree that Executive Order No. Three is incorporated herein by reference and made a part hereof. The parties agree to abide by said Executive Order and agree that the State Labor Commissioner shall have continuing jurisdiction in respect to contract performance in regard to nondiscrimination, until the contract is completed or terminated prior to completion.

EXECTUTIVE ORDER 7C

This provision and its subsections are included in this contract in accordance with Section 6 of Governor M. Jodi Rell's Executive Order No. 7C: The State Contracting Standards Board (the "Board") may review the contract and recommend to the state contracting agency termination of the contract for cause. For the purpose of this Section, "for cause" means: (1) a violation of the State Ethics Code (Chapter 10 of the general statutes) or section 4a-100 of the general statutes or (2) wanton or reckless disregard of any state contracting and procurement process by any person substantially involved in such contract or state contracting agency. The Board shall provide the results of its review, together with its recommendations, to the state contracting agency and any other affected party in accordance with the notice provisions in the contract no later than fifteen (15) days after the Board finalizes its recommendation. The state contracting agency shall consider the recommendations of the Board and act in accordance with the contract and applicable law.

The contractor agrees to satisfy the requirements of Executive Order 1 and Section 10(a) of Executive Order No. 7C of Governor M. Jodi Rell and § 4-252 of the Connecticut General Statutes, as amended, including the delivery of the certification of the contractor with respect to gifts and lawful campaign contributions and other matters required thereunder, which form of certificate is available on the Website of the Office of Policy and Management at www.opm.state.ct.us. If this is a multi-year contract, then, so long as the contract remains in effect, the contractor shall provide the State with an annual update of the aforesaid certification on each anniversary of the effective date of such contract.

EXECUTIVE ORDER NO. 14

When applicable, this contract is subject to the provisions of Executive Order No. 14 of Governor M. Jodi Rell promulgated April 17, 2007 and, as such, the contract may be canceled, terminated or suspended by the state for violation of or noncompliance with said Executive Order 14. The parties to this contract, as part of the consideration hereof, agree that said Executive Order No. 14 is incorporated herein by reference and made a part hereof. This Executive Order No. 14 shall be made a part of any applicable subcontracts to this Agreement. The parties agree to abide by such Executive Order.

EXECUTIVE ORDER NO. 16/VIOLENCE IN THE WORKPLACE PREVENTION

This contract is subject to the provisions of Executive Order No. 16 of Governor John G. Rowland promulgated August 4, 1999 and, as such, the contract may be canceled, terminated or suspended by the state for violation of or noncompliance with said Executive Order No. 16. The parties to this contract, as part of the consideration hereof, agree that said Executive Order No. 16 is incorporated herein by reference and made a part hereof. The parties agree to abide by such Executive Order.

EXECUTIVE ORDER NO. SEVENTEEN/LISTING ALL EMPLOYMENT OPENINGS WITH THE CONNECTICUT STATE EMPLOYMENT SERVICE

This contract is subject to the provisions of Executive Order No. Seventeen of Governor Thomas J. Meskill promulgated February 15, 1973, and, as such, this contract may be cancelled, terminated or suspended by the contracting agency or the State Labor Commissioner for violation of or noncompliance with said Executive Order No. Seventeen, notwithstanding that the Labor Commissioner may not be a party to this contract. The parties to this contract, as part of the consideration hereof, agree that Executive Order No. Seventeen is incorporated herein by reference and made a part hereof. The parties agree to abide by said Executive Order and agree that the contracting agency and the State Labor Commissioner shall have joint and several continuing jurisdiction in respect to contract performance in regard to listing all employment openings with the Connecticut State Employment Service.

EXECUTIVE ORDER NO. 18

When applicable, this contract is subject to the provisions of Executive Order No. 18 of Governor M. Jodi Rell dated February 6, 2008 and, as such, the contract may be canceled, terminated or suspended by the state for violation of or noncompliance with said Executive Order 18. The parties to this contract, as part of the consideration hereof, agree that said Executive Order No. 18 is incorporated herein by reference and made a part hereof. This Executive Order No. 18 shall be made a part of any applicable subcontracts to this Agreement. The parties agree to abide by such Executive Order.

CONNECTICUT REQUIRED CONTRACT/AGREEMENT PROVISIONS

The contractor hereby acknowledges and agrees to comply with the attached CONNECTICUT REQUIRED CONTRACT/AGREEMENT PROVISIONS entitled "Specific Equal Employment Opportunity Responsibilities", dated March 3, 2009, a copy of which is attached hereto and made a part of hereof.

A(76) AFFIRMATIVE ACTION REQUIREMENTS A (76)

It is the intent of these Affirmative Action Requirements to provide compliance standards for employee-hours in each craft utilized in the transportation construction industry on transportation construction projects. This provision affects contractors and their subcontractors while under contract with the Connecticut Department of Transportation. It is not the intent of these Affirmative Action Requirements to cause personnel displacement in order to hire qualified minorities and women. They are however designed to ensure that equal employment opportunity is being provided and discriminatory employment practices are not being exercised. The actual number of minority and female employee hours worked in each craft, compared to the labor market goals, will determine project compliance.

General Contract Provision

The contractor or subcontractor shall comply with this provision or provide adequate documentation of "good faith efforts" in attempting to comply with this provision.

The employee hours for minorities and females should be substantially uniform throughout the length of the contract for each of the trades. The time-table for meeting the project goals extends through the duration of the contract.

For the purpose of this provision, "minority" is defined as; Blacks, includes all persons having origins in any of the black racial groups; Hispanics, includes all persons of Mexican, Puerto Rican, Cuban, Central or South American, or Spanish Culture, except Portuguese; Asians, includes all persons having origins in any of the original peoples of the Far East, Southeast Asia, or Pacific Islands; and American Indians, all persons having origins in any of the original peoples of North America.

The percentage goals for minority employee-hour utilization and female employee hour utilization are based on Connecticut Labor Market statistics. The labor market goals for minorities and females are separate goals. Employees should not be counted in both the minority and female categories. The goal requirements are listed in Appendix A of this provision. The employee-hour percentages are expressed in terms of training and employment hours in proportion to the total employee-hours worked by the contractor's and/or subcontractor's entire work force in that trade or craft. The transfer of minorities, females or trainees from employer to employer, or from project to project, for the sole purpose of meeting the labor market goal, is a violation of this contract provision.

In no event may a contractor or subcontractor utilize the goals, time-tables, or affirmative action steps, required by these provisions in such a manner as to cause or result in discrimination against any person on the basis of race, color, religion, sex, age, marital status, national origin, ancestry, present or past history of mental disorder, mental retardation, learning disability or physical disability, including, but not limited to, blindness.

Compliance and Enforcement

Contractors are responsible for informing their subcontractor(s) (regardless of tier) as to their respective obligations under these provisions. Any contractor or subcontractor who fails to meet the stipulation(s) prescribed in this provision, and/or fails to provide adequate documentation of affirmative actions and "good faith efforts", shall be deemed to be in noncompliance with this provision, as well as; Presidential Executive Order 11246 as amended, the Governor's Executive Order #3, Connecticut's EEO Special Provisions and Equal Opportunity Clause of its contract.

If the contractor and/or subcontractor is deemed to be in non-compliance, then he shall be subject to sanctions and penalties for violation of Connecticut's Specific Equal Employment Opportunity Responsibilities Contract Provision (April 1994), Presidential Executive Order 11246 as amended and/or the Governor's Executive Order #3. These sanctions and penalties shall include but not be limited to suspension, termination, and/or cancellation of existing contracts and/or subcontracts (subcontract agreements).

Procedures

In determining whether a contractor or subcontractor has met the goals, the agency will consider the contractor's and/or subcontractor's utilization of minority and female participation per craft (hourly). If the contractor or subcontractor meets the goals, or can demonstrate and document that every good faith effort was made to meet the goals, the contractor or subcontractor shall be presumed to be in compliance with this contract provision. Formal sanctions or proceedings will not be instituted unless the agency otherwise determines that the contractor or subcontractor is in violation of this provision.

In the event a noncompliance finding is made, the contractor shall receive an informal letter informing him/her of the noncompliance finding and a request for corrective action relative to this finding. If no response is received, or if the response is unsatisfactory, the contractor shall receive a registered show-cause notice requesting specific action to be taken by the contractor, and an explanation of what actions may be taken against the contractor if a satisfactory solution is not reached.

If a show cause notice is issued, then the formal process begins, and proceeds with such formal actions as prescribed by the sanctions and penalties described herein; the burden of proving the

noncompliance of these provisions lies with the agency. However, the contractor's or subcontractor's failure to meet his goals shall shift to him to present evidence to show that he has met the "good faith effort" requirement of these provisions.

In respect to matters not covered in this provision, nothing herein is intended to relieve any contractor or subcontractor from compliance with all applicable federal and state laws, regulations, Executive Orders and/or Special Provisions concerning equal employment opportunity, affirmative action, nondiscrimination and related subjects during the term of its contract on this project.

Records and Reports

It is required of the successful bidder and each approved subcontractor to submit to the Division of Contract Compliance for review and approval an affirmative action plan. On federal-aid projects, this requirement (Affirmative Action Plan) is waived if the contract or subcontract is under $10,000 (unless an Affirmative Action Plan is determined necessary by the contracting agency). On completely state-funded projects, the Affirmative Action Plan requirement is waived on contracts or subcontracts under $5,000 (unless an Affirmative Action Plan is determined necessary by the contracting agency).

This provision will supplement Connecticut's Required Contract Provision, entitled "Specific Equal Employment Opportunity Responsibilities" in all contracts including federally-aided contracts as applicable.

APPENDIX A

(LABOR MARKET GOALS)

LABOR MARKET AREA GOAL	% MINORITY GOAL	% FEMALE
Bridgeport Ansonia-Beacon Falls-Bridgeport- Derby-Easton-Fairfield-Milford- Monroe-Oxford-Seymour-Shelton- Stratford-Trumbull	14	6.9
Danbury Bethel-Bridgewater-Brookfield- Danbury-Kent-New Fairfield- New Milford-Newtown-Redding- Ridgefield-Roxbury-Sherman- Washington	4	6.9
Danielson Brooklyn-Eastford-Hampton- Killingly-Pomfret-Putnam- Scotland-Sterling-Thompson- Voluntown-Union-Woodstock	2	6.9
Hartford Andover-Ashford-Avon-Barkhamsted- Berlin-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-Harwington-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	15	6.9
Lower River Chester-Deep River-Essex-Lyme- Westbrook	2	6.9

LABOR MARKET AREA GOAL	% MINORITY GOAL	% FEMALE
New Haven Bethany-Branford-Cheshire- Clinton-East Haven-Guilford- Hamden-Killingworth-Madison- Meriden-New Haven-No.Branford- North Haven-Orange-Wallingford- West Haven-Woodbridge	14	6.9
New London 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 RI	8	6.9
Stamford Darien-Greenwich-New Canaan- Norwalk-Stamford-Weston- Westport-Wilton	17	6.9
Torrington Canaan-Colebrook- Cornwall-Goshen-Hartland-Kent- Litchfield-Morris- Norfolk-North Canaan-Salisbury- Sharon-Torrington-Warren	2	6.9
Waterbury Bethlehem-Middlebury-Naugatuck- Prospect-Southbury-Thomaston- Waterbury-Watertown-Wolcott- Woodbur	10	6.9

Privatized Public Records

If applicable, the Department is entitled to receive a copy of records and files related to the performance of the Contractor under this Construction Contract, and such records and files shall be subject to the Freedom of Information Act and may be disclosed by the Department pursuant to the Freedom of Information Act. No request to inspect or copy such records or files shall be valid unless the request is made to the Department in accordance with the Freedom of Information Act. Any compliant 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 Section 1-205 and 1-206 of the Connecticut General Statutes.

The terminology "If applicable," precedes the language above to account for any construction contracts initially having a value of less than Two Million Five Hundred Thousand Dollars ($2,500,000), but having the potential, through change orders, to exceed the cited threshold.

Oversight of Large State Contracts

The following clause is applicable to those contracts with an aggregate value of Five Million Dollars ($5,000,000) or more.

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 state or quasi-public agency (if applicable) or the Auditors of Public Accounts or the Attorney General under the provisions of Connecticut General Statutes Section 4-61dd(a), the for a civil penalty of not more than Five Thousand Dollars for each offense, up to a maximum of twenty percent of the value of the contract. Each violation shall be a separate and distinct offense and in contractor shall be liable 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 executive head of the state or quasi-public agency (if applicable) may request the Attorney General to bring a civil action in the superior court for the judicial district of Hartford to seek imposition and recovery of such civil penalty.

The contractor shall post a notice of the provisions of this section in a conspicuous place which is readily available for viewing by the employees of the Contractor.

Construction Safety and Health Course

The contractor shall comply with the provisions of section 31-53b of the General Statutes of the State of Connecticut as revised which is quoted as follows.

(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 any 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'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 of the general statutes, 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.

CIVIL RIGHTS REVISIONS - TITLE VI CONTRACTOR ASSURANCE

As a condition to receiving federal financial assistance under the Contract, if any, the contractor shall comply with Title VI of the Civil Rights Act of 1964 (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, all of which are hereby made a part of this Contract.

November 1980

CONNECTICUT

REQUIRED CONTRACT PROVISION

STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY

CONSTRUCTION CONTRACT SPECIFICATION

(EXECUTIVE ORDER 11246)

1. Appendix A and Appendix B referred to below and attached hereto express goals and timetables for the utilization of females and minorities respectively on all federally assisted construction projects advertised by the Connecticut Department of Transportation.

   Appendix A establishes the goal for female utilization in all crafts statewide. Appendix B refers to minority utilization for each trade in designated areas.

2. The goals for minority and female participation, expressed in percentage terms for the contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

FEMALES	MINORITIES
See Appendix A	See Appendix B

   These goals are applicable to all the Contractor's construction work (whether or not it is Federal or Federally assisted) 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 such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and non-federally involved construction.

3. The Contractor's compliance with the Executive Order and the regulations in 41-CFR Part 60-4 shall be based on its implementation of the specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3 (a) and its efforts to meet the goals established for the geographical area where the contract is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from contractor to contractor or from project to project for the sole purpose of meeting the contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

4. As used in these specifications:

   a. "Covered area," means the geographical area described in the solicitation from which this contract resulted.

   b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any persons to whom the Director delegates authority.

   c. "Employer Identification Number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.

   d. "Minority" includes:
      1. Black (all persons having origins in any of the Black African racial groups not of Hispanic origin):
      2. Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or Origin, regardless of race):
      3. Asian or Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands: and
      4. American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

5. 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.

6. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's of subcontractor's failure to take good faith efforts to achieve the plan goals and timetables.

7. The Contractor shall implement the specific affirmative action standards provided in paragraphs 10a through p of these specifications. The goals set forth in the solicitation from which this contract resulted area expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered Construction contractors performing construction work in geographical areas where they do not have a federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form and such notices may be obtained from any Office of Federal Contract Compliance Programs (OFCCP) Office or from Federal procurement contracting officers. The Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

8. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractors obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.

9. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to training programs approved by the U.S. Department of Labor.

10. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

    a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other onsite supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities:

    b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

c. Maintain a current file of the names, addresses and telephone numbers of each minority and female of the street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefore, along with whatever additional actions the Contractor may have taken.

d. Provide immediate notification to the Director when the Union or Unions with which the Contractor has a collective bargaining agreement has not been referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the Union referral process has impeded the Contractor's efforts to meet its own obligations.

e. Develop on the job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 10b above.

f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting it EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO Policy on bulletin boards accessible to all employees at each location where construction work is performed.

g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment, decisions including specific review of these items with onsite supervisory personnel such as Superintendents, General Forman, etc. prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed and disposition of the subject matter.

h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO Policy with other Contractors and

Subcontractors with whom the Contractor does or anticipates doing business.

i. Direct its recruitment efforts, both oral and written, to minority female and community organizations, to school with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's workforce..

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.

l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

m. Ensure that minority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that he EEO policy and the Contractor's obligations under these specifications are being carried out.

n. Ensure that all facilities and company activities are nonsegregated except that separate or single user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontractors from minority and female construction contractors and suppliers, including circulation of solicitation to minority and female contractor associations and other business associations.

p. Conduct a review, at least annually of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

11. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (10 a through p). The efforts of a contractor association, joint contractor union, contractor community, or other similar group of which the contractor is a member and participant, may

be associated as fulfilling any one or more of its obligations under 10 a through p of these Specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligations to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

12. A single goal for minorities and separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and not-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).

13. The contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex or national origin.

14. The contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

15. The Contractor shall carry out such sanctions and penalties for violations of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 112646, as amended.

16. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 10 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in compliance with 41 CFR 60-4.8.

17. The Contractor shall designate a responsible official to monitor all employment related activities to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any,

employee identification number when assigned, social security number, race, sex, status, (e.g. mechanic, apprentice, trainee, helper, or laborer), dates of changes in statures, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

18. Nothing herein provided shall be construed as a limitation upon the application of their laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g. those under the Public Works Employment Act of 1977 and the Community Development Black Grant Program.)

19. The Director of the Office of Federal Contract Compliance Program, from time to time, shall issued goals and timetables for minority and female utilization which shall be based on appropriate workforces, demographic or other relevant date and which shall cover construction projects or construction contracts performed in specific geographical areas. The goals, which shall be applicable to each construction trade in a covered contractor's or subcontrator's entire workforce which is working in the area covered by the goals and timetables, shall be published as notices in the Federal Register, and shall be inserted by the contracting officers and applicants, as applicable, in the Notice required by 41 C.F.R. 60-4.2. Covered construction contractors performing construction work in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical areas where the work is being performed.

APPENDIX A and B

Until further notice, the following goals for minority utilization in each construction craft and trade shall be included in all Federal or federally assisted construction contracts and subcontracts in excess of $10,000 to be performed in the respective geographical areas. The goals are applicable to each nonexempt contractor's total on-site construction work-force, regardless of whether or not part of that work-force is performing work on Federal, federally assisted or non-federally related project, contract or subcontract.

To be used for Federal-aid contracts

GOALS

Standard Metropolitan Statistical Area (SMSA)				Minority	Female
Bridgeport – Stamford – Norwalk – Danbury				**10.2%**	**6.9%**
Bethel	Bridgeport	Brookfield	Danbury		
Darien	Derby	Easton	Fairfield		
Greenwich	Milford	Monroe	New Canaan		
New Fairfield	Newtown	Norwalk	Redding		
Shelton	Stamford	Stratford	Trumbull		
Weston	Westport	Wilton			
Hartford – Bristol – New Britain				**6.9%**	**6.9%**
Andover	Avon	Berlin	Bloomfield		
Bolton	Bristol	Burlington	Canton		
Colchester	Columbia	Coventry	Cromwell		
East Granby	East Hampton	East Hartford	East Windsor		
Ellington	Enfield	Farmington	Glastonbury		
Granby	Hartford	Hebron	Manchester		
Marlborough	New Britain	New Hartford	Newington		
Plainville	Plymouth	Portland	Rocky Hill		
Simsbury	South Windsor	Southington	Stafford		
Suffield	Tolland	Vernon	West Hartford		
Wethersfield	Willington	Windsor	Windsor Locks		
New Haven – Waterbury – Meriden				**9.0%**	**6.9%**
Beacon Falls	Bethany	Branford	Cheshire		
Clinton	East Haven	Guilford	Hamden		
Madison	Meriden	Middlebury	Naugatuck		
New Haven	North Branford	North Haven	Orange		
Prospect	Southbury	Thomaston	Wallingford		
Waterbury	Watertown	West Haven	Wolcott		
Woodbridge	Woodbury				

New London – Norwich				4.5%	6.9%
Bozrah	*East Lyme*	*Griswold*	*Groton*		
Ledyard	*Lisbon*	*Montville*	*New London*		
Norwich	*Old Lyme*	*Old Saybrook*	*Preston*		
Sprague	*Stonington*	*Waterford*			

Non SMSA ***Minority*** ***Female***

Litchfield – Windham				5.9%	6.9%
Abington	*Ashford*	*Ballouville*	*Bantam*		
Barkhamsted	*Bethlehem*	*Bridgewater*	*Brooklyn*		
Canaan	*Canterbury*	*Central Village*	*Chaplin*		
Colebrook	*Cornwall*	*Cornwall Bridge*	*Danielson*		
Dayville	*East Canaan*	*East Killingly*	*East Woodstock*		
Eastford	*Falls Village*	*Gaylordsville*	*Goshen*		
Grosvenor Dale	*Hampton*	*Harwinton*	*Kent*		
Killingly	*Lakeside*	*Litchfield*	*Moosup*		
Morris	*New Milford*	*New Preston*	*New Preston Marble Dale*		
Norfolk	*North Canaan*	*No. Grosvenordale*	*North Windham*		
Oneco	*Pequabuck*	*Pine Meadow*	*Plainfield*		
Pleasant Valley	*Pomfret*	*Pomfret Center*	*Putnam*		
Quinebaug	*Riverton*	*Rogers*	*Roxbury*		
Salisbury	*Scotland*	*Sharon*	*South Kent*		
South Woodstock	*Sterling*	*Taconic*	*Terryville*		
Thompson	*Torrington*	*Warren*	*Warrenville*		
Washington	*Washington Depot*	*Wauregan*	*West Cornwall*		
Willimantic	*Winchester*	*Winchester Center*	*Windham*		
Winsted	*Woodstock*	*Woodstock Valley*			

Department of Revenue Services
State of Connecticut
25 Sigourney Street
Hartford CT 06106-5032

(New 06/08)

CERT-141

Contractor's Exempt Purchase Certificate

General Purpose: Contractors for the repair, alteration, improvement, remodeling, or construction of real property use this certificate to purchase materials and supplies to be installed or placed in a project being performed under contract with an exempt entity. The materials and supplies must remain in the project after its completion, including tangible personal property that remains tangible personal property after its installation or placement. If the tangible personal property is not used in the manner described above, a contractor who claimed an exemption owes use tax on the total price of the tangible personal property.

Wherever the term contractor is used in this certificate, it includes subcontractors of the contractor performing a contract with an exempt entity.

Exempt entity means any person entitled to make purchases of tangible personal property exempt from sales and use taxes under the statutory authority listed below.

Statutory and Regulatory Authority: Conn. Gen. Stat. §12-412(1), (2), (5), (8), (84), (90), (92), (93), and (95); Conn. Gen. Stat. §§7-273mm, 16-344, and 32-23h; and Conn. Agencies Regs. §12-426-18.

Instructions for the Purchaser: Use this certificate for purchases of tangible personal property to be installed or placed in a project being performed under a contract with an exempt entity that will remain in the project after its completion. To qualify for the exemption from sales and use taxes, you must present this certificate to the retailer at the time of the purchase of the qualifying tangible personal property. For at least six years from the date it is issued, keep a copy of this certificate and records that substantiate the information entered on this certificate, including records to support the contractor's use of this certificate and to show the disposition of all materials or supplies so purchased.

If you are unable to designate the exact amount of materials or supplies to be installed or placed in a project being performed under contract with an exempt entity, you must estimate the amount of the purchases. You will be held strictly accountable for any use tax due the state on the purchases in the event of any use other than the permanent installation or placement of the purchases in the exempt project identified in this certificate.

Contractors are the consumers of all the tools, supplies, and equipment used in fulfilling a construction contract that are not installed or placed in the exempt job even if they are used up during the job.

Instructions for the Seller: Acceptance of this certificate, when properly completed, relieves the seller from the burden of proving that tangible personal property is not subject to sales and use taxes when the tangible personal property will be installed or placed in a project being performed under a contract with an exempt entity and will remain in the project after its completion. The certificate is valid only if taken in good faith from a contractor under contract with an exempt entity. The good faith of the seller will be questioned if the seller knows of, or should know of, facts that suggest the contractor does not intend to install or place the property in a project being performed under contract with an exempt entity.

Keep this certificate and bills or invoices to the purchaser for at least six years from the date of purchase. The bills, invoices, or records covering the purchase made under this certificate must be marked to indicate an exempt purchase was made. The words "Exempt under CERT-141" satisfy the requirement.

This certificate may be used for individual purchases, in which case the box marked "Certificate for One Purchase Only" must be checked. This certificate may also be used for a continuing line of exempt purchases for the project identified in this certificate, in which case the box marked "Blanket Certificate" must be checked. A blanket certificate remains in effect for three years unless the purchaser revokes it in writing before the period expires.

For More Information: Call Taxpayer Services at 1-800-382-9463 (Connecticut calls outside the Greater Hartford calling area only) or 860-297-5962 (from anywhere). **TTY, TDD, and Text Telephone users** only may transmit inquiries anytime by calling 860-297-4911. Visit the Department of Revenue Services (DRS) website at **www.ct.gov/DRS** to preview and download forms and publications.

Name of Exempt Entity	Address	CT Tax Registration Number (If none, explain.)	Federal Employer ID #
			CT Exemption Permit Number (If any)

Address of Project

Type of Exempt Entity (Check one.)

- ☐ State Government
- ☐ Federal Government
- ☐ Town
- ☐ School
- ☐ Fire Department
- ☐ Police Department
- ☐ Library
- ☐ Other (Explain) _____

Name of Purchaser	Address	CT Tax Registration Number (If none, explain.)	Federal Employer ID #
Name of Seller	Address	CT Tax Registration Number (If none, explain.)	Federal Employer ID #

Provide a written description of each item purchased.

Check one box: ☐ Blanket Certificate ☐ Certificate for One Purchase Only

Declaration by Purchaser

The item(s) described above are tangible personal property to be installed or placed in a project being performed under contract with the exempt entity identified above and will remain in the project after its completion. I declare that the purchaser named above is a contractor under contract with the exempt entity or a subcontractor of the contractor. I acknowledge that the purchaser will be liable for Connecticut use tax, plus applicable penalty and interest as of the date of purchase, on the total purchase price of the property if any of the requirements for the exemption are not present or are not met.

Declaration: I declare under penalty of law that I have examined this document (including any accompanying schedules and statements) and, to the best of my knowledge and belief, it is true, complete, and correct. I understand the penalty for willfully delivering a false return or document to DRS is a fine of not more than $5,000 or imprisonment for not more than five years, or both.

_____
Name of Purchaser

By: _____ _____ _____
Authorized Signature Title Date

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

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

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.

STATE OF CONNECTICUT

BY HIS EXCELLENCY

THOMAS J. MESKILL

GOVERNOR

EXECUTIVE ORDER NO. THREE

WHEREAS, sections 4-61d(b) and 4-114a of the 1969 supplement to the general statutes require nondiscrimination clauses in state contracts and subcontracts for construction on public buildings, other public works and goods and services, and

WHEREAS, section 4-61e(c) of the 1969 supplement to the general statutes requires the labor department to encourage and enforce compliance with this policy by both employers and labor unions, and to promote equal employment opportunities, and

WHEREAS, the government of this state recognizes the duty and desirability of its leadership in providing equal employment opportunity, by implementing these laws,

NOW, THEREFORE, I, THOMAS J. MESKILL, Governor of the State of Connecticut, acting by virtue of the authority vested in me under section twelve of article fourth of the constitution of the state, as supplemented by section 3-1 of the general statutes, do hereby ORDER and DIRECT, as follows, by this Executive Order:

I

The labor commissioner shall be responsible for the administration of this Order and shall adopt such regulations as he deems necessary and appropriate to achieve the purposes of this Order. Upon the promulgation of this Order, the commissioner of finance and control shall issue a directive forthwith to all state agencies, that henceforth all state contracts and subcontracts for construction on public buildings, other public works and goods and services shall contain a provision rendering such contract or subcontract subject to this Order, and that such contract or subcontract may be cancelled, terminated or suspended by the labor commissioner for violation of or noncompliance with this Order or state or federal laws concerning nondiscrimination, notwithstanding that the labor commissioner is not a party to such contract or subcontract.

II

Each contractor having a contract containing the provisions prescribed in section 4-114a of the1969 supplement to the general statutes, shall file, and shall cause each of his subcontractors to file, compliance reports with the contracting agency or the labor commissioner, as may be directed such reports shall be filed within such times and shall contain such information as to employment policies and statistics of the contractor and each subcontractor, and shall be in such form as the labor commissioner may prescribe. Bidders or prospective contractors or

subcontractors may be required to state whether they have participated in any previous contract subject to the provisions of this Order or any preceding similar Order, and in that event to submit on behalf of themselves and their proposed subcontractors compliance reports prior to or as an initial part of their bid or negotiation of a contract.

III

Whenever the contractor or subcontractor has a collective bargaining agreement or other contract or understanding with a labor organization or employment agency as defined in section 31-122 of the general statutes, the compliance report shall identify the said organization or agency and the contracting agency or the labor commissioner may require a compliance report to be filed with the contracting agency or the labor commissioner, as may be directed, by such organization or agency, signed by an authorized officer or agent of such organization or agency, with supporting information, to the effect that the signer's practices and policies, including but not limited to matters concerning personnel, training, apprenticeship, membership, grievance and representation, and upgrading, do not discriminate on grounds of race, color, religious creed, age, sex or national origin, or ancestry of any individual, and that the signer will either affirmatively cooperate in the implementation of the policy and provisions of this Order, or that it consents and agrees that recruitment, employment and the terms and conditions of employment under the proposed contract shall be in accordance with the purposes and provisions of the Order.

IV

The labor commissioner may by regulation exempt certain classes of contracts, subcontracts or purchase orders from the implementation of this Order, for standard commercial supplies or raw materials, for less than specified amounts of money or numbers of workers or for subcontractors below a specified tier. The labor commissioner may also provide by regulation for the exemption of facilities of a contractor which are in all respects separate and distinct from activities of the contractor related to the performance of the state contract, provided only that such exemption will not interfere with or impede the implementation of this Order, and provided further, that in the absence of such an exemption, all facilities shall be covered by the provisions of this Order.

V

Each contracting agency shall be primarily responsible for obtaining compliance with the regulations of the labor commissioner with respect to contracts entered into by such agency or its contractors. All contracting agencies shall comply with the regulations of the labor commissioner in discharging their primary responsibility for securing compliance with the provisions of contracts and otherwise with the terms of this Order and of the regulations of the labor commissioner issued pursuant to this Order. They are directed to cooperate with the labor commissioner and to furnish the labor commissioner such information and assistance as he may require in the performance of his functions under this Order. They are further directed to appoint or designate from among the personnel of each agency, compliance officers, whose duty shall be to seek compliance with the objectives of this Order by conference, conciliation, mediation, or persuasion.

VI

The labor commissioner may investigate the employment practices and procedures of any state contractor or subcontractor and the practices and policies of any labor organization or employment agency hereinabove described, relating to employment under the state contract, as concerns nondiscrimination by such organization or agency as hereinabove described, or the labor commissioner may initiate such investigation by the appropriate contract agency, to determine whether or not the contractual provisions hereinabove specified or statutes of the state respecting them have been violated. Such investigation shall be conducted in accordance with the procedures established by the labor commissioner and the investigating agency shall report to the labor commissioner any action taken or recommended.

VII

The labor commissioner shall receive and investigate or cause to be investigated complaints by employees or prospective employees of a state contractor or subcontractor or members or applicants for membership or apprenticeship or training in a labor organization or employment agency hereinabove described, which allege discrimination contrary to the contractual provisions specified hereinabove or state statutes requiring nondiscrimination in employment opportunity. If this investigation is conducted for the labor commissioner by a contracting agency, that agency shall report to the labor commissioner what action has been taken or is recommended with regard to such complaints

VIII

The labor commissioner shall use his best efforts, directly and through contracting agencies, other interested federal, state and local agencies, contractors and all other available instrumentalities, including the commission on human rights and opportunities, the executive committee on human rights and opportunities, and the apprenticeship council under its mandate to provide advice and counsel to the labor commissioner in providing equal employment opportunities to all apprentices and to provide training, employment and upgrading opportunities for disadvantaged workers, in accordance with section 31-51(d) of the 1969 supplement to the general statutes, to cause any labor organization or any employment agency whose members are engaged in work under government contracts or referring workers or providing or supervising apprenticeship or training for or in the course of work under a state contract or subcontract to cooperate in the implementation of the purposes of this Order. The labor commissioner shall in appropriate cases notify the commission on human rights and opportunities or other appropriate state or federal agencies whenever it has reason to believe that the practices of any such organization or agency violate equal employment opportunity requirements of state or federal law.

IX

The labor commissioner or any agency officer or employee in the executive branch designated by regulation of the labor commissioner may hold such hearings, public of private, as the labor commissioner may deem advisable for compliance, enforcement or educational purposes under this Order.

X

(a) The labor commissioner may hold or cause to be held hearings, prior to imposing ordering or recommending the imposition of penalties and sanctions under this Order. No order for disbarment of any contractor from further state contracts shall be made without affording the contractor an opportunity for a hearing. In accordance with such regulations as the labor commissioner may adopt, the commissioner or the appropriate contracting agency may

(1) Publish or cause to be published the names of contractors or labor organizations or employment agencies as hereinabove described which it has concluded have complied or failed to comply with the provisions of this Order or the regulations of the labor commissioner in implementing this Order.

(2) Recommend to the commission on human rights and opportunities that in cases in which there is substantial or material violation or threat thereof of the contractual provision or related state statutes concerned herein, appropriate proceedings be brought to enforce them, including proceedings by the commission on its own motion under chapter 563 of the general statutes and the enjoining, within the limitations of applicable law, of organizations, individuals or groups who prevent directly or indirectly or seek to prevent directly or indirectly compliance with the provisions of this Order.

(3) Recommend that criminal proceedings be brought under chapter 939 of the general statutes.

(4) Cancel, terminate, suspend or cause to be cancelled, terminated, or suspended in accordance with law any contract or any portion or portions thereof for failure of the contractor or subcontractor to comply with the nondiscrimination provisions of the contract. Contracts may be cancelled, terminated, suspended absolutely or their continuance conditioned upon a program for fixture compliance approved by the contracting agency.

(5) Provide that any contracting agency shall refrain from entering into any further contracts or extensions or modifications of existing contracts with any contractor until he has satisfied the labor commissioner that he has established and will carry out personnel and employment policies compliant with this Order.

(6) Under regulations prescribed by the labor commissioner each contracting agency shall make reasonable efforts within a reasonable period of time to secure compliance with the contract provisions of this Order by methods of conference conciliation, mediation or persuasion, before other proceedings shall be instituted under this Order or before a state contract shall be cancelled or terminated in whole or in part for failure of the contractor or subcontractor to comply with the contract provisions of state statute and this Order.

(b) Any contracting agency taking any action authorized by this Order, whether on its own motion or as directed by the labor commissioner or pursuant to his regulations shall promptly

notify *him* of such action. Whenever the labor commissioner makes a determination under this Order, he shall promptly notify the appropriate contracting agency and other interested federal, state and local agencies of the action recommended. The state and local agency or agencies shall take such action and shall report the results thereof to the labor commissioner within such time as he shall specify.

XI

If the labor commissioner shall so direct, contracting agencies shall not enter into contracts with any bidder or prospective contractor unless he has satisfactorily complied with the provisions of this Order, or submits a program, for compliance acceptable to the labor commissioner, or if the labor commissioner so authorizes, to the contracting agency.

XII

Whenever a contracting agency cancels or terminates a contract, or a contractor has been disbarred from, further government contracts because of noncompliance with the contract provisions with regard to nondiscrimination, the labor commissioner or the contracting agency shall rescind such disbarment, upon the satisfaction of the labor commissioner that the contractor has purged himself of such noncompliance and will thenceforth carry out personnel and employment policies of nondiscrimination in compliance with the provision of this order.

XIII

The labor commissioner may delegate to any officer, agency or employee in the executive branch any function or duty of the labor commissioner under this Order except authority to promulgate regulations of a general nature.

XIV

This Executive Order supplements the Executive Order issued on September 28, 1967. All regulations, orders, instructions, designations and other directives issued heretofore in these premises, including those issued by the heads of various departments or agencies under or pursuant to prior order or statute, shall remain in full force and effect, unless and until revoked or superceded by appropriate authority, to the extent that they are not inconsistent with this Order.

This Order shall become effective thirty days after the date of this Order.

Dated at Hartford, Connecticut, this 16th day of June, 1971.

Thomas J. Meskill, GOVERNOR

Filed this ____ day of June, 1971.

STATE OF CONNECTICUT
BY HER EXCELLENCY
M. JODI RELL
GOVERNOR

EXECUTIVE ORDER NO. 14

WHEREAS, cleaning and sanitizing products are necessary for creating and maintaining clean, healthy and sanitary conditions in State facilities and workplaces;

WHEREAS, exposure to harmful chemicals contained in cleaning and sanitizing products may result in potential impacts to human health;

WHEREAS, harmful chemicals, byproducts and waste contained in certain cleaning and sanitizing products may can be released into the environment during the routine cleaning and sanitization of State facilities normal use;

WHEREAS, choosing less harmful cleaning and sanitizing products for use in State facilities and workplaces and taking steps to reduce exposure by by office and custodial workers, will minimize potential impacts on human health, will improve environmental quality and will reduce pollution;

WHEREAS, the procurement and the proper use and application of cleaning and sanitizing products that perform well and that have positive environmental attributes such as biodegradability, low toxicity, low volatile organic compound content, reduced packaging, and low life cycle energy use will reduce the environmental impacts of routine cleaning and sanitizing activities while also ensuring clean and sanitary State facilities; and

NOW, THEREFORE, I, M. Jodi Rell, Governor of the State of Connecticut, by virtue of the authority vested in me by the Constitution and Statutes of the State, do hereby ORDER and DIRECT:

All state agencies in the executive branch shall procure and use, whenever practicable, cleaning and/or sanitizing products having properties that minimize potential impacts to human health and the environment, consistent with maintaining clean and sanitary State facilities.

All state agencies in the executive branch and all higher education agencies and institutions, shall, when procuring or contracting for cleaning and/or sanitizing services provide in such contracts or procurement agreements, require contractors of the State or persons or entities providing cleaning and/or sanitizing services to the State use cleaning and/or sanitizing products having properties that minimize potential impacts to human health and the environment, consistent with maintaining clean and sanitary facilities.
All state agencies in the executive branch shall include in new contracts for the procurement of cleaning products or cleaning services, an appropriate requirement consistent with this Executive Order and the standards and guidelines established by the Department of Administrative Services under Paragraph 3 of this Executive Order.
The Department of Administrative Services, in consultation with the Department of Public Health, the Department of Public Works and the Department of Environmental Protection, shall not later than January 1, 2007, establish and publish written standards and guidelines to provide direction to all state agencies in the executive branch in connection with the implementation of this Executive Order.
The Department of Administrative Services shall provide the Office of the Governor with a report assessing the effectiveness of this Executive Order within one year of the effective date of this Executive Order.

Municipal governments, political subdivisions and school districts that are not expressly subject to the requirements of this Order are encouraged to review their purchasing and use of cleaning products and/or sanitizing products and are hereby urged to comply with the provisions of this Executive Order where deemed appropriate.
Municipal governments, political subdivisions and school districts that are not expressly subject to the requirements of this Executive Order are hereby requested and encouraged to review their procurement and use of cleaning and/or sanitizing products and are urged to comply with the provisions of this Executive Order. Such entities may to the extent they deem appropriate, in order to minimize potential impacts to human health and the environment, and consistent with maintaining clean and sanitary facilities seek guidance and assistance consistent with the provisions of Paragraph 3 of this Executive Order from the Departments of Administrative Services, Public Works, Public Health and Environmental Protection.

All state agencies in the executive branch covered by this Executive Order shall, wherever feasible, in a manner that is financially feasible, commercially reasonable and practicable, immediately transition to environmentally and health-friendly cleaning and/or sanitizing products. Such transition shall be accomplished as soon as possible and in a manner that avoids the waste of existing inventories, accommodates establishment of supply chains for new products, enables the training of personnel in appropriate work practices, and allows the phase-out of products and practices inconsistent with this Executive Order.

This Order shall take effect immediately.
Dated at Hartford this 17th day of April, 2006
M. JODI RELL
Governor

By Her Excellency's Command:
Susan Bysiewicz
Secretary of the State

The Executive Office of Governor John G. Rowland

State of Connecticut

By His Excellency

John G. Rowland

Governor

Executive Order No. Sixteen

WHEREAS, the State of Connecticut recognizes that workplace violence is a growing problem that must be addressed; and

WHEREAS, the State is committed to providing its employees a reasonably safe and healthy working environment, free from intimidation, harassment, threats, and /or violent acts; and

WHEREAS, violence or the threat of violence by or against any employee of the State of Connecticut or member of the public in the workplace is unacceptable and will subject the perpetrator to serious disciplinary action up to and including discharge and criminal penalties.

NOW, THEREFORE, I, John G. Rowland, Governor of the State of Connecticut, acting by virtue of the authority vested in me by the Constitution and by the statutes of this state, do hereby ORDER and DIRECT:

1. That all state agency personnel, contractors, subcontractors, and vendors comply with the following **Violence in the Workplace Prevention Policy**:

   The State of Connecticut adopts a statewide zero tolerance policy for workplace violence.

   Therefore, except as may be required as a condition of employment¾

   - No employee shall bring into any state worksite any weapon or dangerous instrument as defined herein.
   - No employee shall use, attempt to use, or threaten to use any such weapon or dangerous instrument in a state worksite.
   - No employee shall cause or threaten to cause death or physical injury to any individual in a state worksite.

   Weapon means any firearm, including a BB gun, whether loaded or unloaded, any knife (excluding a small pen or pocket knife), including a switchblade or other knife having an automatic spring release device, a stiletto, any police baton or nightstick or any martial arts weapon or electronic defense weapon.

   Dangerous instrument means any instrument, article, or substance that, under the circumstances, is capable of causing death or serious physical injury.

   Violation of the above reasonable work rules shall subject the employee to disciplinary action up to and including discharge.

2. That each agency must prominently post this policy and that all managers and supervisors must clearly communicate this policy to all state employees

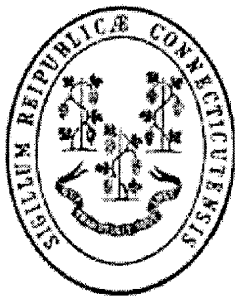
3. That all managers and supervisors are expected to enforce this policy fairly and uniformly.

4. That any employee who feels subjected to or witnesses violent, threatening, harassing, or intimidating behavior in the workplace immediately report the incident or statement to their supervisor, manager, or human resources office.
5. That any employee who believes that there is a serious threat to their safety or the safety of others that requires immediate attention notify proper law enforcement authorities and his or her manager or supervisor
6. That any manager or supervisor receiving such a report shall immediately contact their human resources office to evaluate, investigate and take appropriate action.
7. That all parties must cooperate fully when questioned regarding violations of this policy.
8. That all parties be advised that any weapon or dangerous instrument at the worksite will be confiscated and that there is no reasonable expectation of privacy with respect to such items in the workplace.
9. That this order applies to all state employees in the executive branch.
10. That each agency will monitor the effective implementation of this policy.
11. That this order shall take effect immediately.

Dated in Hartford, Connecticut, this fourth day of August, 1999.

JOHN G. ROWLAND, Governor

Filed this 4th day of August, 1999.



SUSAN BYSIEWICZ, Secretary of the State

Content Last Modified on 4/12/2004 2:34:16 PM

State Of Connecticut

By His Excellency

Thomas J. Meskill

Governor

Executive Order No. Seventeen

WHEREAS, Section 31-237 of the General Statutes of Connecticut as amended requires the maintaining of the established free services of the Connecticut State Employment Service to both employers and prospective employees and

WHEREAS, Section 31-5 of the General Statutes of Connecticut requires that no compensation or fee shall be charged or received directly or indirectly for the services of the Connecticut State Employment Service and

WHEREAS, large numbers of our citizens who have served in the Armed Forces of our nation are returning to civilian life in our state and seeking employment in civilian occupations and

WHEREAS, we owe a duty as well as gratitude to these returning veterans including the duty to find suitable employment for them and

WHEREAS, many of our handicapped citizens are fully capable of employment and are entitled to be placed in suitable employment and

WHEREAS, many of the citizens of our state who are unemployed are unaware of the job openings and employment opportunities which do in fact exist in our state and

WHEREAS, notwithstanding the free services of the Connecticut State Employment Service, many of our Connecticut employers do not use its free services or do not avail themselves fully of all the services offered,

NOW, THEREFORE, I, THOMAS J. MESKILL, Governor of the State of Connecticut, acting by virtue of the authority vested in me under the fourth article of the Constitution of the State and in accordance with Section 3-1 of the General Statutes, do hereby ORDER and direct, as follows, by this Executive Order:

I. The Labor Commissioner shall be responsible for the administration of this Order and shall do all acts necessary and appropriate to achieve its purpose. Upon promulgation of this Order, the Commissioner of Finance and Control shall issue a directive forthwith to all state agencies, that henceforth all state contracts and subcontracts for construction on public buildings, other public works and goods and services shall contain a provision rendering such contract or subcontract subject to this Order, and that such contract or subcontract may be cancelled, terminated or suspended by the Labor Commissioner for violation of or noncompliance with this Order, notwithstanding that the Labor Commissioner is not a party to such contract or subcontract.

II. Every contractor and subcontractor having a contract with the state or any of its agencies, boards, commissions, or departments, every individual partnership, corporation, or business entity having business with the state or who or which seeks to do business with the state, and every bidder or

prospective bidder who submits a bid or replies to an invitation to bid on any state contract shall list all employment openings with the office of the Connecticut State Employment Service in the area where the work is to be performed or where the services are to be rendered.

III. All state contracts shall contain a clause which shall be a condition of the contract that the contractor and any subcontractor holding a contract directly under the contractor shall list al employment openings with the Connecticut State Employment Service. The Labor Commissioner may allow exceptions to listings of employment openings which the contractor proposes to fill from within its organization from employees on the rolls of the contractor on the date of publication of the invitation to bid or the date on which the public announcement was published or promulgated advising of the program concerned.

IV. Each contracting agency of the state shall be primarily responsible for obtaining compliance with this Executive Order. Each contracting agency shall appoint or designate from among its personnel one or more persons who shall be responsible for compliance with the objectives of this Order.

V. The Labor Commissioner shall be and is hereby empowered to inspect the books, records, payroll and personnel data of each individual or business entity subject to this Executive Order and may hold hearings or conferences, formal or informal, in pursuance of the duties and responsibilities hereunto delegated to the Labor Commissioner.

VI. The Labor Commissioner or any agency officer or employee in the executive branch designated by regulation of the Labor Commissioner may hold such hearings, public or private, as the Labor Commissioner may deem advisable for compliance, enforcement or educational purposes under this Order.

VII. (a) The Labor Commissioner may hold or cause to be held hearings, prior to imposing, ordering, or recommending the imposition of penalties and sanctions under this Order. In accordance herewith, the Commissioner or the appropriate contracting agency may suspend, cancel, terminate, or cause to be suspended, cancelled, or terminated in accordance with law any contract or portion or portions thereof for failure of the contractor or subcontractor to comply with the listing provisions of the contract. Contracts may be cancelled, terminated, suspended absolutely or their continuance conditioned upon a program for future compliance approved by the contracting agency.

(b) Any contracting agency taking any action authorized by this Order, whether on its own motion or as directed by the Labor Commissioner, shall promptly notify him of such action. Whenever the Labor Commissioner makes a determination under this Order, he shall promptly notify the appropriate contracting agency of the action recommended. The agency shall report the results to the Labor Commissioner promptly.

VIII. If the Labor Commissioner shall so direct, contracting agencies shall not enter into contracts with any bidder or prospective contractor unless he has satisfactorily complied with the provisions of this Order.

This Order shall become effective sixty days after the date of this Order.

Dated at Hartford, Connecticut, this 15th day of February 1973.

Thomas J. Meskill
Governor

Filed this 15th day of February 1973.

Harry Hammer
Secretary Of The State (Deputy)

The Office of Governor M. Jodi Rell

STATE OF CONNECTICUT

BY HER EXCELLENCY

M. JODI RELL

GOVERNOR

EXECUTIVE ORDER NO. 17

WHEREAS, in September of 2006, I unveiled a comprehensive plan for Connecticut's energy future called "Connecticut's Energy Vision, For a Cleaner, Greener State" ("CT's Energy Vision").

WHEREAS, the CT's Energy Vision put forward a comprehensive plan designed to: reduce the State's reliance on fossil fuels; chart the path for an energy future that focuses on alternative, clean and environmentally friendly energy sources; create incentives for efficient energy choices, make conservation a critical component of state energy policy; strengthen state planning for energy needs and create real savings for consumers.

WHEREAS, The Connecticut Climate Change Action Plan 2005 includes a recommended action for the State procurement of environmentally preferable services and products by increasing preferences for products and services that decrease Green House Gas (GHG) emissions and/or mitigate climate change impact; and

WHEREAS, Public Act 04-252 established a goal for the state to reduce GHG emissions to contribute to the regional GHG reduction goals of 1990 levels by 2010 and 10% below 1990 levels by 2020; and

WHEREAS, Reducing demand for electricity and other energy sources will reduce green house gas emissions associated with global warming; and

WHEREAS, Energy efficiency is recognized as the most cost effective means for reducing the demand for electricity, controlling electric system growth and long term costs, and yielding real cost benefits for the consumer; and

WHEREAS, Utilizing energy efficient appliances and equipment will help mitigate Federally Mandated Congestion Charges (FMCCs) that Connecticut rate payers are subject to; and

WHEREAS, State agencies purchased 670 million kilowatt hours of electricity at a cost of $62.6 million in state fiscal year 2005; and

WHEREAS, The Energy Star® label indicates that appliances and equipment meet all U.S. Department of Energy and Environmental Protection Agency standards for energy efficiency; and

WHEREAS, Energy Star® estimates energy and cost savings to businesses, organizations and consumers utilizing Energy Star® certified appliances and equipment of approximately $12 billion nationally in 2005; and

WHEREAS, CT's Energy Vision called for state agencies to assume a leadership role in conservation and the use of energy efficient products and equipment.

NOW, THEREFORE, I, M. Jodi Rell, Governor of the State of Connecticut, acting by virtue of the

authority vested in me by the constitution and by the statutes of this state, do hereby **ORDER** and **DIRECT** that:

All future equipment and appliances purchased by and for executive branch state agencies shall be Energy Star® certified, provided such Energy Star® certified equipment and appliances are commercially available.

The Department of Administrative Services, in consultation with the Office of Policy and Management and the Department of Environmental Protection shall establish and publish guidelines to provide direction to all executive branch state agencies with the implementation of this Executive Order.

The Department of Administrative Services shall provide the Office of the Governor with a report assessing the effectiveness of this Executive Order within one year of the effective date of this Executive Order.

Municipal governments, political subdivisions and school districts that are not expressly subject to the requirements of this Executive Order are encouraged to comply with the provisions of this Executive Order. Such entities may seek guidance and assistance consistent with the provisions of Paragraph 2 of this Executive Order from the Departments of Administrative Services, Environmental Protection and the Office of Policy and Management.

This Order shall take effect immediately.

Dated at Hartford the __ day of February, 2008

_____

M. Jodi Rell,
Governor

STATE OF CONNECTICUT

BY HER EXCELLENCY

M. JODI RELL

GOVERNOR

EXECUTIVE ORDER NO. 18

WHEREAS, Connecticut is of state with a distinctive landscape and natural and historic beauty; and

WHEREAS, during the past several years there has been an increase in the number of outdoor advertising displays and billboards in Connecticut; and

WHEREAS, the outdoor advertising displays and billboards clutter our landscape and pose a potential distraction to the state's motorists; and

WHEREAS, a number of these outdoor displays and billboards are located on state owned property;

WHEREAS, many of the current contracts between the State of Connecticut and private entities allowing for the erection and/or maintenance of outdoor advertising structures, devices or displays contain renewal options; and

WHEREAS, in order to maintain the historic and natural landscape of our State it is necessary to curtail the number of outdoor advertising displays and billboards;

NOW, THEREFORE, I, M. Jodi Rell, Governor of the State of Connecticut, acting by virtue of the authority vested in me by the Constitution and the statutes of this State, do hereby **ORDER** and **DIRECT**:

1. That no new contracts for the erection and/or maintenance of outdoor advertising structures, devices or displays on state-owned property shall be executed;
2. That no renewal options in existing contracts for the erection and/or maintenance of outdoor advertising structures, devices or displays on state-owned property shall be exercised; and
3. That this Order takes effect immediately.

Dated in Hartford, Connecticut, this 6th day of February 2008.

_____

M. Jodi Rell, Governor

By Her Excellency's Command

TITLE VI CONTRACTOR ASSURANCES

For this document Contractor means Consultant, Consulting Engineer, Second Party, or other entity doing business with the State and Contract shall mean the same as Agreement.

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.

CONNECTICUT REQUIRED CONTRACT/AGREEMENT PROVISIONS
SPECIFIC EQUAL EMPLOYMENT OPPORTUNITY RESPONSIBILITIES

1. **General:**

a) Equal employment opportunity requirements not to discriminate and to take affirmative action to assure equal employment opportunity as required by Executive Order 11246, Executive Order 11375 are set forth in Required Contract Provisions (Form PR-1273 or 1316, as appropriate) and these Special Provisions which are imposed pursuant to Section 140 of Title 23 U.S.C., as established by Section 22 of the Federal-Aid Highway Act of 1968. The requirements set forth in these Special Provisions shall constitute the specific affirmative action requirements for project activities under this contract and supplement the equal employment opportunity requirements set forth in the Required Contract Provisions.

b) "Company" refers to any entity doing business with the Connecticut Department of Transportation and includes but is not limited to the following:

Contractors and Subcontractors
Consultants and Subconsultants
Suppliers of Materials and Vendors (where applicable)
Municipalities (where applicable)
Utilities (where applicable)

c) The Company will work with the Connecticut Department of Transportation (ConnDOT) and the Federal Government in carrying out equal employment opportunity obligations and in their review of his/her activities under the contract.

d) The Company and all his/her subcontractors or subconsultants holding subcontracts not including material suppliers, of $10,000 or more, will comply with the following minimum specific requirement activities of equal employment opportunity: (The equal employment opportunity requirements of Executive Order 11246, as set forth in volume 6, Chapter 4, Section 1, subsection 1 of the Federal-Aid Highway Program Manual, are applicable to material suppliers as well as contractors and subcontractors.) The company will include these requirements in every subcontract of $10,000 or more with such modification of language as necessary to make them binding on the subcontractor or subconsultant.

2. **Equal Employment Opportunity Policy:**

The Company will develop, accept and adopt as its operating policy 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.

3. **Equal Employment Opportunity Officer:**

The Company will designate and make known to ConnDOT contracting officers an Equal Employment Opportunity Officer (hereinafter referred to as the EEO Officer) who will have the responsibility for and must be capable of effectively administering and promoting an active equal employment opportunity program and who must be assigned adequate authority and responsibility to do so.

4. **Dissemination of Policy:**

a. All members of the Company's staff who are authorized to hire, supervise, promote and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the Company's equal employment opportunity policy and contractual responsibilities to provide equal employment opportunity in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

(1) Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the Company's equal employment opportunity policy and its implementation will be reviewed and explained. The meeting will be conducted by the EEO Officer or other knowledgeable company official.

(2) All new supervisor or personnel office employees will be given a thorough indoctrination by the EEO Officer or other knowledgeable company official, covering all major aspects of the Company's equal employment opportunity obligations within thirty days following their reporting for duty with the Company.

(3) All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer or appropriate company official in the Company's procedures for locating and hiring minority group employees.

b. In order to make the Company's equal employment opportunity policy known to all employees, prospective employees and potential sources of employees, i.e., schools, employment agencies, labor unions (where appropriate), college placement officers, etc., the Company will place their equal employment opportunity policy in areas readily accessible to employees, applicants for employment and potential employees. The Company will bring the equal opportunity policy to the attention of employees through meetings, employee handbooks, or other appropriate means.

5. **Recruitment:**

a. When advertising for employees, the Company will include in all advertisements the notation: "An Equal Opportunity Employer". All such advertisements will be published in newspapers or other publications having a large circulation among minority groups in the area from which the project workforce would normally be derived. The Company shall comply with this provision and the recruitment requirements outlined in their ConnDOT approved Affirmative Action Plan.

b. The Company will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minority group applicants, including, but not limited to, State employment agencies, schools, colleges and minority group organizations. To meet this requirement, the Company will, through his/her EEO Officer, identify sources of potential minority group employees, and establish with such identified sources, procedures whereby minority group employees, and applicants may be referred to the Company for employment consideration.

In the event that the Company has a valid bargaining agreement providing for exclusive hiring hall referrals, he/she is expected to observe the provisions of that agreement to the extent that the system permits the Company's compliance with equal employment opportunity

contract provisions. (The U.S. Department of Labor has held that where implementation of such agreements have the effect of discriminating against minorities or women, or obligates the Company to do the same, such implementation violates Executive Order 11246, as amended.)

c. The Company will encourage his/her present employees to refer minority group applicants for employment by posting appropriate notices or bulletins in areas accessible to all such employees. In addition, information and procedures with regard to referring minority group applicants will be discussed with employees.

6. **Personnel Actions:**
Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoffs, and termination, shall be taken without regard to race, color, religion, sex, or national origin, etc. The company's personnel actions shall comply with this provision and the requirements outlined in their ConnDOT approved Affirmative Action Plan.

a. The Company will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The Company will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The Company will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the Company will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The general contract provision entitled A(76) Affirmative Action Requirements is made part of this document by reference.

7. **Training and Promotion:**
a. The Company will assist in locating, qualifying, and increasing the skills of minority group and women employees, and applicants for employment.

b. Consistent with the Company's work force requirements and as permissible under Federal and State regulations, the Company shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. In the event the Training Special Provision is provided under this contract, this subparagraph will be superseded.

c. The Company will advise employees and applicants for employment of available training programs and the entrance requirements for each.

d. The Company will periodically review the training and promotion potential of minority group and women employees and will encourage eligible employees to apply for such training and promotion.

8. **Unions:**

If the Company relies in whole or in part upon unions as a source of employees, the Company will use his/her best efforts to obtain the cooperation of such unions to increase opportunities for minority groups and women within the unions, and to effect referrals by such unions of minority and female employees. Actions by the Company either directly or through a contractor's association acting as agent will include the procedures set forth below:

a. The Company will use best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority group members and women for membership in the unions and increasing the skills of minority group employees and women so that they may qualify for higher paying employment.

b. The Company will use best efforts to incorporate an Equal Opportunity clause into each union agreement to the extent that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex or national origin.

c. The Company is to obtain information as to the referral practices and policies of the labor union except to the extent that such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the Company, the Company shall so certify to the Connecticut Department of Transportation (ConnDOT) and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the Company with a reasonable flow of minority and women referrals within the time limit set forth in the collective bargaining agreement, the Company will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin; making full efforts to obtain qualified and/or qualifiable minority group persons and women. (The United States Department of Labor has held that it shall be no excuse that the union with which the contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority employees.) In the event the union referral practice prevents the Company from meeting the obligations under Executive Order 11246 as amended, and these special provisions, such Company shall immediately notify ConnDOT.

9. **Subcontracting:**

a. The Company will use his/her best efforts to solicit bids from and to utilize minority group subcontractors, or subcontractors with meaningful minority group and female representation among their employees. Companies shall obtain lists of minority-owned construction firms from the Division of Contract compliance.

b. The Company will use its best efforts to ensure subcontractor compliance with their equal employment opportunity obligations.

10. **Records and Reports:**

a. The Company will keep such records as are necessary to determine compliance with equal employment opportunity obligations. The records kept by the Company will be designed to indicate:

1. The number of minority and non-minority group members and women employed in each classification on the project;

2. The progress and efforts being made in cooperation with unions to increase employment opportunities for minorities and women; (applicable only to contractors who rely in whole or in part on unions as a source of their work force),
3. The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees; and
4. The progress and efforts being made in securing the services of minority group subcontractors, or subcontractors with meaningful minority and female representation among their employees.

b. All such records must be retained for a period of three years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of ConnDOT and the Federal Highway Administration.

c. The Company will submit an annual report to ConnDOT each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form PR 1391. If on-the-job training is being required by "Training Special Provision", the Company will be required to furnish Form FHWA 1409.

11. <u>Affirmative Action Plan</u>

Companies with contracts, agreements or purchase orders valued at $10,000 or more will submit a ConnDOT Affirmative Action Plan.

PREVAILING FEDERAL WAGE RATES

General Decision Number: CT100001 10/14/2011 CT1

Superseded General Decision Number: CT20080001

State: Connecticut

Construction Type: Highway

Counties: Fairfield, Litchfield, Middlesex, New Haven, Tolland and Windham Counties in Connecticut.

HIGHWAY CONSTRUCTION PROJECTS

Modification Number	Publication Date
0	03/12/2010
1	04/23/2010
2	04/30/2010
3	05/07/2010
4	06/04/2010
5	07/02/2010
6	07/16/2010
7	07/23/2010
8	07/30/2010
9	08/20/2010
10	10/08/2010
11	11/05/2010
12	04/22/2011
13	06/03/2011
14	06/10/2011
15	06/17/2011
16	07/08/2011
17	10/07/2011
18	10/14/2011

BRCT0001-004 10/03/2011

	Rates	Fringes
BRICKLAYER		
BRICKLAYERS, CEMENT MASONS, CEMENT FINISHERS, PLASTERERS AND STONE MASONS	$ 32.50	23.55

CARP0024-006 05/02/2011

LITCHFIELD COUNTY
Harwinton, Plymouth, Thomaston, Watertown
MIDDLESEX COUNTY
NEW HAVEN COUNTY
Beacon Falls, Bethany, Branford, Cheshire, East Haven, Guilford, Hamden. Madison, Meriden, Middlebury, Naugatuck, New Haven, North Branford, North Haven, Orange (east of Orange Center Road and north of Route 1, and north of Route 1 and east of the Oyster River), Prospect, Southbury, Wallingford, Waterbury, West Haven, Wolcott, Woodbridge
TOLLAND COUNTY
Andover, Columbia, Coventry, Hebron, Mansfield, Union, Willington
WINDHAM COUNTY

	Rates	Fringes

Carpenters:
Carpenters, Piledrivers.....$ 29.11 20.29
Diver Tenders.....$ 29.11 20.29
Divers.....$ 37.57 20.29

CARP0043-004 05/02/2011

	Rates	Fringes
Carpenters: (TOLLAND COUNTY Bolton, Ellington, Somers, Tolland, Vernon)		
CARPENTERS, PILEDRIVERS	$ 29.11	20.29
DIVER TENDERS	$ 29.11	20.29
DIVERS	$ 37.57	20.29

CARP0210-002 05/02/2011

	Rates	Fringes
Carpenters:		
CARPENTERS, PILEDRIVERS	$ 29.11	20.29
DIVER TENDERS	$ 29.11	20.29
DIVERS	$ 37.57	20.29

FAIRFIELD COUNTY

Bethel, Bridgeport, Brookfield, Danbury, Darien, Easton, Fairfield, Greenwich, Monroe, New Canaan, New Fairfield, Newtown, Norwalk, Redding, Ridgefield, Shelton, Sherman, Stamford, Stratford, Trumbull, Weston, Westport, Wilton;

LITCHFIELD COUNTY

Barkhamstead, Bethlehem, Bridgewater, Canaan, Colebrook, Cornwall, Goshen, Kent, Litchfield, Morris, New Hartford, New Milford, Norfolk, North Canaan, Roxbury, Salisbury, Sharon, Torrington, Warren, Washington, Winchester, Woodbury;

NEW HAVEN COUNTY

Ansonia, Derby, Milford, Orange (west of Orange Center Road and south of Route 1 and west of the Oyster River), Oxford, Seymour;

ELEC0003-002 05/08/2008

	Rates	Fringes
Electricians		
FAIRFIELD COUNTY		
Darien, Greenwich, New Canaan, Stamford	$ 44.75	30.42

ELEC0035-001 06/01/2011

	Rates	Fringes
Electricians:		
MIDDLESEX COUNTY (Cromwell, Middlefield, Middleton and Portland);		

TOLLAND COUNTY; WINDHAM
COUNTY.....$ 36.40 21.31

ELEC0090-002 06/01/2011

	Rates	Fringes
Electricians:.....	$ 35.70	21.52

LITCHFIELD COUNTY

Plymouth Township;

MIIDDLESEX COUNTY

Chester, Clinton, Deep River, Durham, East Haddam, East Hampton, Essex, Haddam, Killingworth, Old Saybrook, Westbrook;

NEW HAVEN COUNTY

All Townships excluding Beacon Falls, Middlebury,Milford, Naugatuck, Oxford, Prospect, Seymour, Southbury, Waterbury and Wolcott.

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* ELEC0488-002 06/01/2011

	Rates	Fringes
Electricians.....	$ 35.10	22.26

FAIRFIELD COUNTY

Bethel, Bridgeport, Brookfield, Danbury, Easton, Fairfield, Monroe, New Fairfield, Newtown, Norwalk, Redding, Ridgefield, Shelton, Sherman, Stratford, Trumbull, Weston, Westport and Wilton.

LITCHFIELD COUNTY

Except Plymouth;

NEW HAVEN COUNTY

Beacon Falls, Middlebury, Milford, Naugatuck, Oxford, Prospect, Seymour, Southbury, Waterbury and Wolcott

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ENGI0478-001 05/07/2011

	Rates	Fringes
Power equipment operators:		
GROUP 1.....	$ 35.05	19.40
GROUP 2.....	$ 34.73	19.40
GROUP 3.....	$ 33.99	19.40
GROUP 4.....	$ 33.60	19.40
GROUP 5.....	$ 33.01	19.40
GROUP 6.....	$ 32.70	19.40
GROUP 7.....	$ 32.36	19.40
GROUP 8.....	$ 31.96	19.40
GROUP 9.....	$ 31.53	19.40
GROUP 10.....	$ 29.49	19.40
GROUP 11.....	$ 29.49	19.40
GROUP 12.....	$ 29.43	19.40
GROUP 13.....	$ 30.96	19.40
GROUP 14.....	$ 28.85	19.40

GROUP 15	$ 28.54	19.40
GROUP 16	$ 27.71	19.40
GROUP 17	$ 27.30	19.40
GROUP 18	$ 26.65	19.40

Hazardous waste premium $3.00 per hour over classified rate.

Crane with boom, including jib, 150 feet - $1.50 extra.
Crane with boom, including jib, 200 feet - $2.50 extra.
Crane with boom, including jib, 250 feet - $5.00 extra.
Crane with boom, including jib, 300 feet - $7.00 extra.
Crane with boom, including jib, 400 feet - $10.00 extra

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.

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

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.

GROUP 2: Cranes (100 ton capacity & over), Excavator over 2 cubic yards, piledriver ($3.00 premium when operator controls hammer).

GROUP 3: Excavator, 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 or operation) Rubber Tire Excavator (drott 1085 or similar); Grader Operator; Bulldozer Fine Grade (slopes, shaping, laser or GPS, etc.)

GROUP 4: Trenching machines, lighter derrick, concrete finishing machine, CMI machine or similar, Koehring Loader (skooper).

GROUP 5: Specialty railroad equipment, asphalt spreader, asphalt reclaiming machine, line grider, concrete pumps, drills with self contained power units, boring machine, post hole digger, auger, pounder, well digger, milling machine (over 24' mandrel), side boom, combination hoe and loader, directional driller.

GROUP 6: Front end loader (3 cu. yds. up to 7 cu. yards), bulldozer (Rough grade dozer) .

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).

GROUP 8: Mechanic, grease truck operator, hydoblaster, barrier mover, power stone spreader, welder, work boat under 26 ft. transfer machine.

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).

GROUP 10: Vibratory hammer,ice machine, diesel & air, hammer, etc.

GROUP 11: Conveyor, earth roller, power pavement breaker (whiphammer), robot demolition equipment.

GROUP 12: Wellpoint operator.

GROUP 13: Portable asphalt plant operator, portable concrete plant operator, portable crusher plant operator.

GROUP 14: Compressor battery operator.

GROUP 15: Power Safety boat, Vacuum truck, Zim mixer, Sweeper; (Minimum for any job requiring a CDL license) .

GROUP 16: Elevator operator, tow motor operator (solid tire no rough terrain).

GROUP 17: Generator operator, compressor operator, pump operator,welding machine operator; Heater operator.

GROUP 18: Maintenance engineer.

IRON0015-002 06/28/2010

	Rates	Fringes
Ironworkers: (Reinforcing, Structural and Precast Concrete Erection)	$ 33.00	26.58+a

a. PAID HOLIDAY: Labor Day provided employee has been on the payroll for the 5 consecutive work days prior to Labor Day.

LABO0056-003 04/03/2011

	Rates	Fringes
Laborers:		
GROUP 1	$ 25.75	15.60
GROUP 2	$ 26.00	15.60
GROUP 3	$ 26.25	15.60
GROUP 4	$ 26.75	15.60
GROUP 5	$ 27.50	15.60
GROUP 6	$ 27.75	15.60
GROUP 7	$ 16.00	15.60

LABORERS CLASSIFICATIONS

GROUP 1: Laborers (Unskilled), acetylene burner, concrete specialist

GROUP 2: Chain saw operators, fence and guard rail erectors, pneumatic tool operators and powdermen.

GROUP 3: Pipelayers, Jackhammer/Pavement breaker (handheld), mason tenders/catch basin builders, asphalt rakers, air track operators, block paver and curb setter

GROUP 4: Asbestos/lead removal

GROUP 5: Blasters

GROUP 6: Toxic waste remover

GROUP 7: Traffic control signalman

PAIN0011-001 06/01/2011

	Rates	Fringes
Painters:		
Blast and Spray	$ 32.17	16.35
Brush and Roll	$ 29.17	16.35
Tanks, Towers, Swing	$ 31.17	16.35

PAIN0011-003 06/01/2011

	Rates	Fringes
Painters: (BRIDGE CONSTRUCTION)		
Brush, Roller, Blasting (Sand, Water, etc.) Spray	$ 41.35	16.35

TEAM0064-001 04/03/2011

	Rates	Fringes
Truck drivers:		
2 Axle Ready Mix	$ 27.98	15.71+a
2 Axle	$ 27.88	15.71+a
3 Axle Ready Mix	$ 28.03	15.71+a
3 Axle	$ 27.98	15.71+a
4 Axle Ready Mix	$ 28.13	15.71+a
4 Axle	$ 28.08	15.71+a
Heavy Duty Trailer 40 tons and over	$ 28.33	15.71+a
Heavy Duty Trailer up to 40 tons	$ 28.08	15.71+a
Specialized (Earth moving equipment other than conventional type on-the-road trucks and semi-trailers, including Euclids)	$ 28.13	15.71+a

Hazardous waste removal work receives additional $1.25 per hour.

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.

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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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 clauses (29CFR 5.5 (a) (1) (ii)).

In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor

200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

General Decision Number: CT100018 10/14/2011 CT18

Superseded General Decision Number: CT20080018

State: Connecticut

Construction Type: Heavy

County: New Haven County in Connecticut.

HEAVY CONSTRUCTION PROJECTS

Modification Number	Publication Date
0	03/12/2010
1	04/30/2010
2	05/07/2010
3	06/04/2010
4	07/02/2010
5	07/23/2010
6	07/30/2010
7	10/08/2010
8	11/05/2010
9	04/22/2011
10	06/03/2011
11	06/17/2011
12	10/07/2011
13	10/14/2011

BRCT0001-011 10/03/2011

	Rates	Fringes
BRICKLAYER	$ 32.50	23.55

BRCT0001-012 10/03/2011

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 32.50	23.55

CARP0024-015 05/02/2011

Beacon Falls, Bethany, Branford, Cheshire, East Haven, Guilford, Hamden, Madison, Meriden, Middlebury, Naugatuck, New Haven, North Branford, North Haven, Orange (east of Orange Center Road and north of Route 1, and north of Route 1 and east of the Oyster River), Prospect, Southbury, Wallingford, Waterbury, West Haven, Wolcott, Woodbridge

	Rates	Fringes
CARPENTER	$ 29.11	20.29

CARP0210-006 05/02/2011

Ansonia, Derby, Milford, Orange (West of Orange Center Road and South of Route 1 and West of the Oyster River), Oxford, Seymour

	Rates	Fringes
CARPENTER	$ 29.11	20.29

ELEC0090-004 06/01/2011

Entire County excluding Beacon Falls, Middlebury, Milford, Naugatuck, Oxford, Prospect, Seymour, Southbury, Waterbury and Wolcott Townships

	Rates	Fringes
ELECTRICIAN	$ 35.70	21.52

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* ELEC0488-007 06/01/2011

Beacon Falls, Middlebury, Milford, Naugatuck, Oxford, Prospect, Seymour, Southbury, Waterbury and Wolcott Townships

	Rates	Fringes
ELECTRICIAN	$ 35.10	22.26

ENGI0478-011 05/07/2011

	Rates	Fringes
POWER EQUIPMENT OPERATOR:		
Asphalt Paver	$ 33.01	19.40+a
Asphalt Roller	$ 32.36	19.40+a
Asphalt Spreader	$ 33.01	19.40+a
Backhoe/Excavator 2 cubic yards and over	$ 34.73	19.40+a
Backhoe/Excavator under 2 cubic yards	$ 33.99	19.40+a
Crane handling or erecting structural steel or stone	$ 35.05	19.40+a
Cranes (100 ton capacity & over)	$ 34.73	19.40+a
Cranes (under 100 ton rated capacity)	$ 33.99	19.40+a
Drills with self contained power units; Directional driller	$ 33.01	19.40+a
Earth Roller	$ 29.49	19.40+a
Forklift	$ 31.53	19.40+a
Front End Loader (3 cubic yards up to 7 cubic yards)	$ 32.70	19.40+a
Front End Loader (7 cubic yards or over)	$ 35.05	19.40+a
Front End Loader (under 3 cubic yards)	$ 31.53	19.40+a
Grader/Blade	$ 33.99	19.40+a
Maintenance Engineer/Oiler	$ 26.65	19.40+a
Mechanic	$ 31.96	19.40+a
Rubber Tire Backhoe/Excavator	$ 33.99	19.40+a

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.

b. Crane with boom, including jib, 150 feet - $1.50 extra .
Crane with boom, including jib, 200 feet- $2.50 extra.
Crane with boom, including jib, 250 feet - $5.00 extra.
Crane with boom, including jib, 300 feet - $7.00 extra.
Crane with boom, including jib, 400 feet - $10.00 extra.

IRON0015-005 06/28/2010

	Rates	Fringes
IRONWORKER, REINFORCING	$ 33.00	26.58+a

a. PAID HOLIDAY: Labor Day provided employee has been on the payroll for the 5 consecutive work days prior to Labor Day.

LABO0056-005 04/03/2011

	Rates	Fringes
LABORERS		
GROUP 1	$ 25.75	15.60
GROUP 2	$ 26.00	15.60
GROUP 3	$ 26.25	15.60
GROUP 4	$ 26.75	15.60
GROUP 5	$ 27.50	15.60
GROUP 6	$ 27.75	15.60
GROUP 7	$ 16.00	15.60

LABORERS CLASSIFICATIONS

GROUP 1: Laborers (Unskilled), acetylene burner, concrete specialist

GROUP 2: Chain saw operators, fence and guard rail erectors, pneumatic tool operators and powdermen.

GROUP 3: Pipelayers, Jackhammer/Pavement breaker (handheld), mason tenders/catch basin builders, asphalt rakers, air track operators, block paver and curb setter

GROUP 4: Asbestos/lead removal

GROUP 5: Blasters

GROUP 6: Toxic waste remover

GROUP 7: Traffic control signalman

PAIN0011-013 06/01/2010

	Rates	Fringes
PAINTER		
Brush and Roller	$ 28.47	15.40
Spray Only	$ 31.47	15.40
Steel Only	$ 30.47	15.40

SUCT2002-011 12/16/2008

	Rates	Fringes

IRONWORKER, STRUCTURAL.....$ 24.85 13.83

OPERATOR: Bulldozer.....$ 25.33 9.64

TEAM0064-006 04/03/2011

	Rates	Fringes
TRUCK DRIVER: 4 Axle Truck.....	$ 28.08	15.71+a

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

==========

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 clauses (29 CFR 5.5(a)(1)(ii)).

In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

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described here, initial contact should be with the Branch of Construction
Wage Determinations. Write to:

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Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party
(those affected by the action) can request review and reconsideration from
the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7).
Write to:

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U.S. Department of Labor
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Washington, DC 20210

The request should be accompanied by a full statement of the interested
party's position and by any information (wage payment data, project
description, area practice material, etc.) that the requestor considers
relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested
party may appeal directly to the Administrative Review Board (formerly the
Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

PREVAILING STATE WAGE RATES

Project: Naugatuck Pedestrian Greenway Phase I

Minimum Rates and Classifications
for Heavy/Highway Construction
H 15904

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:
FAP Number: PEDS (89)
Project: Naugatuck Pedestrian Greenway Phase I

Project Town Naugatuck
State Number: 87-143

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	23.55
2) Carpenters, Piledrivermen	29.11	20.29
2a) Diver Tenders	29.11	20.29

As of: Wednesday, December 28, 2011

Project: Naugatuck Pedestrian Greenway Phase I

3) Divers	37.57	20.29
4) Painters: (Bridge Construction) Brush, Roller, Blasting (Sand, Water, etc.), Spray	41.35	16.35
4a) Painters: Brush and Roller	29.17	16.35
4b) Painters: Spray Only	31.47	15.40
4c) Painters: Steel Only	30.47	15.40
4d) Painters: Blast and Spray	32.17	16.35
4e) Painters: Tanks, Tower and Swing	31.17	16.35
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)	35.10	22.26

As of: Wednesday, December 28, 2011

Project: Naugatuck Pedestrian Greenway Phase I

6) Ironworkers: (Ornamental, Reinforcing, Structural, and Precast Concrete Erection)	33.00	26.58 + 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	24.46
----LABORERS---- - Last updated 4/27/11		
8) Group 1: Laborer (Unskilled), Common or General, acetylene burner, concrete specialist	25.75	15.60
9) Group 2: Chain saw operators, fence and guard rail erectors, pneumatic tool operators, powdermen, air tool operator	26.00	15.60
10) Group 3: Pipelayers (Installation of water, storm drainage or sewage lines outside of the building line with P6, P7 license)	26.25	15.60
11) Group 4: Jackhammer/Pavement breaker (handheld); mason tenders (cement/concrete), catch basin builders, asphalt rakers, air track operators, block pavers and curb setters	26.25	15.60
12) Group 5: Toxic waste removal (non-mechanical systems)	27.75	15.60

As of: Wednesday, December 28, 2011

Project: Naugatuck Pedestrian Greenway Phase I

13) Group 6: Blasters	27.50	15.60
Group 7: Asbestos Removal, non-mechanical systems (does not include leaded joint pipe)	26.75	15.60
Group 8: Traffic control signalmen	16.00	15.60
----LABORERS (TUNNEL CONSTRUCTION, FREE AIR). Shield Drive and Liner Plate Tunnels in Free Air.---- Last updated 4/27/11----		
13a) Miners, Motormen, Mucking Machine Operators, Nozzle Men, Grout Men, Shaft & Tunnel Steel & Rodmen, Shield & Erector, Arm Operator, Cable Tenders	30.32	15.60 + a
13b) Brakemen, Trackmen	29.44	15.60 + a
----CLEANING, CONCRETE AND CAULKING TUNNEL----Last updated 4/27/11----		
14) Concrete Workers, Form Movers, and Strippers	29.44	15.60 + a

As of: Wednesday, December 28, 2011

15) Form Erectors	29.74	15.60 + a
----ROCK SHAFT LINING, CONCRETE, LINING OF SAME AND TUNNEL IN FREE AIR:----Last updated 4/27/11----		
16) Brakemen, Trackmen, Tunnel Laborers, Shaft Laborers	29.44	15.60 + a
17) Laborers Topside, Cage Tenders, Bellman	29.33	15.60 + a
18) Miners	30.32	15.60 + a
----TUNNELS, CAISSON AND CYLINDER WORK IN COMPRESSED AIR: ----Last updated 4/27/11----		
18a) Blaster	35.213	15.60 + a
19) Brakemen, Trackmen, Groutman, Laborers, Outside Lock Tender, Gauge Tenders	35.036	15.60 + a

As of: Wednesday, December 28, 2011

Project: Naugatuck Pedestrian Greenway Phase I

20) Change House Attendants, Powder Watchmen, Top on Iron Bolts	33.268	15.60 + a
21) Mucking Machine Operator	35.745	15.60 + a
----TRUCK DRIVERS----(*see note below)		
Two axle trucks	27.88	15.71 + a
Three axle trucks; two axle ready mix	27.98	15.71 + a
Three axle ready mix	28.03	15.71 + a
Four axle trucks, heavy duty trailer (up to 40 tons)	28.08	15.71 + a
Four axle ready-mix	28.13	15.71 + a

As of: Wednesday, December 28, 2011

Heavy duty trailer (40 tons and over)	28.33	15.71 + a
Specialized earth moving equipment other than conventional type on-the road trucks and semi-trailer (including Euclids)	28.13	15.71 + 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)	35.05	19.40 + 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)	34.73	19.40 + 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)	33.99	19.40 + a
Group 4: Trenching Machines; Lighter Derrick; Concrete Finishing Machine; CMI Machine or Similar; Koehring Loader (Skooper)	33.60	19.40 + 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)	33.01	19.40 + a

Project: Naugatuck Pedestrian Greenway Phase I

Group 5 continued: Side Boom; Combination Hoe and Loader; Directional Driller.	33.01	19.40 + a
Group 6: Front End Loader (3 up to 7 cubic yards); Bulldozer (rough grade dozer).	32.70	19.40 + 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).	32.36	19.40 + a
Group 8: Mechanic, Grease Truck Operator, Hydroblaster, Barrier Mover, Power Stone Spreader; Welder; Work Boat under 26 ft.; Transfer Machine.	31.96	19.40 + 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).	31.53	19.40 + a
Group 10: Vibratory Hammer, Ice Machine, Diesel and Air Hammer, etc.	29.49	19.40 + a
Group 11: Conveyor, Earth Roller; Power Pavement Breaker (whiphammer), Robot Demolition Equipment.	29.49	19.40 + a
Group 12: Wellpoint Operator.	29.43	19.40 + a

As of: Wednesday, December 28, 2011

Project: Naugatuck Pedestrian Greenway Phase I

Group 13: Compressor Battery Operator.	28.85	19.40 + a
Group 14: Elevator Operator; Tow Motor Operator (Solid Tire No Rough Terrain).	27.71	19.40 + a
Group 15: Generator Operator; Compressor Operator; Pump Operator; Welding Machine Operator; Heater Operator.	27.30	19.40 + a
Group 16: Maintenance Engineer/Oiler	26.65	19.40 + a
Group 17: Portable asphalt plant operator; portable crusher plant operator; portable concrete plant operator.	30.96	19.40 + a
Group 18: Power Safety Boat; Vacuum Truck; Zim Mixer; Sweeper; (minimum for any job requiring CDL license).	28.54	19.40 + a

**NOTE: SEE BELOW

----LINE CONSTRUCTION----(Railroad Construction and Maintenance)----Last updated 9/3/2010----

As of: Wednesday, December 28, 2011

Project: Naugatuck Pedestrian Greenway Phase I

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----

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

As of: Wednesday, December 28, 2011

Project: Naugatuck Pedestrian Greenway Phase I

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: Wednesday, December 28, 2011

Project: Naugatuck Pedestrian Greenway Phase I

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: Wednesday, December 28, 2011

Project: Naugatuck Pedestrian Greenway Phase I

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: Wednesday, December 28, 2011

Sec. 31-53b. Construction safety and health course. New miner training program. Proof of completion required for mechanics, laborers and workers on public works projects. Enforcement. Regulations. Exceptions. (a) Each contract for a public works project entered into on or after July 1, 2009, by the state or any of its agents, or by any political subdivision of the state or any of its agents, described in subsection (g) of section 31-53, shall contain a provision requiring that each contractor furnish proof 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 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.

(b) Any person required to complete a course or program under subsection (a) of this section who has not completed the course or program shall be subject to removal from the worksite if the person does not provide documentation of having completed such course or program by the fifteenth day after the date the person is found to be in noncompliance. The Labor Commissioner or said commissioner's designee shall enforce this section.

(c) Not later than January 1, 2009, 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 Federal Mine Safety and Health Administration 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) This section shall not apply to employees of public service companies, as defined in section 16-1, or drivers of commercial motor vehicles driving the vehicle on the public works project and delivering or picking up cargo from public works projects provided they perform no labor relating to the project other than the loading and unloading of their cargo.

(P.A. 06-175, S. 1; P.A. 08-83, S. 1.)

History: P.A. 08-83 amended Subsec. (a) by making provisions applicable to public works project contracts entered into on or after July 1, 2009, replacing provision re total cost of work with reference to Sec. 31-53(g), requiring proof in certified payroll form that new mechanic, laborer or worker has completed a 10-hour or more construction safety course and adding provision re new miner training program, amended Subsec. (b) by substituting "person" for "employee" and adding "or program", amended Subsec. (c) by adding "or in accordance with Federal Mine
Safety and Health Administration Standards" and setting new deadline of January 1, 2009, deleted former Subsec. (d) re "public building", added new Subsec. (d) re exemptions for public service company employees and delivery drivers who perform no labor other than delivery and made conforming and technical changes, effective January 1, 2009.

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.

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.

Statute 31-55a

- 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
Last Updated: April 22, 2010

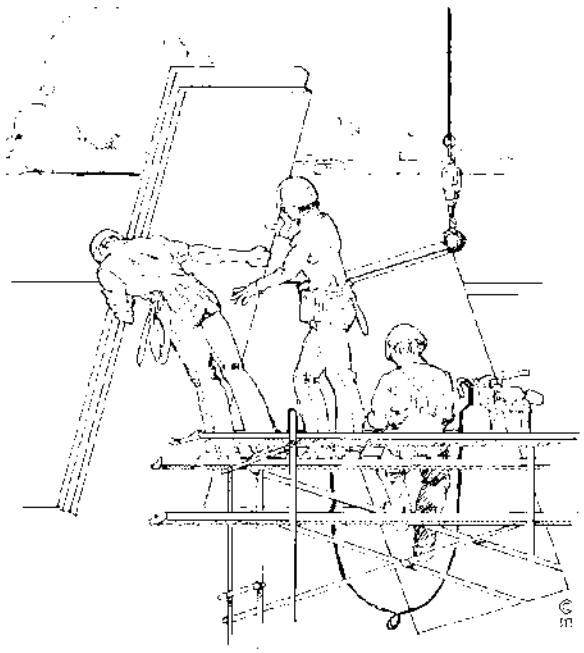
~NOTICE~

TO ALL CONTRACTING AGENCIES

Please be advised that Connecticut General Statutes Section 31-53, requires the contracting agency to certify to the Department of Labor, the total dollar amount of work to be done in connection with such public works project, regardless of whether such project consists of one or more contracts.

Please find the attached "Contracting Agency Certification Form" to be completed and returned to the Department of Labor, Wage and Workplace Standards Division, Public Contract Compliance Unit.

✎ Inquiries can be directed to (860)263-6543.



CONNECTICUT DEPARTMENT OF LABOR
WAGE AND WORKPLACE STANDARDS DIVISION
CONTRACT COMPLIANCE UNIT

CONTRACTING AGENCY CERTIFICATION FORM

I, _____, acting in my official capacity as _____,
authorized representative title

for _____, located at _____,
contracting agency address

do hereby certify that the total dollar amount of work to be done in connection with

_____, located at _____,
project name and number address

shall be $_____, which includes all work, regardless of whether such project

consists of one or more contracts.

CONTRACTOR INFORMATION

Name:_____

Address:_____
Authorized Representative:_____
Approximate Starting Date: _____

Approximate Completion Date:_____

_____ _____
Signature Date

Return To: Connecticut Department of Labor
Wage & Workplace Standards Division
Contract Compliance Unit
200 Folly Brook Blvd.
Wethersfield, CT 06109

Date Issued: _____

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

Rate Schedule Issued (Date): _____

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

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.

Connecticut Department of Labor
Wage and Workplace Standards Division
FOOTNOTES

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.

PERMITS

Connecticut Department of

ENERGY &
ENVIRONMENTAL
PROTECTION

September 8, 2011

Connecticut Department of Transportation
2800 Berlin Turnpike
Newington, CT 06131

Attn: Mark W. Alexander

RE: FM-201102439
Naugatuck River Greenway Phase I
Town of Naugatuck

Dear Mr. Alexander,

The Inland Water Resources Division of the Department of Energy and Environmental Protection has reviewed the flood management certification prepared by Matthew Sanford and signed by Thomas J. Maziarz of the Connecticut Department of Transportation. The certification document dated April 5, 2011 and submitted on April 7, 2011 states that the proposed activity has been designed in compliance with the requirements of Section 25-68d(b) of the Connecticut General Statutes (CGS) and Section 25-68h-1 through 25-68h-3 of the Regulations of Connecticut State Agencies (RCSA).

The project consists of creating a pedestrian greenway along the Naugatuck River in the Borough of Naugatuck as shown on plans entitled "Naugatuck Pedestrian Greenway Phase I," dated February 4, 2011. The project is located within the 100-year floodplain associated with the Naugatuck River.

The above referenced certification is hereby approved. No revisions or alterations to the approved plans are allowed without first obtaining written approval from this Division of such alterations. If there are any questions, contact Anna Laskin of the Inland Water Resources Division at (860) 424-3522.

Sincerely,

Denise Ruzicka
Director
Inland Water Resources Division

cc: Milone & MacBroom, Inc., 99 Realty Drive, Cheshire, CT 06410, attn: Mark Arigoni
Borough of Naugatuck/Engineering Department, 229 Church Street, Naugatuck, CT 06770, attn: James Stewart

Connecticut Department of

ENERGY &
ENVIRONMENTAL
PROTECTION

Permittee: Borough of Naugatuck
Engineering Department
229 Church Street
Naugatuck, CT 06770

Attn: James Stewart

Permit No.: SCEL-201102849
Permit Type: Stream Channel Encroachment
Town: Naugatuck
River: Naugatuck River
Map No: NA-NA-1 through 6

The Commissioner of Energy and Environmental Protection has approved your application to conduct certain regulated activities. Your attention is directed to the conditions of the enclosed permit or certificate. You should read the enclosed document carefully, as all construction or work must conform to that which is authorized.

If you have any questions concerning the enclosed document, please contact this office at (860) 424-3019.

Sincerely,

Nov. 23, 2011
Date

Denise Ruzicka, Director
Inland Water Resources Division

COPIES FURNISHED TO:
Conservation Commission
Inland Wetland Agency
Planning & Zoning Commission
All Parties
DEEP Fisheries
U.S. Army Corps of Engineers

Connecticut Department of

ENERGY &
ENVIRONMENTAL
PROTECTION

PERMIT

Permittee: Borough of Naugatuck
Engineering Department
229 Church Street
Naugatuck, CT 06770

Attn: James Stewart

Permit No.: SCEL-201102849
Permit Type: Stream Channel Encroachment
Town: Naugatuck
River: Naugatuck River
Map No: NA-NA-1 through 6

Pursuant to Connecticut General Statutes Section 22a-342 the Commissioner of Energy and Environmental Protection hereby grants a permit to the Borough of Naugatuck (the "permittee") to conduct activities riverward of Stream Channel Encroachment Lines for the Naugatuck River in the Town of Naugatuck in accordance with its application and plans which are part thereof filed with this Department on April 15, 2011 signed by James Stewart and dated April 13, 2011. The purpose of said activities is to create a pedestrian greenway along the Naugatuck River to provide linkages to important Borough of Naugatuck features. The proposed activity will begin at the Route 8/Maple Street Exit Ramp and will terminate on the west bank of the river at General Pulaski Walk riverward of Stream Channel Encroachment Lines associated with the Naugatuck River in the Town of Naugatuck (the "site").

AUTHORIZED ACTIVITY

Specifically, the permittee is authorized to construct a 5,239 linear feet continuous greenway route by connecting a series of unimproved trails, concrete sidewalks, asphalt walkways, and a pedestrian bridge riverward of Stream Channel Encroachment Lines associated with the Naugatuck River in accordance with said application and plans which are part thereof entitled "Naugatuck Pedestrian Greenway, Phase 1", dated February 04, 2011 and signed by Edward A. Hart, P.E. (the "plans").

This authorization constitutes the permits and approvals required by Section 22a-342 of the Connecticut General Statutes and is subject to and does not derogate any present or future property rights or other rights or powers of the State of Connecticut, conveys no

property rights in real estate or material nor any exclusive privileges, and is further subject to any and all public and private rights and to any federal, state, or local laws or regulations pertinent to the property or activity affected hereby.

PERMITTEE'S FAILURE TO COMPLY WITH THE TERMS AND CONDITIONS OF THIS PERMIT SHALL SUBJECT PERMITTEE AND PERMITTEE'S CONTRACTOR(S) TO ENFORCEMENT ACTIONS AND PENALTIES AS PROVIDED BY LAW.

This authorization is subject to the following conditions:

SPECIAL CONDITIONS

None

GENERAL CONDITIONS

1. **Initiation and Completion of Work.** At least five (5) days prior to starting any construction activity at the site, the permittee shall notify the Commissioner of Environmental Protection (the "Commissioner"), in writing, as to the date activity will start, and no later than five (5) days after completing such activity, notify the Commissioner, in writing, that the activity has been completed.

2. **Expiration of Permit.** If the activities authorized herein are not completed by three years after the date of this permit, said activity shall cease and, if not previously revoked or specifically extended, this permit shall be null and void.

   Upon the written request of the permittee and without notice, the Commissioner may extend the expiration date of this permit for a period of up to one year, which period may be extended once for a like period, in order for the permittee to complete activities authorized herein which have been substantially initiated but will not be completed by the expiration date of this permit. Any request to extend the expiration date of this permit shall state with particularity the reasons therefore.

   In making his decision to extend the expiration date of this permit, the Commissioner shall consider all relevant facts and circumstances including but not limited to the extent of work completed to date, the permittee's compliance with the terms and conditions of this permit, and any change in environmental conditions or other information since the permit was issued.

c. Separating staging areas at the site from the regulated areas by silt fences or haybales at all times.

d. Prohibiting storage of any fuel and refueling of equipment within 25 feet from any wetland or watercourse.

e. Preventing pollution of wetlands and watercourses in accordance with the document "Connecticut Guidelines for Soil Erosion and Sediment Control" as revised. Said controls shall be inspected by the permittee for deficiencies at least once per week and immediately after each rainfall and at least daily during prolonged rainfall. The permittee shall correct any such deficiencies within forty eight (48) hours of said deficiencies being found.

f. Stabilizing disturbed soils in a timely fashion to minimize erosion. If a grading operation at the site will be suspended for a period of thirty (30) or more consecutive days, the permittee shall, within the first seven (7) days of that suspension period, accomplish seeding and mulching or take such other appropriate measures to stabilize the soil involved in such grading operation. Within seven (7) days after establishing final grade in any grading operation at the site the permittee shall seed and mulch the soil involved in such grading operation or take such other appropriate measures to stabilize such soil until seeding and mulching can be accomplished.

g. Prohibiting the storage of any materials at the site which are buoyant, hazardous, flammable, explosive, soluble, expansive, radioactive, or which could in the event of a flood be injurious to human, animal or plant life, below the elevation of the five-hundred (500) year flood. Any other material or equipment stored at the site below said elevation by the permittee or the permittee's contractor must be firmly anchored, restrained or enclosed to prevent flotation. The quantity of fuel stored below such elevation for equipment used at the site shall not exceed the quantity of fuel that is expected to be used by such equipment in one day.

h. Immediately informing the Commissioner's Inland Water Resources Division (IWRD) of the occurrence of pollution or other environmental damage resulting from construction or maintenance of the authorized activity or any construction associated therewith in violation of this permit. The permittee shall, no later than 48 hours after the permittee learns of a violation of this permit, report same in writing to the Commissioner. Such report shall contain the following information:

9. **Certification of Documents.** Any document, including but not limited to any notice, which is required to be submitted to the Commissioner under this permit shall be signed by the permittee, a responsible corporate officer of the permittee, a general partner of the permittee, or a duly authorized representative of the permittee and by the individual or individuals responsible for actually preparing such document, each of whom shall certify in writing as follows:

   "I have personally examined and am familiar with the information submitted in this document and all attachments and certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief, and I understand that any false statement made in this document or its attachments may be punishable as a criminal offense in accordance with Section 22a-6 under Section 53a-157 of the Connecticut General Statutes."

10. **Submission of Documents.** The date of submission to the Commissioner of any document required by this permit shall be the date such document is received by the Commissioner. Except as otherwise specified in this permit, the word "day" as used in this permit means the calendar day. Any document or action which falls on a Saturday, Sunday, or legal holiday shall be submitted or performed by the next business day thereafter.

Any document or notice required to be submitted to the Commissioner under this permit shall, unless otherwise specified in writing by the Commissioner, be directed to:

Denise Ruzicka, Director
DEEP/Inland Water Resources Division
79 Elm Street, 3rd Floor
Hartford, Connecticut, 06106-5127

Issued by the Commissioner of Energy and Environmental Protection on:

11/23/11
DATE

Macky McCleary, Deputy Commissioner

cc: CT DOT, 2800 Berlin Turnpike, P.O. Box 317546, Newington, CT 06131-7546, attn: Mark Alexander
Milone & MacBroom, Inc. 99 Realty Drive, Cheshire, CT 06410, attn: Mark Arigoni

ADDENDA