



**STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION**



**2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546**

Phone: 860-594-3129

April 24, 2013

Subject: Project Nos.63-601 & 63-674: Reconstruction of Flatbush Avenue Connector (State Road 504) and New Britain – Hartford Busway Wetland Mitigation Contract 9, Town of Hartford.

NOTICE TO CONTRACTORS:

This is to notify all concerned and especially the prospective bidders that the bid opening for the subject project has been previously postponed to **May 8, 2013** at 2:00 P.M. in the Conference Room of the Department of Transportation Administration Building, 2800 Berlin Turnpike, Newington, Connecticut.

Addenda No. 2 is attached and can also be obtained on the Statewide Contracting Portal at http://www.biznet.ct.gov/scp_search/BidResults.aspx?groupid=64

This addendum is necessary to revise contract documents.

The Department has established a general mailbox to receive contractor questions. Please send all future questions to DOTContracts@ct.gov

Philip J. Melchionne

For: Gregory D. Straka
Contracts Manager
Division of Contracts Administration

APRIL 23, 2013
RECONSTRUCTION OF FLATBUSH AVENUE CONNECTOR (STATE ROAD 504)
AND
NEW BRITAIN – HARTFORD BUSWAY WETLAND MITIGATION CONTRACT 9

STATE PROJECT NO. 63-601
AND
FTA FEDERAL AID PROJECT NO. CT - TBD
STATE PROJECT NO. 63-674

HARTFORD

ADDENDUM NO. 2

SPECIAL PROVISIONS
NEW SPECIAL PROVISIONS

The following Special Provisions are hereby added to the Contract:

- NOTICE TO CONTRACTOR – GROUNDWATER MONITORING DATA
- NOTICE TO CONTRACTOR – MDC SANITARY SEWER ALIGNMENT
- ITEM NO. 0219011A SEDIMENTATION CONTROL SYSTEM AT CATCH BASIN
- ITEM NO. 1401636A SANITARY SEWER RELOCATION
- ITEM NO. 1401946A CUT AND PLUG ABANDONED SANITARY SEWER
- ITEM NO. 1403007A SPECIAL SANITARY MANHOLE
- ITEM NO. 1403085A MANHOLE WITH 6’ DIAMETER – OVER 10’ DEEP (SANITARY)
- ITEM NO. 1403086A 6’ I.D. MANHOLE (SANITARY SEWER)
- ITEM NO. 1403101A JUNCTION CHAMBER NO. 1
- ITEM NO. 1403102A JUNCTION CHAMBER NO. 2
- ITEM NO. 1408455A TEMPORARY SANITARY SEWER BYPASS

REVISED SPECIAL PROVISIONS

The following Special Provisions are hereby deleted in their entirety and replaced with the attached like-named Special Provisions:

- NOTICE TO CONTRACTOR – CLEANING OF CATCH BASINS, PIPES AND OUTLETS
- SECTION 1.03 – AWARD AND EXECUTION OF CONTRACT
- ITEM NO. 0202315A – DISPOSAL OF CONTROLLED MATERIALS

- ITEM NO. 0216013A – EXPANDED POLYSTYRENE FILL (1.25 PCF DENSITY)
- ITEM NO. 0216014A – EXPANDED POLYSTYRENE FILL (1.5 PCF DENSITY)
- ITEM NO. 0216015A – EXPANDED POLYSTYRENE FILL (2.0 PCF DENSITY)
- ITEM NO. 0601651A – RETAINING WALL (SITE NO. 1)
- ITEM NO. 0611010A – EXTERIOR INSULATION FINISH SYSTEM

CONTRACT ITEMS

NEW CONTRACT ITEMS

<u>ITEM NO.</u>	<u>DESCRIPTION</u>	<u>UNIT</u>	<u>QUANTITY</u>
0205006	ROCK IN TRENCH EXCAVATION 0'-15' DEEP	CY	10
0949362	PRUNUS SEROTINA, 24"-36" HT B.B. (BLACK CHERRY)	EA.	250
0949363	RHUS GLABRA, 18"-24" HT B.B. (SMOOTH SUMAC)	EA.	319
0949505	VIBURNUM ACERIFOLIUM, MAPLELEAF VIBURNUM 12"-15" HT B.B.	EA	748
0949600	JUNIPERUS VIRGINIANA, EASTERN REDCEDAR 3'-4' HT B.B.	EA.	555
0949907	BETULA POPULIFOLIA GRAY BIRCH 5'-6' HT. CLUMPS B.B.	EA.	555
1401946A	CUT AND PLUG ABANDONED SANITARY SEWER	LS	-
1403007A	SPECIAL SANITARY MANHOLE	EA	1
1403085A	MANHOLE WITH 6' DIAMETER – OVER 10' DEEP (SANITARY)	EA	1
1403086A	6' I.D. MANHOLE (SANITARY SEWER)	EA	1
1403101A	JUNCTION CHAMBER NO.1	EA	2
1403102A	JUNCTION CHAMBER NO.2	EA	2
1401636A	SANITARY SEWER RELOCATION	LF	735
1408455A	TEMPORARY SANITARY SEWER BYPASS	LS	-

REVISED CONTRACT ITEMS

<u>ITEM NO.</u>	<u>DESCRIPTION</u>	<u>ORIGINAL QUANTITY</u>	<u>REVISED QUANTITY</u>
0205004	ROCK IN TRENCH EXCAVATION 0'-10' DEEP	16 CY	20 CY

0219001	SEDIMENTATION CONTROL SYSTEM	11600 LF	12220 LF
0406169	HMA S1 EXTRA ASPHALT	3391 TON	3439 TON
0714050A	TEMPORARY EARTH RETAINING SYSTEM	314 SF	1254 SF
0949084	COMTONIA PEREGRINA	222	482
	SWEETFERN 15" - 18" HT. B.B.		
0949086	CLETHRA ALNIFOLIA	780	1991
	SUMMERSWEET 2'- 3' HT. B.B.		
0949142	QUERCUS PALUSTRIS, PIN OAK, 24" - 36" HT. NO.3 CONTAINER	216	222
0949208	ACER SACCHARINUM, SILVER MAPLE, 18" - 24" HT. B.B.	469	560
0949349	MYRICA PENNSYLVANICA	258	404
	NORTHERN BAYBERRY 18"- 24" HT. B.B.		
0949522	VIBURNUM DENTATUM	40	330
	ARROWWOOD VIBURNUM 2'- 3' HT. B.B.		
0949547	VIBURNUM LENTAGO	99	418
	NANNYBERRY VIBURNUM 3'- 4' HT. B.B.		
0949709	AMELANCHIER CANADENSIS	24	170
	SHADBLOW SERVICEBERRY 4'- 5' HT. B.B.		

PLANS

NEW PLANS

The following Plan Sheets are hereby added to the Contract:

01.08.00.A2

01.08.01.A2

01.08.02.A2

01.08.03.A2

01.08.04.A2

REVISED PLANS

The following Plan Sheets are hereby deleted and replaced with the like-numbered Plan Sheets:

01.02.01.A2

01.03.01.A2

01.03.16.A2

01.04.02.A2

01.06.07.A2

02.02.001.A2

02.04.015.A2

QUESTIONS & ANSWERS

Q. Is it possible for the department to provide a map of the project limits showing depths of groundwater which would further clarify the note pertaining to groundwater in the “Notice to Contractor – Environmental Investigations” on page 15 of the specifications?

A. There are two monitoring wells on the mitigation site north of the existing ramp. A Notice to Contractor is added in this addendum that includes two memos containing groundwater monitoring data. No monitoring wells were installed on the portion of the site south of the existing ramp.

Q. Is topsoil and excess earth from within the designated LLAOEC reusable for construction of the wetland (ITEM #0949007A)?

A. From an environmental standpoint, any soil excavated from the LLAOEC can be re-used on-site as long as it conforms to the requirements of Item No. 949007A-Wetland Creation.

Q. On page 14 of the special provisions a list of approved facilities for disposal of controlled materials is noted as being included in Item No. 0202315A. There is however no list included under that specification. Can the department please provide the list of approved facilities for disposal of controlled materials?

A. The special provision for Item 0202315A - Disposal of Controlled Material has been revised to include the referenced list and is included in this addendum.

Q. On sheet 01.04.04 of the plan there is work shown for an existing 42” sanitary sewer line but we are unable to find associated bid items. Please provide us with the bid item for this scope of work.

A. All bid items, special provisions and plans for the sanitary sewer relocation work have been included as part of this addendum.

Q. The site is scattered with all manner of rubbish and refuse. It also appears there is a significant quantity of rubber tires and other potentially hazardous materials. Under which pay item will the handling and disposal of these items be paid?

A. At this time, the Department is unaware of a significant quantity of tires or any potentially hazardous materials on the site. If such items are present at the time of construction an item may be added for the disposal of regulated items. Regular trash and debris will not be paid for as Controlled Materials.

Q. IF concrete debris and material utilized for contractors construction access comes into contact with areas designated as AOEC / LLAOEC will the haul off and disposal of this material be paid for under Item #0202315A – Disposal of Controlled Materials”?

A. The contractor shall use dry decontamination procedures for all surfaces that come into contact with material within the AOEC/LLAOEC and dispose of the residual materials only (not the concrete, etc.) as Controlled Material if it cannot be reused on-site.

Q. On Contract Plan Sheet 01.03.16, the steel reinforcement for the 8" concrete wall sections called out in section A-A is different from Note #4 for catch basins up to 10' deep. Which is the correct reinforcement for the 8" concrete walls?

A. The reinforcement called out in Note #4 is correct. The note on Section A-A has been revised. Revised Sheet No. 01.03.16.A2 has been included as part of this addendum.

Q. Can the department please provide any engineering inspection reports and additional information regarding the existing EB 84 on ramp? During a site visit it was apparent temporary repairs had recently been completed and are the purpose for the shoulder closure beginning at about pier 14. Any additional information would assist us in assessing and assigning the risk involved in the lump sum bid item #503516A – “Maintaining Existing Bridge”.

A. The latest inspection report for Bridge No. 03369 has been posted on the State of Connecticut’s Contracting Portal for Project Nos. 63-601 & 63-674. Bidders are reminded to download information contained in the Portal that they require access to after the letting since it is removed from the Portal at that time.

Q. There are numerous areas in the plans which call for temporary pavement. Can the department please provide a detail for this work as well as clarify the means for getting paid to complete the work?

A. Revised Sheet No. 01.03.16.A2 with a section for the Temporary Pavement has been included as part of this addendum. The call outs in this detail pertain to the respective pay items included in the contract.

Q. From station 112+08 to station 112+62 cross section drawing 01.05.05 shows Expanded Polystyrene Fill. Sheet 01.04.02 shows live traffic in stage 2 adjacent to the work for that length of roadway (station 112+08 to 112+62). There is a 7’ excavation required to get to the bottom of the Expanded Polystyrene Fill in this area. With the adjacent live traffic it appears that a temporary earth retaining system is going to be required during the EPS fill construction in stage 2. However, there does not appear to be sufficient quantity tabulated in bid item 07.14.050 to cover this area. Please confirm the department’s intent regarding payment for temporary earth retention with respect to this area of work.

A. Revised Sheet No. 01.03.16.A2 with a section for the Temporary Pavement has been included as part of this addendum. The call outs in this detail pertain to the respective pay items included in the contract.

Q. Specification section #202315A, page 215 paragraph A refers to “treatment/recycle/disposal facilities (from the attached list)” There was no attached list. Can you please provide?

A. The special provision for Item 0202315A - Disposal of Controlled Material has been revised to include the referenced list and is included in this addendum.

Q. Special Provision 0202315A, Disposal of Controlled Materials, references an attached table of Department-approved treatment/recycle/disposal facilities. We cannot locate such table; please provide information as to where the table is located.

A. The special provision for Item 0202315A - Disposal of Controlled Material has been revised to include the referenced list and is included in this addendum.

Q. In regards to the table referenced in question 1, has the Department updated its list of Department-approved treatment/recycle/disposal facilities to reflect current capabilities/willingness of the listed facilities to accept future material generated from AOEC's and LLAOEC's?

A. It is the contractor's responsibility to contact the facilities to determine the amount of material they can/will accept and to coordinate the disposal schedule with them.

Q. Regarding Item No. 010117A ; written in bold and underlined the Spec says that it is anticipated that all materials requiring offsite disposal can be excavated and directly loaded and transported without utilizing the WSA. The WSA spec - Item No.0101128A repeats the preceding statement. The Spec says that the WSA will be used only for an emergency as needed basis. The estimated quantity for Item No. 010117A is 17,200 CY, only 175 CY is anticipated for reuse from the WSA. Is Item No. 010117A intended for the temporary stockpiling on site & reuse on site of AOEC materials. Please Clarify .

A. It is anticipated that the contractor will be able to handle all controlled material and live-load directly from the site, however, an allocation was made of a maximum of 20% of all soil to be handled having to go through the WSA (17,200 cy). Any soil that remains on site and is reused within the AOEC and LLAOEC shall not be paid for under item 010117A. The 125 CY estimated for reuse is based on the small amount of soil anticipated to be reused once it is brought to the WSA.

Q. Item # 0202315A on page # 214 of the specifications states that there is a list of treatment/recycle/disposal facilities attached. There is no list attached, please provide.

A. The special provision for Item 0202315A - Disposal of Controlled Material has been revised to include the referenced list and is included in this addendum.

Q. Reference Item No. 0202315A - Disposal of Controlled Materials, the Special Provision for this item states in Construction Materials - A. Submittals - "The apparent low bidder shall submit in writing, within fourteen days after Bid opening, a letter listing the names of the treatment/recycling/disposal facilities (from the attached list)...". The list of approved facilities was not provided. Please provide.

A. The special provision for Item 0202315A - Disposal of Controlled Material has been revised to include the referenced list and is included in this addendum.

Q. Reference Plan Sheet 1.03.09, this plan indicates a "Relocated 42-inch Sanitary Sewer" and states "See Utility Subset for Details". Utility Subset (08) is not included in the plans. No pay items or specifications exist for performing this work. Please clarify if this work is to be included in the Contract and, if so, how it is to be paid for. Please provide Utility Subset (08).

A. Plan Subset 1.08 and all bid items for the sewer relocation work are included in this addendum.

Q. Reference Plan Sheet 1.03.01, General Note 7 states "all drainage structures and pipes within the project limits shall be cleaned." The Special Provisions contain Notice to Contractor - Cleaning of Catch Basins, Pipes and Outlets (p. 39) that indicates cleaning of catch basins, pipes and outlets shall not be measured for payment, but shall be included in the general cost of work. However, there is an item for "Clean Existing Catch Basin" (Item #0653001). Most Department projects have pay items for both cleaning catch basins and culverts because it is very difficult to determine the limits and extent of cleaning required on a pre-bid basis. Please consider adding an item for "Clean existing Culvert" by the linear foot and revising the Notice to Contractor language.

A. The intention is to pay for the cleaning of all existing catch basins from Flatbush Ave north under Item 0653001 Clean Existing Catch Basin. The cleaning of all proposed drainage structures and pipes (including outlets) shall not be measured for payment. Plan Sheet 1.03.01 and the Special Provision NTC - Cleaning of Catch Basins, Pipes and Outlets have been revised accordingly in this addendum.

Q. Reference Plan Sheet 2.05.007 - Existing Waste Stockpile Area, Note 8 states that "the Contractor shall leave all components in place at the end of the project after the WSA has been decontaminated per the project specifications." The Special Provisions for Item #0101128A - Securing, Construction and Dismantling of a Waste Stockpile and Treatment Area states "Upon completion of the Project and following removal of all residual Controlled Materials, the Contractor shall return the WSA to its original condition." However, the Basis of Payment states the work includes "dismantling the WSA." Does the Department want the WSA left in its

original condition as the Contractor found it or do you want the contractor to dismantle it upon completion of the project. Please clarify.

A. Modifications to the existing WSA layout are allowed to accommodate construction sequencing and schedule of controlled material generation. Upon completion, the WSA is to be returned to its original condition/configuration and not dismantled in its entirety.

Q. Reference Plans Sheet 01.06.07 - Retaining Wall 102, the plans call for a wall supplied by the Reinforced Earth Company. Upon contacting the Reinforced Earth Company, they have stated that since the wall is so small, the engineering alone will make using an MSE wall by them cost prohibitive and they will not be quoting the project. Since they are the only manufacturer specified, could the Department please allow for other types of walls (modular and cast-in-place)? Although the Special Provisions mention these other options, they also state "The wall chosen shall be selected from the list shown on the contract drawings....The Engineer will reject any proposed retaining wall that is not listed on the contract drawings."

A. The special provision for Item # 0601651A Retaining Wall (Site No. 1) lists other manufacturers for the MSE wall that can be used. A revised special provision is included in the Addendum. The note restricting the procurement of the MSE wall from Reinforced Earth Company stated on Plan Sheet 01.06.07 - Retaining Wall 102 has been removed. The revised drawing is also included in the addendum.

Q. Reference Item #0503516A - Maintain Existing Bridge, the Special Provision calls for the Contractor to be responsible to perform any repairs or alterations and/or provide any necessary means of strengthening the existing structure in order to allow it to remain stable and carry traffic until such time that it can be removed. It is nearly impossible for the Contractor to determine, on a pre-bid basis, what repairs and/or strengthening means might be required to maintain this structure. Please provide a design by the Department's Engineer or revise the item to an estimated allowance, until such time that a design can be provided.

A. The latest inspection reports for Bridge No. 03369 have been posted on the bid portal on the Departments website. It is not anticipated that extensive repairs will be required for Bridge No. 03369 in order to maintain one lane of ramp traffic on the existing structure during each construction stage. A temporary precast barrier is already in place along existing spans to isolate the existing girders within these spans that require repair and are prevented from carrying wheel loads.

The Special Provision for Item #0503516A Maintain Existing Bridge requires the Contractor to perform any repairs or alterations or provide any necessary means of strengthening the existing structure in order to allow it to remain stable and carry traffic until such time that it can be removed. Of particular concern is the maintenance of the three northern spans during and following the removal of a portion of those spans in Stage 1.

During construction the Contractor and the Engineer shall review the existing structure and areas requiring alterations or temporary strengthening, in order to carry live traffic, which will be agreed

upon by the Contractor and the Engineer. The Contractor shall prepare and submit to the Engineer for review, his proposed methods to accomplish any alterations or strengthening measures, in accordance with Article 1.05.02. It is not the Department's intent to provide a design for the strengthening of the existing structure.

If any components require repair or replacement, in order to maintain the safe performance of the structure throughout construction, the Contractor shall perform this work at no additional cost to the State.

Q. Reference Plan Sheets 01.03/04 and 1.04/18-20, the Stage 2 cross sections show EPS with a 2.0 PCF density in the same location where the Typical Section show EPS with 1.5 and 1.25 PCF densities. Which detail is correct?

A. The typical sections are all correct as are the stage construction sections. The higher density material is to be used only in the area where there is temporary pavement. The typical section holds for the rest of the ramp. Refer to the note on plan sheets 1.04.18-20 "Use EPS (2.0 PCF density) 4' deep under temporary pavement. See expanded polystyrene typical section for remaining EPS density configuration"

The Detailed Estimate Sheets do not reflect these changes.

The Bid Proposal Form has been revised to reflect these changes.

There will be no change in the number of calendar days due to this Addendum.

The Federal Wage Rates dated March 1, 2013 are hereby deleted and replaced with the attached Federal Wage Rates dated April 12, 2013.

The foregoing is hereby made a part of the contract.

NOTICE TO CONTRACTOR – GROUNDWATER MONITORING DATA

The following material is for information only in accordance with Article 1.02.04 – Examination of Plans, Specifications, Special Provisions and Site of Work.

TECHNICAL MEMORANDUM

TO: Anthony Morelli, Baker Engineer

FROM: Marie G. Bartels, P.E., Randall T. States, P.E., GeoDesign, Inc.

DATE: May 28, 2009

RE: Observation Wells North of Flatbush Avenue (183-10.1)
Extra Work to Amtrak Access Road

This technical memo is in accordance with our February 24, 2009 Extra Work Scope Letter to Baker. This memo summarizes the conditions encountered and well installation details for monitoring wells installed north of Flatbush Avenue. The wells are located between the on and off ramps of I-84 at Exit 45. See attached figure for site and monitoring well locations.

Objective

GeoDesign installed two monitoring wells (MW-1 and MW-2) at the request of Baker Engineering. GeoDesign coordinated the services of New England Boring Contractors of CT, Inc. (NEBC) to perform two Standard Penetration Test (SPT, ASTM D1586) borings, and complete the borings with the installation of two monitoring wells. We understand the purpose of these monitoring wells is to evaluate the local hydrology and determine if the area is suitable for wetland creation.

Geology

Published geologic data for this locale indicate that Park River (South Branch) historically passed through this area. Mapping from 1976 (prior to on and off ramp construction), indicates river alluvium consisting of very fine sand and silt, with organic material. Due to the construction of the on and off ramps for Exit 45, the river was relocated to the east, and is currently parallel with, and to the west of, Brookfield Street. Movement of the river and construction of the on and off ramps likely resulted in fill placement.

Subsurface Explorations

Proposed boring locations were surveyed and staked out by the Connecticut Department of Transportation (ConnDOT) on April 23, 2009. ConnDOT provided GeoDesign with a Northing, Easting, and Elevation at each location (attached). The borings were performed by NEBC at the staked locations, and were logged by GeoDesign personnel on May 13th, 2009. The attached figure shows the approximate locations of the borings. Boring logs are also attached.

Subsurface Conditions

Due to the purpose of these borings and required monitoring wells, the borings were terminated within the Fill strata at a depth of 17 feet below ground surface (bgs). The Fill generally consisted of Clay and Silt with varying amounts of fine Gravel and fine to medium Sand. The boring split spoon samples contained trace amounts of asphalt, root fibers/organics, wood, brick, and ash. In Boring MW-1 from a depth of 15 to 17 feet bgs (Sample S-6), a petroleum odor and sheen was observed. In MW-2, a petroleum odor was observed in the auger cuttings from a depth of about 10 to 15 feet bgs.

In MW-1, the soil consistency ranged from loose to dense (granular), or stiff to very stiff (cohesive). In MW-2, the consistency ranged from soft to very stiff (cohesive), and was loose at a depth of 15 feet bgs (granular).

Observation Well Construction

Wells consist of two-inch inside diameter PVC pipe, installed to a depth of 15 feet bgs. The bottom 10 feet (from 5 to 15 feet bgs) are screened, with an unscreened portion above it to two feet above ground surface. Filter sand was placed around the outside of the pipe to 4 feet bgs. Two feet of bentonite chips were placed to 2 feet bgs, and a concrete collar was placed to the ground surface surrounding a protective steel standpipe with a 2-foot stickup (see the boring logs for well construction details).

Groundwater Observations

Groundwater observations were made during drilling, shortly after drilling, and two days after drilling. Observations are as shown on the boring logs and in the following table:

Boring	Reading 1		Reading 2		Reading 3		Reading 4		Reading 5	
MW-1	5.0*	During Drilling	3.2	After 1 hour	2.8	After 3.5 hours	2.0	After 1 day	1.5	After 2 days
MW-2	8.8	During Drilling	5.7	After 0.3 hours	4.8	After 0.8 hours	1.6	After 1 day	1.4	After 2 days

Notes: All well readings are in feet bgs.

Readings 2 through 5 were taken through the well.

Reading 5 was read following about 0.8 inches of rain.

Groundwater levels will vary depending on factors such as nearby river levels, precipitation, surface conditions, temperature, season, and other factors occurring since the time measurements were made.

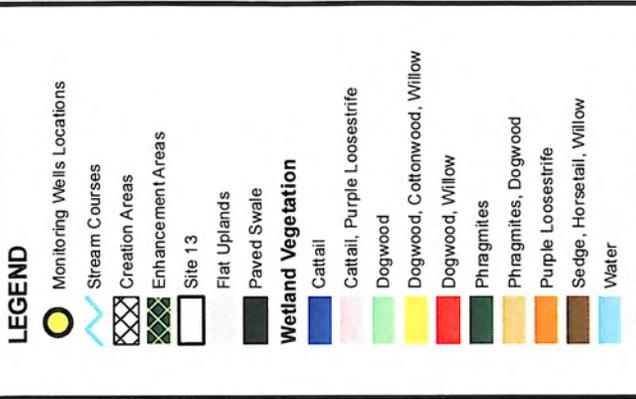
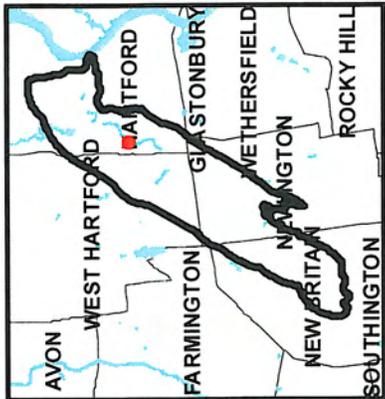
Future Laboratory Testing

Soil samples obtained from both borings remain in sealed jars and are being kept refrigerated at Geo**Design** in the event that environmental testing is desired. If requested, Geo**Design** is available to retain a laboratory and send the samples for testing.

Limitations

This report is subject to the limitations, attached.

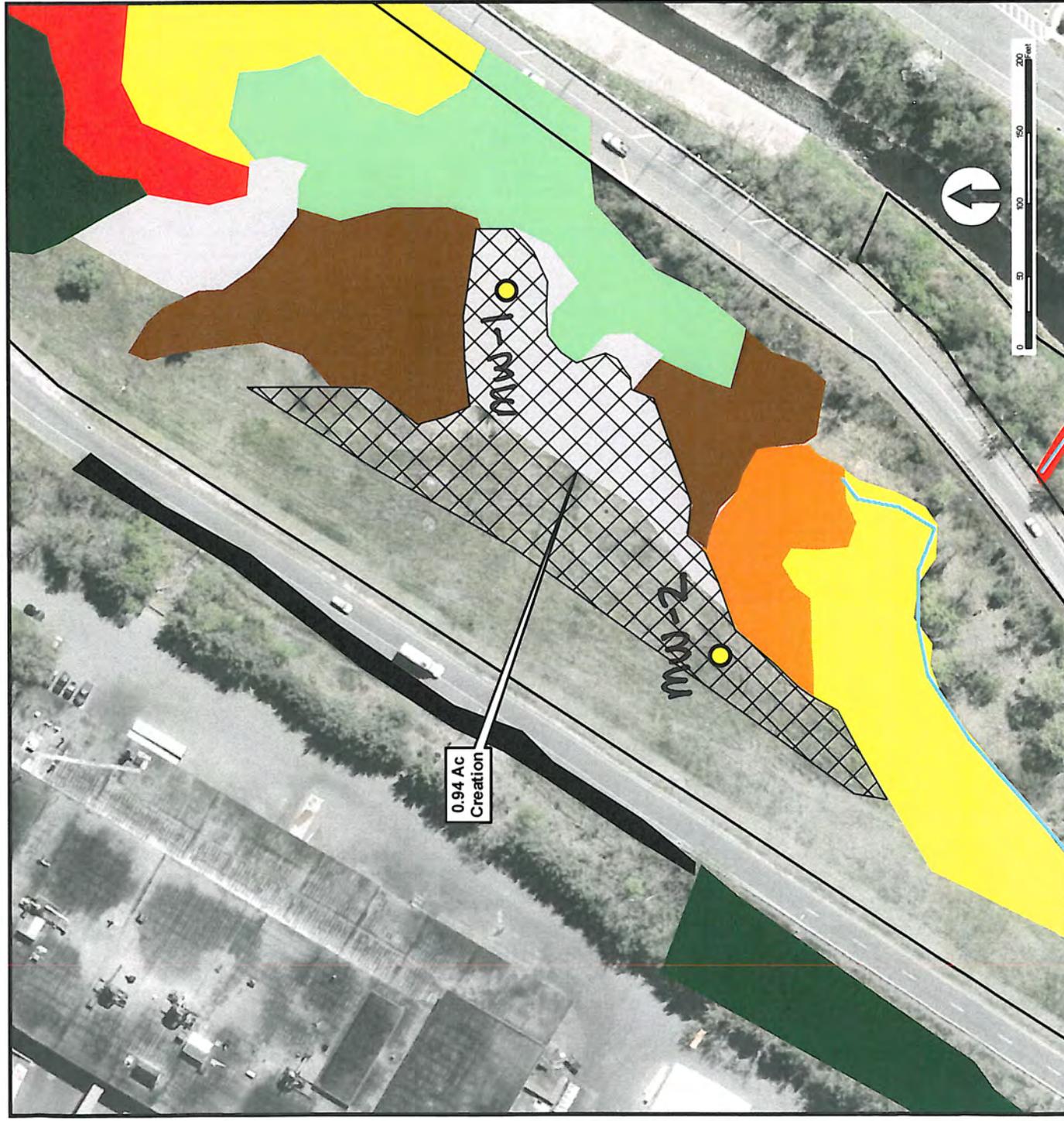
Attachments: Boring Location Plan
Boring Logs
ConnDOT Survey Submission
Limitations



Wetland Mitigation Site #13

Monitoring Well Locations
New Britain-Hartford Busway
State Project # 171-305

Data source: Aerial - Microsoft Virtual Earth (2008)



January 2009 - Fitzgerald & Halliday, Inc. - Project # 615 - original/in color

subject: **SURVEY SUBMISSION
MONITORING WELLS
STAKEOUT**

date: April 29, 2009

memorandum

to: Mr. Michael Coleman
Transportation Engineer 3
Bureau of Engineering and
Highway Operations

from: Steven Sokolowski, PLS
District-1 Principal Engineer
Bureau of Engineering and
Highway Operations

Attn: Jeff Beckwith

TOWN: HARTFORD
PROJECT: 171-305
LOCATION: BUSWAY(Wetland Mitigation site# 13))

The two monitoring wells have been stake out in the field per your memorandum dated April 23, 2009.

Monitoring well #1 N,E, ELV.= 832,873.8, 1,001,350.8, ELV. 41.04'
Monitoring well #2 N,E, ELV.= 832,725.9, 1,011,097.7, ELV. 42.74'

The contact person is Mr. Ed Szkoda at 258-4578 should you have any questions.

Attachments
Steven Sokolowski: sms

cc: Robert Baron
Ed Szkoda

File: 171-305boringsA.doc

GEOTECHNICAL LIMITATIONS

Explorations

1. The information submitted in this memorandum is based in part upon the data obtained from subsurface explorations. The nature and extent of variations between these explorations may not become evident until construction. If variations then appear evident, it will be necessary to reevaluate the recommendations of this report.
2. The generalized soil profile described in the text is intended to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized and have been developed by interpretations of widely spaced explorations and samples; actual soil transitions are probably more erratic. For specific information, refer to the boring logs.
3. Water level readings have been made in the drill holes at times and under conditions stated on the boring logs and in the memorandum. It must be noted that fluctuations in the level of the groundwater may occur due to variations in rainfall, temperature, and other factors occurring since the time measurements were made.

Review

4. In the event that any changes in the nature, design or location of the proposed construction is planned, the information contained in this report shall not be considered valid unless the changes are reviewed and conclusions of this report modified or verified in writing by **GeoDesign**. It is recommended that this firm be provided the opportunity for a general review of final design and specifications in order that earthwork and foundation recommendations may be properly interpreted and implemented in the design and specifications.

Use of Memorandum

5. This memo has been prepared by **GeoDesign** for the exclusive use Michael Baker Engineering, NY (Baker), the Connecticut Department of Transportation (ConnDOT), and other members of the design team for specific application to Wetland Mitigation at Site #13. No other warranty, express or implied, is made. This memo is for design purposes only and is not sufficient to prepare an accurate bid. Contractors wishing a copy of the report may secure it with the understanding that its scope is limited to design considerations only.



LETTER OF TRANSMITTAL

Deliver To: Tony Morelli	From: Linda Perelli Wright
Company: Baker Engineering	Voice/Fax: 860.257.2402
Project: Busway – Wetland Mitigation Site #13	Date: May 17, 2010
Subject: Site #13 Year-Long Groundwater Depth Data	

Per our scope and contract, FHI’s groundwater monitoring task (for one year) is complete. The year-long results are attached.

Please Find:

1. Summary table with one year of groundwater-depth monitoring data for Wetland Mitigation Site #13 (May 2009 to May 2010)
2. A figure showing the locations of the monitoring wells.

These are transmitted as checked below:

- For approval
- For your use
- As requested
- For review and comment

Remarks:

Call me with any questions or comments, at 860-256-4915.

Copy To: FHI File (615.10)

Signed: 

(If enclosures are not as noted, kindly notify us at once.)

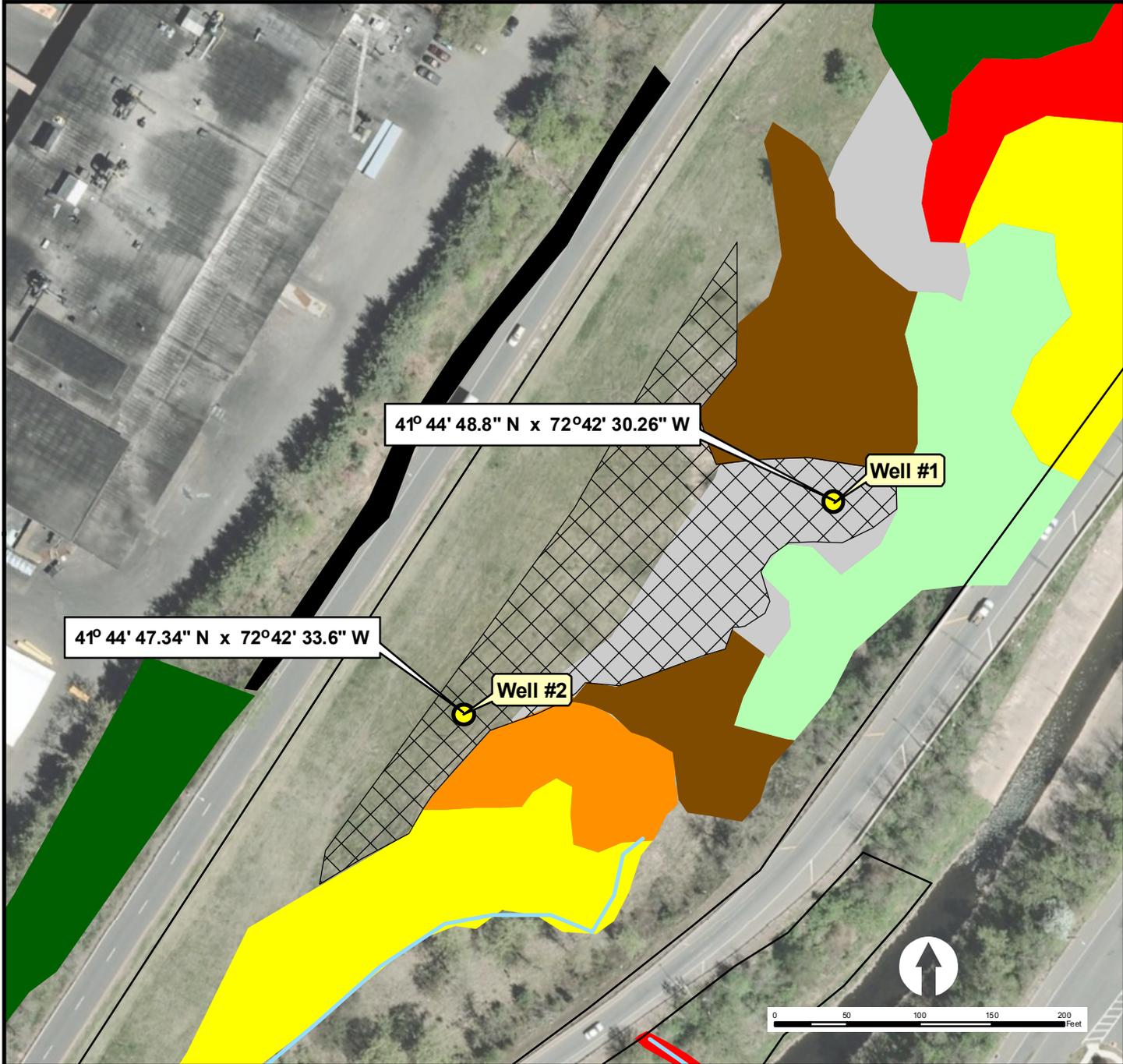
New Britian - Hartford Busway (State Project 302-008)
Wetland Mitigation Site #13 - Well Monitoring Data (Groundwater Depth)

2009-2010 Monitoring Data						Precipitation (PPT) Data**	
	Date	Time	Depth to Groundwater from Ground Surface* (Inches)		Recorded By	Total PPT Month to Date (Inches)	Total PPT Year to Date (Inches)
			MW2	MW1			
May	5/28/2009	10-11 AM	24	35	J.Weiss	3.83	12.40
June	6/15/2009	3-4 PM	22	17	J. Weiss	2.65	15.85
	6/30/2009	3-4 PM	11	18	J. Weiss	5.92	19.12
July	7/15/2009	2-3 PM	14	28	J. Weiss	3.09	22.21
	7/30/2009	230-330PM	9	10	J. Weiss	8.80	27.92
August	8/17/2009	2-3 PM	21	40	J. Weiss	0.75	29.51
	8/31/2009	3-4 PM	24	41	D. Laiuppa	2.46	31.22
September	9/15/2009	230-330PM	34	54	J. Weiss	0.50	31.72
	9/29/2009	130-230PM	40	61	J. Weiss	1.83	33.05
October	10/15/2009	9-10AM	40	50	J. Weiss	2.13	35.18
	10/29/2009	2-3 PM	25	13	J. Weiss	5.55	38.60
November	11/16/2009	330-4 PM	19	14	J.Weiss	0.94	39.59
	11/30/2009	9-10 AM	14	12	J.Weiss	2.38	41.03
December	12/15/2009	2-3 PM	14	8	J. Weiss	3.13	43.89
	12/31/2009	11-12 AM	22	19	J. Weiss	3.79	44.82
January	1/15/2010	11-12 AM	28	40	J. Weiss	0.66	0.66
	2/1/2010 ¹	12-1 PM	24	24	J. Weiss	1.95	1.95
February	2/15/2010	2-3 PM	25	41	J. Weiss	0.12	2.07
	2/27/2010	9-10 AM	19	15	J. Weiss	3.47	5.42
March	3/15/2010	2-3 PM	18	11	J. Weiss	2.35	7.60
	3/31/2010	230-330PM	12	7	D. Laiuppa	7.48	12.90
April	4/14/2010	4-5 PM	18	28	J. Weiss	0.38	13.28
	4/27/2010	230-330 PM	15	29	J. Weiss	1.55	14.45
May	5/11/2010	330-430 PM	29	46	J. Weiss	0.46	14.91

* Heights of well casings were subtracted from total measurements to yield depth from ground surface.

** Source of PPT data: <http://www.wunderground.com/history/airport/KHFD>

¹ monitoring scheduled for 1/29/2010 prevented by blizzard-like conditions



LEGEND

- Monitoring Wells Locations
- Stream Courses
- Creation Areas
- Enhancement Areas
- Site 13
- Flat Uplands
- Paved Swale
- Wetland Vegetation**
- Cattail
- Cattail, Purple Loosestrife
- Dogwood
- Dogwood, Cottonwood, Willow
- Dogwood, Willow
- Phragmites
- Phragmites, Dogwood
- Purple Loosestrife
- Sedge, Horsetail, Willow
- Water

Wetland Mitigation Site #13

Monitoring Well Locations

New Britain-Hartford Busway State Project # 171-305



NOTICE TO CONTRACTOR – MDC SANITARY SEWER ALIGNMENT

The Contractor is advised that the actual location of the proposed MDC sanitary sewer shown in the plans at the time of advertising has been revised with the issuance of Subset 01.08 in Addendum No. 2. The relocated MDC sanitary sewer shall be constructed at the location shown in Addendum No. 2.

ITEM #0219011A – SEDIMENT CONTROL SYSTEM AT CATCH BASIN

Work under this requirement shall conform to the applicable requirements of section 2.19 of Form 816, amended as follows:

2.19.04—Method of Measurement - *Replace with the following:*

This work will be measured for payment by each system installed and accepted per catch basin. Replacement systems will not be measured for payment.

2.19.05—Basis of Payment – *Replace with the following:*

Payment for this work will be made at the contract unit price for each “Sediment Control System at Catch Basin” complete in place, which price shall include all materials, tools, equipment, labor and work incidental to the installation, maintenance, replacement, removal, and disposal of the system and surplus material. No payment shall be made for the clean out of accumulated sediment.

PAY ITEM

Sediment Control System at Catch Basin

PAY UNIT

EA.

ITEM #1401636A – SANITARY SEWER RELOCATION

Description: The Contractor shall furnish and install Reinforced Concrete Pipe (RCP) and fittings for sanitary sewers to the lines and grades shown on the contract drawings as shown, specified or directed by the Engineer. The work includes all shown, specified or directed, including, but not limited to transporting and storing materials, trenching, properly disposing of unused excavated materials, removing and properly disposing of existing sewers and appurtenances, furnishing and installing temporary and permanent supports for utilities, furnishing and installing geotextile fabric, trench stabilization, bedding material, utility identification tape and consolidation backfill, miscellaneous grading, furnishing and installing transition couplings, modifications to existing connections, dewatering, handling of existing sanitary sewer flows testing and all incidental work, except as otherwise provided for.

It is essential to the operation of the existing sewerage system that there be no interruption of the wastewater flow throughout the duration of this project. An interruption shall be considered, but may not be limited to, any condition that, in the opinion of the Engineer, adversely affects or alters operation of any portion or component of the existing sewage treatment and collection system, including the flows associated therewith; allows the level of sewage flow to increase, rise, collect, surcharge and/or overflow existing facilities in any manner; or results in any operational or permit violations. Temporary facilities such as dams, bulkheads, pumping equipment (both primary and backup units as required), conduits, electrical power, and all other labor and equipment necessary to intercept and maintain the existing sewage flow before it reaches the point where it would interfere with the work, carry it past the work, and return it to the existing facilities beyond the work shall be provided, maintained and operated.

Inspect the newly constructed sewer line(s) with closed circuit color television equipment and recording the inspection(s) on DVD for the Engineer's review and records, upon completion of the construction of the sanitary sewer and appurtenances and then again at the end of the one year maintenance period.

Materials:

All pipe and fittings shall be manufactured for this project and no pipe shall be furnished from stock.

The pipe units shall be of the classes indicated on the drawings and shall conform to ASTM C76, Class IV, wall B or C straight pipe. The pipe interior shall be smooth and even, free from roughness, projections, indentations, offsets, or irregularities of any kind. The concrete mass shall be dense and uniform.

The pipe shall be clearly marked as required by ASTM C76 in a manner acceptable to the Engineer. The markings may be at either end of the pipe for the convenience of the manufacturer, but for any one size shall always be at the same end of each pipe length. Pipe shall not be shipped until the compressive strength of the concrete has attained 4,000 psi and not

before five days after manufacture and/or repair, whichever is the longer. All pipe segments delivered to the site shall be inspected by the Engineer before placement.

Pipe shall have a minimum laying length of approximately 8-ft, except for closure pieces as approved by the Engineer. Have available at the site of the work sufficient pipe of various lengths to affect closure at manholes or structures that cannot be located to accommodate standard lengths. Short lengths of pipe made for closure etc may be used in the pipeline at the end of construction if properly spaced. The length of the incoming and outgoing concrete pipe at each structure shall not exceed 4-ft. Maximum laying length shall not exceed 16-ft, but the installation of 16-ft lengths will depend upon the ability to handle such lengths of pipe in sheeted trenches, comply with trench width requirements, maintain the integrity of the sheeting and avoid disturbance to adjacent ground. If in the opinion of the Engineer the use of 16-ft lengths is impracticable, shorter lengths shall be used.

After manufacture, each length of pipe shall be checked against the length noted on the shop drawings prior to the shipment of the pipe to the site. Pipe more than 1-1/2-in longer than that shown on the shop drawings shall not be used on this project. Variations in length of the same pipe shall not exceed ASTM C76 requirements.

During manufacturing, measuring devices shall be used to assure joint assembly is within the tolerance of ASTM C76 and these Specifications.

The Engineer shall have the right to cut cores from pipe delivered to the site as he/she desires for such inspection and tests as he/she may wish to apply. Holes left by the removal of cores shall be filled in an approved manner by and at the expense of the manufacturer. Core drilling shall be carried out by the pipe manufacturer at his/her expense. The number of cores shall not exceed the requirements of ASTM C76.

All pipe which has been damaged after delivery will be rejected and if such pipe already has been laid in the trench, it shall be acceptably repaired, if permitted, or removed and replaced, entirely at the Contractor's expense.

Pits, blisters, rough spots, breakage and other imperfections may be repaired, subject to approval by the Engineer, after demonstration by the manufacturer that strong and permanent repairs result. Repairs shall be carefully inspected by the Engineer before final approval. Non-shrink cement mortar used for repairs shall have a minimum compressive strength of 6,000 psi at the end of 7 days and 7,000 psi at the end of 28 days, when tested in 3-in cylinders stored in the standard manner. Epoxy mortar may be utilized for repairs subject to the approval of the Engineer.

Supply a length of concrete pipe with three holes of proper diameter cut at the quarter points for each of the Y-saddles required. The holes shall be cut halfway through the pipe by the manufacturer while the concrete is still "green" leaving the reinforcement intact. These pipes shall be reserved for use with Y-saddles only and the remaining concrete and reinforcement shall be cut in the field only from the hole to be used. The holes not used shall be plugged with non-

shrink cement mortar as specified above using a neat cement slurry prior to plugging with mortar. Any alternate method for providing for service connections shall be submitted to the Engineer for approval.

JOINTS FOR REINFORCED CONCRETE PIPE

Joints shall be concrete and rubber tongue and groove or bell and spigot type joint conforming to ASTM C361 with provisions for using a round rubber O-Ring gasket in a recess in the spigot end of the pipe. The bevel on the bell of the pipe shall be between 1-1/2 degrees and 2-1/2 degrees. The diameters of the joint surfaces which compress the gasket shall not vary from the true diameters by more than 1/16-in.

The round rubber "O-Ring" gaskets shall conform to ASTM C443 except as otherwise specified herein. Two gaskets shall be submitted to the Engineer for tests at least 30 days before joining any pipe.

Specimens shall be heated in a dry oven to 150 degrees F for 6-hour duration and five specimens shall be tested by immersion, one each as follows: 2-hour immersion in petroleum ether, 72-hour immersion in saturated Hydrogen Sulfide solution, 72-hour immersion in 1 percent NaOH solution, 72-hour immersion in standard soap solution (80 percent alcohol), 72-hour immersion in 10 percent NaCl solution. The specimens shall show no detrimental change in color, texture, or feeling upon completion of the above tests. Specimens of the gaskets shall be subjected to tensile tests of approximately 100 psi before and after immersion and heating tests and shall show an elongation of at least 25 percent. Upon release from the tensile tests, each specimen shall return to its original length. The manufacturer shall supply test data and affidavits showing compliance with these requirements. Tests shall have been conducted within six months of the start of manufacture of the pipe.

The gaskets shall be designed and manufactured so that the completed joint will withstand an internal water pressure in excess of 13 psi for a period of 10 minutes without showing any leakage by the gasket or displacement of it. The pipe manufacturer shall provide facilities for testing the effectiveness of the joints against leakage and one such test may be required for each 500-ft of pipe for each type of joint manufactured. Such tests shall be made by an internal or external pressure against the joint of at least 13 psi for a period of ten minutes in accordance with ASTM C443. The completed joint, when installed in place in the work, shall be capable of withstanding a groundwater pressure of 13 psi without exceeding the allowable leakage specified for the pipe testing.

The manufacturer shall inspect all pipe joint surfaces for out-of-roundness and pipe ends for squareness. The manufacturer shall furnish to the Engineer a notarized affidavit stating all pipe meets the requirements of ASTM C76, these Specifications and the joint design.

Foundation, base and haunching shall consist of 3/4" stone unless special foundation/base are specified or ordered by the Engineer.

Geotextile fabric envelope shall conform to CTDOT Form 816 Section M.08.01-26.

Utility Identification Tape shall be 4-inches in width, durable green color-coded for sanitary sewer/storm drains indicating "Caution Buried Sewer Line Below".

Submittals: Submit six (6) copies of shop drawings for pipe materials, gaskets, fittings, foundation and base material, geotextile fabric envelope, and utility identification tape.

Submit to the Engineer for approval, within thirty days of the Effective Date of the Agreement, the name of the pipe and fitting suppliers and a list of materials to be furnished.

Submit shop drawings, showing layout and details of reinforcement, joint, method of manufacture and installation of pipe, specials and fittings, and a schedule of pipe lengths (including the length of individual pipes by diameter) for the entire job to the Engineer for approval.

Submit with the shop drawings documentation and materials certificate that the fine and course aggregates to be used in manufacture of the concrete pipe comply with these specifications. Documentation shall be less than 6 months old and shall indicate the source of the aggregates and the date of the analysis. Similar documentation shall be submitted to the Engineer at least yearly while pipe is being manufactured for this project.

Documentation shall be signed and sealed by a professional engineer from a qualified independent materials testing laboratory that conforms to ASTM E329 and is regularly inspected by the Cement and Concrete Reference Laboratory of the National Bureau of Standards.

Prior to each shipment of pipe, submit certified test reports that the pipe was manufactured and tested in accordance with the ASTM Standards specified herein.

Two (2) copies of the CCTV sewer inspection DVD in color on high quality format for playback on a standard DVD player.

A certified statement that inspection and all of the specified tests have been made and met shall also be submitted.

Construction Methods: Trenching: Prior to any excavation, the Contractor shall notify all affected utilities in accord with Public Act 77-350 (CALL BEFORE YOU DIG 1-800-922-4455).

All sewer pipe and appurtenances shall be staked out by a professional surveyor licensed in the State of Connecticut. The survey shall include an offset every fifty feet, benches and cut sheets.

Test pits shall be dug at locations directed by the Engineer sufficiently far in advance of the construction at the test pit location to allow time for any utility relocation that may be required to

accommodate the new construction. No separate payment will be made for these test pits, and they shall be considered as included in the unit price bid per linear foot of pipe.

The trench for the pipe shall be 12-inches beyond the outside of the barrel of the pipe on each side, the top of the barrel of the pipe shall be as shown on the Contract Drawings or as directed by the Engineer; and the bottom of the trench shall be at the bottom of the pipe. The Contractor alone shall be responsible for the stability and safety of the trenches and adjacent structures, and shall use such trench support and bracing as necessary without additional payment therefore. Pavement cuts shall be made with the edges reasonably smooth and without cracking or damage to the pavement outside the limits of the portion excavated. The methods used and the location of such cuts shall conform to the requirements of section 2.05 of Form 816. Repairs to pavement shall be made in accordance with the requirements and specifications (Form 816) or as directed by the Engineer.

In any area to receive fill, no pipe trench shall be excavated until the fill has been placed and compacted to a level at least 3-feet above the top of the pipe to be installed.

The Contractor may be required to excavate locally to determine the location and depth of existing underground structures on the lines of the pipe, as directed by the Engineer well in advance of the pipe laying. There will be no additional payment for this work, including backfilling and temporary surfacing.

Sheeting, Bracing and Pumping: The Contractor shall submit working drawings and calculations stamped by a Professional Engineer licensed in the State of Connecticut of the sheeting, bracing and pumping to the Engineer for review. The Contractor shall furnish and put in place such sheeting and bracing as may be necessary, to support the sides of the excavation, to prevent undermining of the pavement or to protect from possible injury any pipes, sewers, ducts, poles, conduits or other structures existing in the streets, or highways, and shall remove such sheeting and bracing as the trench is refilled.

The Contractor shall maintain all excavations in proper condition for carrying on the work, and to this end shall do all bailing, draining, or pumping which may be necessary to keep the trenches or other excavations free of water. No direct payment will be made for this work but the cost thereof will be considered as having been included in the price bid per linear feet of pipe.

If the Contractor installs and operates wellpoints on any section of the work, the expense of the same shall be borne by the Contractor.

Protection of Pipes, Drains, Culverts, etc.: All existing gas pipes, water pipes, sewers, drains, manholes, catch basins, culverts, electrical conduits, telephone ducts, utility poles or other structures which are uncovered by the excavation, and which do not, in the opinion of the Engineer, require to be changed in location, shall be carefully supported and protected from injury by the Contractor; and in case of damage, they shall be restored by him without

compensation; therefore, to as good condition as that in which they were found and shall be kept in repair during the existence of this Contract.

Each length of pipe shall be examined to see that it is sound and free of hair-line cracks, free of any debris and retains its normal shape (not out of round).

When ordered by the Engineer, the Contractor shall provide for and complete manufacturer's certification test.

Installation:

Care shall be taken in loading, transporting and unloading to prevent injury to the pipe or fittings and the joint surfaces. Pipe or fittings shall not be dropped. All pipe or fittings shall be examined before laying and no piece shall be installed which is found to be defective.

As soon as the excavation is completed to the normal grade of the bottom of the trench, place filter fabric and 6-inch of $\frac{3}{4}$ -in crushed stone in the trench and the pipe shall be firmly bedded to conform accurately to the lines and grades indicated on the contract drawings. $\frac{3}{4}$ -in crushed stone shall conform to the requirements of CTDOT No. 6, as identified in CTDOT's Standard Specifications for Roads, Bridges and Incidental Construction (Form 816). Blocking under the pipe will not be permitted.

$\frac{3}{4}$ -in crushed stone shall be placed and compacted to give complete vertical and lateral support for the lower section of the pipe as indicated on the contract drawings. A depression shall be left in the supporting screened gravel at the joint to prevent contamination of the rubber gasket immediately before being forced home. Before the pipe is lowered into the trench, the spigot and bell shall be cleaned and free from dirt. Gasket and bell shall be lubricated by a vegetable lubricant which is not soluble in water, furnished by the pipe manufacturer and harmless to the rubber gasket. The pipe shall be properly aligned in the trench to avoid any possibility of contact with the side of the trench and fouling the gasket. As soon as the spigot is centered in the bell of the previously laid pipe, it shall be forced home with jacks or come-alongs. After the gasket is compressed and before the pipe is brought fully home, each gasket shall be carefully checked for proper position around the full circumference of the joint. Steel inserts shall be used to prevent the pipe from going home until the feeler gage is used to check the final position of the gasket. The jacks or come-alongs shall be anchored sufficiently back along the pipeline (a minimum of five lengths) so that the pulling force will not dislodge the pieces of pipe already in place. Only a jack or come-along shall be employed to force the pipe home smoothly and evenly and hold the pipe while backfilling is in progress. Under no circumstances shall crowbars be used nor shall any of the motor driven equipment be used.

As soon as the pipe is in place and before the come-along is released, backfill shall be placed as indicated on the contract drawings and compacted for at least one-half the length of pipe. Not until this backfill is placed shall the come-along be released. If any motion at joints can be detected, a greater amount of backfill shall be placed before pressure is released. When pipe laying is not in progress, including lunchtime, the open ends of the pipe shall be closed by a

watertight plug or other approved means.

Carefully regulate the equipment and construction operations such that the loading of the pipe does not exceed the loads for which the pipe is designed and manufactured. Any pipe damaged during construction operations shall promptly and satisfactorily be repaired or replaced at no additional cost to the State.

Connections to existing manholes shall be core bored to allow the installation of a flexible pipe connection and proposed piping as shown on the Contractor's detail drawings. Provide a flexible joint (bell end stub) within 18 inches of the outside of the manhole wall.

Inverts, watertables, and walls of existing structures shall be reconfigured and/or reconstructed as necessary, required or directed, to accommodate new pipe installation.

Coarse sand or fine gravel shall be placed as backfill over the 3/4" crushed stone bedding and haunching up to a height of 2-feet above the top of the pipe. The backfill shall be compacted in 6" layers.

Where pipe is enclosed in any structure with concrete or mortar, a waterstop acceptable to the Engineer shall be applied to the outside barrel of the pipe and embedded in the concrete or mortar to prevent leakage along the outer wall of the pipe.

When and where indicated on the contract drawings and where specified or ordered by the Engineer, the stone and pipe shall be enveloped in approved filter fabric.

The Contractor shall take particular care during lateral installation so as to avoid injury or damage to existing service connections.

Utility identification tape shall be installed as directed by the Engineer after backfilling 2-feet above the top of the pipe.

Backfill material as approved shall be furnished, placed and consolidated as specified.

The Contractor shall comply with all federal, state, regional and local statutes, codes, ordinances and regulations regarding the proper removal and disposal of the existing sewers, and laterals.

Connection to Existing Pipe: The Contractor shall make all connections required between new and existing pipes as shown on the Contractor's detail drawings or as directed by the Engineer. The Contractor shall furnish the required concrete, reinforcing, pipe fittings, couplings, etc. to make a watertight connection.

All material shall conform to the requirements of the applicable items of these specifications and be subject to the approval of the Engineer.

Field cutting shall be done only with a suitable saw in full conformance with the manufacturer's recommendations. Cut ends of pipe shall be beveled smooth to prevent gasket damage.

When not actually laying pipe (e.g. overnight, weekends, holidays, etc.) the open ends of the pipe shall be kept plugged with approved watertight caps.

The Contractor shall make temporary connections to keep all house connection laterals and utility lateral connections in service, where said connections are encountered during the course of excavation for the proposed facilities. In the event said connections are removed by the Contractor for his convenience to facilitate the installation of proposed facilities, the Contractor shall make temporary reconnections as directed by the Engineer, until such time permanent repairs to the connections can be accomplished.

The Engineer shall be advised at all times of any changes made to the overall operation(s) to accommodate field conditions. Flow diversions and/or bypass pumping shall be maintained at all times as long as necessary to maintain the flow through the limits of the project during construction. Auxiliary and/or emergency equipment shall be maintained at the site to continue flow diversion and/or by-pass pumping operations. In the event of damage to the work, the Contractor shall rebuild the damaged work at no additional cost to the State.

The Engineer may prohibit the carrying out of any work at any time when, in his sole judgment, increased flow conditions are unfavorable or not suitable, or at any time, regardless of the existing flows, when proper precautions are not being taken to safeguard the existing sewerage system, previously constructed work, work in progress and/or the general public itself. The Engineer reserves the right to limit and/or otherwise restrict the Contractor's overall activities and/or operations at any time without claim should the Engineer deem it to be in the public's best interest to do so.

Unless otherwise provided for, or directed, all temporary facilities shall be bulkheaded and/or removed and disposed of in an approved manner when no longer required.

Televising Sewer Lines:

Upon completion of the newly installed sewer lines and subsequent to trench consolidation and air testing operations, all the newly installed main sewer lines shall be inspected utilizing closed circuit color television equipment.

The closed circuit television inspection shall be performed by an approved subcontractor, who specializes in such work. The CCTV inspection shall be conducted in the presence of the Engineer. The Contractor shall furnish to the Engineer two (2) DVDs of the CCTV inspection augmented with audio description of the inspection and supplemented with a written log/report of the inspection. The report shall provide locations of service connections, leaks, sags, deflections, cracks, offset joints, etc., orientation of the camera relative to the direction of flow and remarks for any deficiencies or abnormalities found during the inspection. The video tapes

shall be furnished to the Engineer within two (2) weeks of the completion of the air testing operations.

The above process of CCTV inspection shall be repeated at the end of the one year maintenance period.

SEWER TESTING AND CLEANING

The tests shall be conducted by the Contractor using his own equipment, or by a subcontractor approved by the Engineer. All equipment proposed for conducting the tests shall be subject to the approval of the Engineer. Drawings must be in sufficient detail to show the setup and proposed operation, and no testing will be permitted without prior approval of the Engineer.

Furnish all labor, materials, equipment and incidentals required to clean and test all new pipe installed under this Contract as specified herein.

The term "sewer", as used in this Section, shall apply to both stormwater pipelines, overflow pipelines and sewer pipelines.

All sewers shall be tested for leakage by an infiltration test if the ground water level is a minimum of 2-feet above the crown of the pipe for the full length of the section tested.

When sewers cannot be tested by an infiltration test as specified above, they shall be tested by an exfiltration test using water or air.

Where active sewer connections must be connected to the new sewer and the above testing procedures cannot be completed, testing shall be by Television Inspection and applicable tests of the respective pipe sections as indicated below and as directed by the Engineer.

The Contractor shall test the first section of pipeline as soon as it is installed to demonstrate that the work conforms to these Specifications. The initial test section shall not be more than 500-feet of pipeline.

Testing of pipe shall closely follow pipe laying. The Contractor shall have no more than 1000-feet of untested sewer or drain constructed at any time.

Infiltration Test:

Pipe shall be tested for infiltration after the backfill has been placed and the ground water allowed to return to normal elevation. Infiltration tests shall be made under the supervision of the Engineer and the length of line to be tested shall be the length between adjacent manholes. The allowable infiltration shall be 100 gallons per inch of diameter per day per mile of pipe in each section tested. There shall be no gushing or spurting leaks.

If an inspection of the completed sewer or any part thereof shows pipes or joints which allow noticeable infiltration of water, the defective work or material shall be replaced or repaired as directed, at no additional cost to the State.

Rates of infiltration shall be determined by means of V-Notch weirs, pipe spigots, or by plugs in the end of the pipe to be furnished and installed in an approved manner and at such times and locations as may be directed by the Engineer.

Exfiltration Test:

Leakage tests by exfiltration shall be made before or after backfilling at the discretion of the Engineer. The length of pipe to be tested shall be such that the head over the crown at the upstream crown is not less than 2-feet and the head over the downstream crown is not more than 4-feet. The pipe shall be plugged by pneumatic bags or mechanical plugs in such a manner that the air can be released from the pipe while it is being filled with water. Before any measurements are made, the pipe shall be kept full of water long enough to allow absorption and the escape of any trapped air to take place. Following this, a test period of at least one hour shall begin. Provisions shall be made for measuring the amount of water required to maintain the water at a constant level during the test period.

If any joint shows an appreciable amount of leakage, the jointing material shall be removed and the joint repaired. If any pipe is defective, it shall be removed and replaced. If the quantity of water required to maintain a constant level in the pipe does not exceed 100 gallons per inch of diameter per day per mile of pipe and if all the leakage is not confined to a few joints, workmanship shall be considered satisfactory. If the amount of leakage indicates defective joints or broken pipes, they shall be corrected or replaced.

Air Testing:

When the Engineer specifies or directs that leakage tests shall be made using the low-pressure air test method, the Contractor will be required to provide all equipment, test plugs in the required sizes, appurtenances, connecting hose or pipe, labor and materials necessary to conduct and control the test as herein specified. All testing shall be performed in accordance with the procedures described in ASTM C828.

All tests shall be conducted on the completed sewer pipeline between manholes. Testing of shorter sections of pipeline will only be permitted with the approval of the Engineer.

The Contractor is cautioned regarding the importance of properly installing the end caps used to plug hubs, wyes, bends, ends of laterals, and other inlets, and securing them against movement during installation of sewer. Failure to take this precaution can cause a properly installed sewer pipeline to fail a low-pressure air test.

The Contractor is further cautioned regarding the safety of personnel during the test. Low-pressure air can exert a substantial force on a pipe plug, even on all diameter pipe plugs. The

Contractor will be responsible to insure that all plugs utilized are in good condition and that they will not be pressurized beyond the limits recommended by their manufacturer.

No one will be permitted in a manhole containing a plug while air is under pressure in the pipeline being subjected to low-pressure air testing.

All gauges, controls, and appurtenances for equipment used to conduct the test will be located outside of manholes. Connections to the line under test, test plugs, and other equipment will be made with hose or pipe extensions which will safely contain the pressures necessary to conduct and control the test.

Immediately prior to testing, all lines will be cleaned and flushed with water. Pipe manufactured in accordance with ASTM Specification C-76, where applicable, shall be soaked for a period of 12 hours to saturate the pipe wall prior to testing with low-pressure air.

The equipment used to introduce the low-pressure air into the sewer line shall include a safety valve, or release device, located in the equipment at a point which will insure that, during the build-up of test pressure, the pipeline being tested will not be subjected to an internal pressure that could damage a properly installed pipeline.

The gage used to measure the drop in pressure shall have a 4-inch diameter face with a scale of 0 to 15 PSI (pounds per square inch) in 0.1 PSI increments, or as approved by the Engineer.

The Contractor shall determine the elevation of the ground water table in the area of the pipeline being subjected to the low-pressure air test in a manner approved by the Engineer.

After cleaning and flushing the line, plugs will be installed in the pipeline being subjected to the low-pressure air test and braced as necessary to secure the plugs in place.

Utilizing the approved equipment, air at low pressure will be slowly introduced into the pipeline until the pressure within the pipeline being tested increases to 4 PSIG greater than the back pressure exerted by the ground water table over the pipe being tested, but not greater than 9 PSIG, (back pressure = 1 PSIG per 2.31 feet of water) as determined above (if the water table is not at a level above the pipe, the test pressure should be brought up to 4 PSIG). Allow at least 2 minutes to elapse prior to starting the test. If necessary, allow a small amount of air to slowly enter the pipeline in order to maintain a pressure of 4 PSIG above the back pressure due to the water table, or 4 PSIG if there is no back pressure to compensate for.

Disconnect the supply air hose from the source of air and allow the air pressure within the pipe being tested to drop to 3.5 PSIG above the backpressure due to the existing ground water table (or to 3.5 PSIG if there is no water table). At this point, start measuring the time for the pressure in the pipeline to drop 1 PSIG (or to drop to 2.5 PSIG if there is no back pressure due to a water table).

The time required to drop 1 PSIG shall not be less than that indicated in Table 1 for the size and length of pipeline being tested. If the time is less than that indicated in Table 1, the pipeline will be considered to have failed the test (See Table 1).

Any section of the sewer line which fails to meet this test will be repaired or replaced as necessary by the Contractor, and retested at no additional expense to the State.

The Contractor will be responsible for all costs and delays incurred due to efforts to locate and repair any leaks in any sewer line which fails the low-pressure air test, regardless of whether the failure is due to workmanship, material failure, the result of an improperly installed or braced end cap; or any sewer line damaged due to failure to provide a properly sized and operable safety valve or pressure relief device, on the testing equipment for protection of the pipeline being tested. No sewer line will be considered acceptable until it successfully passes the requirements of this test unless the requirement is waived by the Engineer.

All testing will be conducted by the Contractor or his approved sub-contractor in the presence of the Engineer. The Contractor or his subcontractor shall keep a written record which will show the results of the tests conducted. These records should include sufficient data on length of line, pressure levels, time for pressure drop and related features noted during the testing of each segment of the line. A copy of these records shall be given to the Engineer.

TABLE 1
 MINIMUM TIME REQUIRED FOR A PRESSURE DROP OF 1 PSIG AS REQUIRED
 IN LOW PRESSURE AIR TEST SPECIFICATION - MINUTES: SECONDS
 (BASED ON 0.0015 CFM/SQ. FT.)

Pipe Dia- meter (in.)	Specification Time for Length (L) Shown (min:sec)								
	100 ft.	150 ft.	200 ft.	250 ft.	300 ft.	350 ft.	400 ft.	450 ft.	500 ft.
4	3:46	3:46	3:46	3:46	3:46	3:46	3:46	3:46	3:47
6	5:40	5:40	5:40	5:40	5:40	5:40	5:42	6:24	7:07
8	7:34	7:34	7:34	7:34	7:36	8:52	10:08	11:24	12:40
10	9:26	9:26	9:26	9:53	11:52	13:51	15:49	17:48	19:47
12	11:20	11:20	11:24	14:15	17:05	19:56	22:47	25:38	28:29
15	14:10	14:10	17:48	22:15	26:42	31:09	35:36	40:04	45:51
18	17:00	19:13	25:38	32:03	38:27	44:52	51:16	57:41	64:06
21	19:50	26:10	34:54	43:37	52:21	61:00	69:48	78:31	87:15
24	22:47	34:11	45:34	56:58	68:22	79:46	91:10	102:33	113:58

Note: If lateral sewers are included in the test, their lengths may generally be ignored in computing required test times. In the event a test section, having a total internal surface area less than 625 square feet, fails to pass the air test when lateral sewers have been ignored, the engineer shall recompute the test time including all lateral sewers.

Sewer Pipe Joint Testing and Sealing with Low Pressure Air Using the “Test and Seal” Method.

This method is to be used only on new sewers that replace existing sewers that requires ‘live’ re-connection of existing sewer laterals. Test individual pipe joints to identify those that are defective and can be sealed by an internal pipe joint sealing process.

Low Pressure joint Test Procedure:

The testing device shall be positioned within the line in such a manner as to straddle the pipe joint to be tested.

The testing device end elements (sleeves) shall be expanded so as to isolate the joint from the remainder of the line and create a void area between the testing device and the pipe joint. The ends of the testing device shall be expanded against the pipe with sufficient inflation pressure to contain the air within the VOID without leakage past the expanded ends.

Air shall then be introduced into the VOID area until a pressure equal to or greater than the required test pressure is observed with the VOID pressure monitoring equipment. The air pressure shall be greater than 4psi, and shall not exceed a maximum of 8 psi.

After the VOID pressure is observed to be equal to or greater than the required test pressure, the air flow shall be stopped. If the VOID pressure decays by more than 2 psi within 15 seconds (due to joint leakage), the joint will have failed the test and shall be resealed as specified (see Sewer Pipe joint Sealing).

Control Test: Prior to starting the pipe joint testing phase of the work, a two-part control test shall be performed as follows:

To insure the accuracy, integrity, and performance capabilities of the testing equipment, a demonstration test will be performed in a test cylinder constructed in such a manner that a minimum of two known leak sizes can be simulated. This technique will establish the test equipment performance capability in relationship to the test criteria and insure that there is no leakage of the test medium from the system or other equipment defects that could affect the joint testing results. If this test cannot be performed successfully, the Contractor shall be instructed to repair or otherwise modify his equipment and re-perform the test until the results are satisfactory to the Engineer. This test may be required at any other time during the joint testing work if the Engineer suspects the testing equipment is not functioning properly.

After entering each manhole section with the test equipment, but prior to the commencement of joint testing, the test equipment shall be positioned on a section of sound sewer pipe between pipe joints, and a test performed as specified. This procedure will demonstrate the reliability of the test requirement, as no joint will test in excess of the pipe capability. Should it be found that the barrel of the sewer pipe will not meet the joint test requirements, the requirements will be modified as necessary.

Test Records: During the joint testing work, records shall be kept which include:

- Identification of the manhole section tested;
- The test pressure used;
- Location (footage) of each joint tested;
- A statement indicating the test results for each joint tested.

If joints show visible leakage or have failed the low pressure air joint test procedure, the joint shall be sealed as follows:

Joint sealing shall be accomplished by forcing chemical sealing materials into or through faulty joints by a system of pumps, hoses, and sealing packers. Jetting or driving pipes from the surface that could damage or cause undermining of the pipe lines shall not be allowed. The sealing packer shall be installed and positioned over the fault joint by means of a measuring device and the closed-circuit television camera in the line. The procedure used by the Contractor for positioning the packer shall be accurate to avoid overpulling the packer and not effectively sealing (grouting) the intended joint. The packer ends (end elements, sleeves) shall be expanded using controlled pressure. The expanded ends shall seal against the inside periphery of the pipe to form a VOID area at the faulty joint, now completely isolated from the remainder of the pipe line. Into this isolated area, sealant materials shall be pumped through the hose system at controlled pressures which are in excess of groundwater pressures. The pumping unit, metering equipment, and the packer device shall be designed so that proportions and quantities of materials can be regulated in accordance with the type and size of the leak being sealed.

Joint Sealing Verification: Upon completing the sealing of each individual joint, the packer shall be deflated until the VOID pressure meter reads zero pressure, and then reinflated and the joint retested as specified (see Sewer Pipe Joint Testing). Should the VOID pressure meter not read zero, the Contractor shall clean his equipment of residual grout material or make the necessary equipment repairs/adjustments to produce accurate VOID pressure readings. Joints that fail to meet the specified test criteria shall be resealed and retested until the test criteria can be met. NOTE: If the joints do not meet the test criteria within a reasonable period of time (as determined by and at the sole discretion of the Engineer), the section shall be dug up and replaced as directed by the Engineer and at the expense of the Contractor.

Residual Sealing Material: Residual sealing materials that extend into the pipe, reduce the pipe diameter, or restrict the flow shall be removed from the joint. The sealed joints shall be left reasonable “flush” with the existing pipe surface. If excessive residual sealing materials accumulate in the line the manhole section shall be cleaned to remove the residual materials.

Records: Complete records shall be kept of joint sealing performed in each manhole section. The records shall identify the manhole section in which the sealing was done, the location of each joint sealed, and the joint sealing verification results (see Sewer Pipe Joint Testing, Test Records).

Guaranty: All sewer pipe joint sealing work performed shall be guaranteed against faulty workmanship and/or materials for a period of one year after the completion of the work.

General: All chemical sealing materials used in the performance of the work specified shall meet or exceed physical properties as defined in APWA publication “Assessment of Sewer Sealants” (September 1980, Office of R&D, U.S.EPA, Cincinnati, OH 45269).

Chemical Sealing Material: The chemical sealing material shall conform to the following:

A minimum of 10% acrylamide base material by weight in the total sealant mix. A higher concentration (%) of acrylamide base material may be used to increase strength or offset dilution during injection.

The ability to tolerate some dilution and react in moving water during injection.

A viscosity of approximately 2 centipoise which can be increased with additives.

A controllable reaction time from 10 seconds to 1 hour.

A reaction (curing) which produces a homogeneous, chemically stable, non-biodegradable, firm, flexible gel.

The ability to increase mix viscosity, density and gel strength by the use of additives.

Handling and mixing of chemical sealing materials shall be in accordance with the manufacturer's recommendations.

CLEANING

At the conclusion of the work, thoroughly clean all pipelines by flushing with water or other means to remove all dirt, stones, pieces of wood, or other material which may have entered the pipes during the construction period. Debris cleaned from the lines shall be removed from the low end of the pipeline. If after this cleaning, obstructions remain, they shall be removed. After the pipelines are cleaned and if the groundwater level is above the pipe or following a heavy rain, the Engineer will examine the pipes for leaks. If any defective pipes or joints are discovered, they shall be repaired or replaced by the Contractor.

Method of Measurement:

This item will be measured for payment per linear foot of pipe installed through all connections and fittings complete and in place.

No deduction will be made for fittings, manholes or chimney connections.

Bedding material will not be measured for payment, but will be considered as included in the unit price bid per linear foot of pipe.

The coarse sand or fine gravel from the top of the crushed stone haunching to 24 inches above the top of the pipe will not be measured for payment, but will be considered as included in the price bid per linear foot of pipe.

Geotextile fabric envelope will not be measured for payment, but will be considered as included in the unit price bid per linear foot of pipe.

Utility identification tape will not be measured for payment, but will be considered as included in the price bid per linear foot of pipe.

Trench consolidation will not be measured for payment but will be considered as included in the unit price bid per linear foot of pipe.

Bank gravel above the 24-inch level above the top of the pipe to the subgrade level for the surfacing material will not be measured for payment but will be considered as included in the unit price bid per linear foot of pipe.

Removal and disposal of existing piping will not be measured for payment, but will be considered as included in the unit price bid per linear foot of pipe.

Reconfiguring and reconstructing inverts, watertables and walls of existing manholes, catch basins, sanitary chambers, and junction boxes will not be measured for payment, but will be considered as included in the unit price bid per linear foot of pipe.

Connecting to existing pipes will not be measured for payment, but will be considered as included in the unit price bid per linear foot of pipe.

Support of excavation and dewatering will not be measured for payment, but will be considered as included in the price bid per linear foot of pipe.

CCTV inspection of the sewer lines and furnishing video cassettes and accompanying log/reports, etc. will not be measured for payment, but will be considered as included in the price bid per linear foot of pipe.

Low pressure air test will not be measured for payment, but will be considered as included in the price bid per linear foot of pipe.

Basis of Payment:

This work will be paid for at the contract unit price per linear foot for "Sanitary Sewer Relocation", complete in place, which price shall include all work necessary as described in this section to complete the pipeline in accordance with the contract drawings, the Specifications and as directed by the Engineer, inclusive of all materials, tools, equipment and labor incidental thereto.

No direct payment will be made for chimney connections, wyes, T-yses or inlets, capped or made part of a lateral; the cost of said fitting being considered as having been included in the unit price bid per linear foot for Sanitary Sewer Relocation.

No direct payment will be made for any work done or materials used in making the pipeline tight.

PAY ITEM
Sanitary Sewer Relocation

PAY UNIT
L.F.

ITEM #1401946A – CUT AND PLUG ABANDONED SANITARY SEWER

Description:

This item shall consist of abandoning existing sanitary sewer lines in place by cutting, capping and filling with flowable fill.

Materials:

Plugs

- A. Grout Plugs: Cement-based dry-pack grout conforming to ASTM C 1107, Grade B or C.
- B. Manufactured Plug: Commercially available plug or cap specifically designed and manufactured to be used with pipe being abandoned.

Flowable Fill Requirements

- A. Unconfined compressive strength: minimum 75 psi and maximum 150 psi at 56 days as determined based on an average of three tests for same placement. Present at least three acceptable strength tests for proposed mix design in mix design report.
- B. Placement characteristics: self-leveling.
- C. Shrinkage characteristics: non-shrink.
- D. Water bleeding for fill to be placed by grouting method in sewers: not to exceed 2 percent according to ASTM C 940.
- E. Minimum wet density: 90 pounds per cubic foot.

Ballast

- A. Ballast Material: Natural rock or concrete pieces with minimum size equal to at least 10 times maximum aggregate size of flowable fill and maximum size of 24 inches. Maximum dimension shall not be more than 20 percent of minimum dimension of space to be filled.
- B. Ballast Composition: Free of regulated waste material.

Submittals:

The Contractor shall:

Submit product data for proposed plugs for the Engineer's approval. The Contractor shall also submit technical information for equipment and operational procedures including projected slurry injection rate, grout pressure, method of controlling grout pressure, bulkhead and vent design, and number of stages of grout application for the Engineer's review and approval.

At least 15 days prior to commencing abandonment activities submit plan for abandonment,

describing proposed grouting sequence, bypass pumping requirements and plugging, if any, and other information pertinent to completion of work to the Engineer for approval.

Construction Methods:

Preparation for Abandonment via Flowable Fill

- A. Have fill mix design reports and other submittals approved by the Engineer prior to start of placement. The Contractor shall notify the Engineer at least 24 hours in advance of grouting with flowable fill.
- B. Select fill placement equipment and follow procedures with sufficient safety and care to avoid damage to existing underground utilities and structures and operate equipment at pressure that will not distort or imperil portion of work, new or existing.
- C. Clean sewer lines and video with closed circuit television to identify connections, locate obstructions, and assess condition of pipe. Locate previously unidentified connections, which have not been redirected and reconnected as part of this project, and report them to the Engineer. During placement of fill, compensate for irregularities in sewer pipe, such as obstructions, open joints, or broken pipe to ensure no voids remain unfilled.
- D. Perform demolition work prior to starting fill placement. Clean placement areas of sewers and manholes of debris that may hinder fill placement. Remove excessive amounts of sludge and other substances that may degrade performance of fill. The Contractor shall not leave sludge or other debris in place if filling more than 2 percent of placement volume.
- E. Remove free water prior to starting fill placement.

Equipment for Flowable Fill

- A. Mix flowable fill in automated batch plant and deliver it to site in ready-mix trucks. Performance additives may be added at placement site if required by mix design.
- B. Use concrete or grout pumps capable of continuous delivery at planned placement rate.

Installation of Flowable Fill

- A. Abandon existing sewer lines as shown on the plans with flowable fill.
- B. Place flowable fill to fill entire volume of existing pipe between removed sanitary manholes as shown on the plans. Continuously place flowable fill from manhole to manhole with no intermediate pour points, but not exceeding 500 feet in length.
- C. Have filling operation performed by experienced crews with equipment to monitor density of flowable fill and to control pressure.
- D. Temporarily plug sewer lines which are to remain in operation during pouring/pumping to keep lines free of flowable fill.

- E. Pump flowable fill through bulkheads constructed for placement of two 2-inch PVC pipes or use other suitable construction methods to contain flowable fill in lines to be abandoned. These pipes will act as injection points or vents for placement of flowable fill.
- F. Place flowable fill under pressure flow conditions into properly vented open system until a steady flow of flowable fill emerges from vent pipes. The pipe will not be considered full until this condition exists. Pump flowable fill with sufficient pressure to overcome friction and to fill sewer from downstream end, to discharge at upstream end.
- G. Inject flowable fill through replaced ballast using grouting equipment and series of grout pipes discharging at bottom of placement, allowing fill to rise through ballast effectively filling all voids. Alternatively, sequentially place individual pieces of ballast at same time as flowable fill is placed. Do not fill with ballast more than 50 percent of volume at any level, to prevent nesting and void formation.
- H. Remediate placement of flowable fill which does not fill voids in sewer, or where voids develop due to excessive shrinkage or bleeding of fill, by using pressure grouting either from inside sewer or from surface.
- I. Plug each end of sewer being abandoned.
- L. When using grout plug, place temporary plug or bulkhead approximately 12 inches inside pipe. Fill pipe end completely with dry-pack grout mixture.
- M. When using manufactured plug or cap, install fitting as recommended by manufacturer's instructions, to form water tight seal.
- N. Backfill to surface, above pipe or structures left in place, with flowable fill in restricted areas, compacted bank run sand in unrestricted areas to be paved or select fill in unrestricted areas outside of pavement.
- O. Collect and dispose of excess flowable fill material and other debris.

Method of Measurement:

This item, being paid for on a lump sum basis, will not be measured for payment.

Basis for Payment:

This work will be paid for at the contract lump sum price for "Cut and Plug Abandoned Sanitary Sewer", complete in place, which price shall include all work necessary and as described in this section, shown on the Contract drawings and directed by the Engineer, including all flowable fill, ballast, videotaping of sewer lines to be abandoned, cutting and plugging of abandoned sanitary sewers and all materials, tools, equipment and labor incidental thereto in accordance with the contract drawings, the Specifications and the requirements of the Engineer.

PAY ITEM
Cut and Plug Abandoned Sanitary Sewer

PAY UNIT
L.S.

ITEM #1403101A– JUNCTION CHAMBER NO. 1

ITEM #1403102A– JUNCTION CHAMBER NO. 2

Description: The work specified in this section includes furnishing and installing built-in-place or precast concrete junction chambers at the locations and to the lines, grades, dimensions, and details shown on the Contract Drawings, complete as shown, specified and directed. The Contractor will be required to provide complete design plans for the junction chambers signed and sealed by a professional engineer licensed in the State of Connecticut.

The work includes, all as shown, specified and directed, transporting materials, clearing, excavation, disposing of unused excavated materials, furnishing and installing all components of chambers, including pre-cast sections and brick or block masonry, placing concrete, constructing inverts and water tables, refilling excavations, furnishing additional material for refilling, miscellaneous grading, bracing, pumping, furnishing and installing bedding material, geotextile fabric, concrete base, frames and covers, manhole steps, waterproofing, temporary and permanent unpaved surface restoration, temporary pavement restoration, and all incidental work, except as otherwise herein provided for.

Design: Junction Chamber shall be designed in accordance to AASHTO LRFD Bridge Design Specifications, 2010, 5th Edition to conform to the geometric dimensions shown on the contract plans.

Materials: All materials shall be inspected and tested at the place of manufacture as required by the standard specifications to which the material is manufactured.

All materials shall be subject to inspection by the Engineer after delivery to the job site and may also be subject to inspection at the place of manufacture by a representative of the Engineer. Ten days notice should be provided to the Engineer prior to the construction of the chambers to allow the Department's representative to inspect the work.

A certified statement that inspection and all of the specified tests have been made and met shall also be submitted.

1. Concrete: The concrete for the Junction Chamber shall be air-entrained when installed in areas subject to freeze-thaw conditions, composed of Portland cement, fine and coarse aggregates, admixtures and water. Air-entrained concrete shall contain 6 ± 2 percent air. The air-entraining admixture shall conform to AASHTO M154. The minimum concrete compressive strength shall be as shown on the shop drawings.
 - a) Portland Cement - Shall conform to the requirements of ASTM Specifications C150-Type I, Type II, or Type III cement.

- b) Coarse Aggregate - Shall consist of stone having a maximum size of 1 inch. Aggregate shall meet requirements for ASTM C33.
 - c) Water Reducing Admixture - The manufacturer may submit, for approval by the Engineer, a water-reducing admixture for the purpose of increasing workability and reducing the water requirement for the concrete.
 - d) Calcium Chloride - The addition to the mix of calcium chloride or admixtures containing calcium chloride will not be permitted.
 - e) Mixture - The aggregates, cement and water shall be proportioned and mixed in a batch mixer to produce a homogeneous concrete meeting the strength requirements of this specification. The proportion of Portland cement in the mixture shall not be less than 564 pounds (6 sacks) per cubic yard of concrete.
2. Reinforcement: The minimum steel yield strength shall be 60,000 psi.
- a) All reinforcing steel for the precast elements shall be fabricated and placed in accordance with the detailed shop drawings submitted by the manufacturer.
 - b) Reinforcement shall consist of welded wire fabric conforming to ASTM Specification A 185 or A 497, or deformed billet steel bars conforming to ASTM Specification A 615, Grade 60.
3. Joints between precast sections shall employ an "O" ring gasket and conform to ASTM C443. Butyl rubber gasketing material may be used in lieu of o-ring gaskets, subject to approval of the Engineer.
4. Joints between the manhole section and an entering (existing) pipe shall consist of a premolded elastomeric sleeve cast into the manhole base or wall section to provide a watertight joint having a maximum omnidirectional deflection capability of 10 degrees. The sleeve shall be the Lock Joint Flexible Manhole Sleeve as manufactured by Chardon Rubber Co., Chardon, OH or approved equal.
5. Junction chamber sections shall contain manhole steps so as to form a continuous ladder with a distance of twelve inches (12") between steps.
6. No more than two lift holes shall be cast or drilled in each section.
7. Sections shall be cured by subjecting them to thoroughly saturated steam at a temperature between 100 and 130 degrees F. for a period of not less than 12 hours or, when necessary, for such additional time as may be needed to enable the sections to meet the strength requirements.

8. The date of manufacture and the name or trademark of the manufacturer shall be clearly marked on the inside of each manhole section.

Brick shall conform to the requirements of Article M.08.02-1, CONN DOT FORM 816.

Concrete masonry units shall conform to the requirements of Article M.08.02-3, CONN DOT FORM 816.

Mortar shall conform to the requirements of Article M.11.04, CONN DOT FORM 816.

Junction chambers indicated on the Contract Drawings to be fitted with the Metropolitan District Commission's standard frame and cover set will be provided with an E.L. LeBaron (Pat. No. LJ-105) cast iron frame, and 23-7/8-inch cover having one center 1-1/4-inch pick hole (Pat. No. L24C-21) or approved equal.

Castings shall conform to ASTM Specifications A-48, Class 30 and shall be thoroughly cleaned, heated, and dipped in approved black asphaltum paint.

All covers shall be appropriately marked "SEWER" in a manner similar to the sewer manhole cover shown on Contract Drawings. "Special" frames and covers where ordered by the Engineer shall be as shown on Contract Drawings.

In order to prevent covers rocking or ratting under traffic and to insure proper fit and interchangeability between different frames and covers, the lower surface of the cover and the corresponding upper surface of the frame shall be machine-finished in a lathe to provide a round, smooth, flat contact with the dimensions and clearances called for on the Contract Drawings.

Only North American castings shall be allowed. Manufactured manhole frames and covers submitted for Engineer approval shall be clearly and conspicuously marked on the top surface of each in English letters designating the manufacturing country of origin. Such marking shall be made either by means of die stamping, cast-in molding, etching or engraving. No other type of marking is acceptable.

Frames and covers which are to have a bolted locking device are so indicated and as shown on the Contract Drawings. Each cover shall be drilled and counter bored to a depth of 1/2-inch in two places 180° apart to accommodate a 1/2-inch diameter Type 304 stainless steel socket head cap screw. Each frame shall be drilled and tapped to accept the cap screw. The socket head cap screw shall be 1 1/2-inches long having 13 threads to the inch. Each frame and cover shall be marked for identification to insure that the proper cover is installed with its drilled and tapped frame.

Manhole steps, as shown on the Contract Drawings, shall be built into manhole walls and elsewhere as indicated, and shall be aligned to form a continuous ladder with rungs equally spaced vertically at a maximum distance of 12-inches apart. The top step shall be between 12-inches and 16-inches below the manhole cover. Steps shall be embedded in the manhole wall a minimum distance of 3-inches and rungs or cleats shall project a minimum clear distance of 5-

inches from the interior manhole wall, measured from the point of embedment. Additional steps shall be furnished and set as shown on the plans or where ordered by the Engineer.

Aluminum manhole steps shall be forged aluminum safety rung, alloy 6061-T6. That portion of the manhole step encased in concrete or masonry shall be coated with either bitumastic or zinc chromate paints.

Plastic manhole steps shall be in conformance with ASTM C478 and shall be of copolymer polypropylene conforming to ASTM D4101 for Type 11 propylene copolymers. The copolymer polypropylene compound shall encase a ½-inch Grade 60 steel reinforcing rod conforming to ASTM A615.

Stubs in manholes shall be short pieces cut from the bell end of the pipe. The stubs shall be set the required line and elevation and encased in the manhole masonry as shown on the Contract Drawings or as directed by the Engineer. Stubs shall not extend beyond the manhole base slab more than 2'-0".

Reinforced concrete stubs shall be short lengths of reinforced concrete pipe with bulkheads.

Geotextile fabric shall conform to CTDOT Form 816 Section M.08.01-26.

Bedding material shall consist of ¾" crushed stone and shall meet the requirements of CTDOT Form 816 Section M.01.01 gradation for No. 6 stone.

Submittals:

The working drawings and design computations shall be prepared and sealed by a Professional Engineer licensed in the State of Connecticut, who shall 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. The furnishing of calculations and working drawings shall not serve to relieve the Contractor of any part of his responsibility for the safety of the work or for the successful completion of the work.

The Contractor shall submit 9 copies of working drawings and design calculations delineating Junction Chamber to be used together with installation /construction plans to the Engineer for review prior to fabrication or construction of the Junction Chamber. Each sheet of the working drawings shall be stamped. Work shall not be started until approval from the Engineer has been obtained and required materials and equipment are available at the site. The working drawings shall be submitted in accordance with Section 1.05.02.

The design calculations shall include, but not be limited to the following:

1. Design loads and stresses for all structural members and components.

2. Allowable loads or stresses for all structural members and components.
3. References for all design equations.
4. All ASTM, AASHTO, or other material designations.
5. Design calculations for all structural elements including walls, slab, roof, connections, and splices of reinforcing bar.
6. Design calculations to show that the junction chamber can be adequately supported on existing ground on an adequate foundation.

The working drawings shall include, but not be limited to the following:

1. Layout plan showing the locations, limits, spacing, etc. of all structural members of the Junction Chamber with dimensions and tolerances.
2. Complete details of all components and sections including all materials incorporated into the Junction Chamber.
3. Member sizes and details of their "connections".
4. Method of installation including sequence, setting relative to existing pipe, anchorage during setting to existing pipe, and installation of seals.
5. Procedures outlining the proposed sequence of operations to be followed when installing finished.

Construction Methods: Earthwork, traffic control, environmental protection, rock excavation (where applicable), dewatering, support of excavations, sheeting and storing, backfilling and compacting, etc. shall be done in accordance with the applicable Sections of the Specifications.

PLACING PRECAST SECTIONS. After the excavation has been completed as required, the bedding material shall be placed from the bottom of the excavation to the bottom of the manhole and suitably compacted. The bedding material shall cover the full bottom of the excavation and be at least 6 inches in depth.

The precast section shall be carefully lifted and lowered to position in the excavation by suitable rigging. While the section is suspended, it shall be inspected and examined for defects. No section shall be installed that is known to be defective. If any defective section is discovered after it is installed, it shall be removed, replaced with a sound section and removed from the worksite at no additional cost to the State.

Placement of Reinforcement:

The cover of concrete over the outside circumferential reinforcement shall be 2 inches minimum. The cover of concrete over the inside circumferential reinforcement shall be 1 1/2 inches minimum, unless otherwise noted on the shop drawings. The clear distance of the end circumferential wires shall not be less than one inch nor more than two inches from the ends of each section. Reinforcement shall be assembled utilizing single or multiple layers of welded wire fabric (not to exceed 3 layers), supplemented with a single layer of deformed billet-steel bars, when necessary. The ends of the longitudinal distribution reinforcement shall be not more than 3 inches and not less than 1 1/2 inches from the ends of the Junction Chamber member.

Placing Concrete:

Concrete shall not be deposited in the forms until the Engineer has verified the presence and proper location of the reinforcing steel and other cast-in-place components, and has given his approval thereof.

Concrete shall not be deposited into the forms when the ambient temperature is below 40° F or above 90° F, unless adequate heating or cooling procedures are provided and have been previously approved by the Engineer, in accordance with Special Provision Section 6.01.03-2. The concrete temperature shall be within the range of 60° F to 90° F at the time of placement.

Production during the winter season, from November 15 to March 15 inclusive, will be permitted only on beds located in a completely enclosed structure of suitable size and dimension that provides a controlled atmosphere for the protection of both the casting operation and the product.

Outside concreting operations will not be permitted during rainfall unless the operation is completely under cover.

Void forms shall be held in place against uplift or lateral displacement during the pouring and vibrating of the concrete by substantial wire ties or other satisfactory means as approved by the Engineer.

The concrete shall be vibrated internally, or externally, or both, as ordered by the Engineer. The vibrating shall be done with care in such a manner as to avoid displacement of reinforcing steel, voids, forms, or other components. There shall be no interruption in the pouring of any of the sections. Concrete shall be carefully placed in the forms and sufficiently vibrated to produce a surface that is free from imperfections such as honeycombing, segregation, cracking, or checking. Any deficiencies noted in the sections may be cause for rejection.

Curing: The precast concrete elements shall be cured for a sufficient length of time so that the concrete will develop the specified compressive strength in 28 days or less. Any one of the following methods of curing or combinations thereof shall be used:

Steam Curing - The precast elements may be low-pressure steam cured by a system that will maintain a moist atmosphere.

Water Curing - The precast elements may be water cured by any method that will keep the sections moist.

Membrane Curing - A sealing membrane conforming to the requirements of ASTM Specification C309 may be applied and shall be left intact until the required concrete compressive strength is attained. The concrete temperature at the time of application shall be within +/- 10 degrees F of the atmospheric temperature. All surfaces shall be kept moist prior to the application of the compounds and shall be damp when the compound is applied.

Mixture: The Contractor shall design and submit to the Engineer for review a concrete mix that shall attain a minimum 28-day strength (f'c) as shown on the plans.

Test Cylinders:

During the casting of the sections, the Contractor shall make test cylinders. A minimum of 4 cylinders shall be taken during each production run or as ordered by the Engineer. The dimensions and type of cylinder mold shall be as specified by the Engineer. Cylinders shall be cured under the requirements of ASTM C31 and shall be used to determine the 28-day compressive strength requirements (f'c). Failure of any of the 28-day tests cylinders to meet 90% of the minimum compressive strength requirement may be cause for rejection. The Engineer also reserves the right to request and test core specimens from the sections to determine their adequacy.

Handling and Storage:

Care shall be taken during storage, transporting, hoisting and handling of all precast sections to prevent damage. Sections damaged by improper storing, transporting or handling shall be repaired or replaced by the Contractor, as directed by the Engineer and at no additional cost to the State. All storage and handling operations shall be as directed by the Engineer.

The precast sections shall not be removed from their casting beds until the concrete has attained a minimum compressive strength of 75% of the 28-day strength. The precast sections shall not be shipped to the job site until the 28-day strength (f'c) has been attained.

The joint between sections shall be thoroughly cleaned in accord with the manufacturer's instructions to assure a watertight joint.

Precast reinforced concrete sections shall be set to be vertical and the sections in true alignment.

Any chamber which shows any settlement or displacement after installation shall be taken out and reinstalled to the satisfaction of the Engineer.

Rubber gaskets shall be installed in all joints in accord with the manufacturer's recommendations.

All holes in sections used for handling shall be thoroughly plugged with rubber plugs made specifically for this purpose or shall be carefully sealed with non-shrink grout to obtain a watertight connection.

Openings or penetrations for lateral connections may be “core-bored”, where and if approved or directed by the Engineer. The use of blunt instruments or excessive force will not be permitted.

Inverts and watertables shall be built of brick or formed with poured concrete as directed by the Engineer. Inverts shall, in general, have a uniform grade between the inverts of the inlet and outlet pipes. Joints in brick inverts shall be tooled to be slightly concave and polished.

Only clean bricks shall be used. Bricks shall be moistened by suitable means, until they are neither so dry as to absorb water from the mortar nor so wet as to be slippery when laid.

Each brick shall be laid in a full bed and joint of mortar without requiring subsequent grouting, flushing or filling, and shall be thoroughly bonded.

Outside faces of masonry walls shall be plastered with mortar ½-inch thick.

If required, the masonry shall be properly moistened prior to application of the mortar. The mortar shall be carefully spread and troweled. After hardening, the mortar shall be carefully checked by being tapped for bond. Unbonded or unsound mortar shall be removed and replaced.

Brick masonry and mortar shall be protected from too rapid drying by the use of burlap, kept continually moist, or by other suitable means, and shall be protected from the weather and frost.

Cast iron frames shall be set to a full even bearing on cement mortar flush with finished grade or as directed by the Engineer. The flange of the frame shall not project outside of the masonry on which it rests. The inner circle of the frame shall not overhang the brickwork by more than one inch (1”).

Until such time as cast iron frames and covers are set, tops must be kept covered with temporary coverings to exclude persons, animals, dirt and foreign substances.

Upon completion of construction, all dirt and other foreign material shall be removed from Junction Chambers and manholes. No materials shall be left to impede sewage flows.

Placing and Compacting Backfill:

Dumping for backfilling is not allowed any nearer than 3 ft from the existing / new structure. The fill must be placed and compacted in layers not exceeding 8 inches. The maximum difference in the surface levels of the fill on opposite sides of the bridge must not exceed 2 feet.

The backfill shall be compacted to a minimum density of 95% of the Standard Proctor, as required by AASHTO T-99.

Soil within 1 foot of concrete surfaces should be hand-compacted. Elsewhere, use of rollers is acceptable. Vibrating roller-compactors shall not be used.

Backfill against a waterproofed surface shall be placed carefully to avoid damage to the waterproofing material.

Method of Measurement: This work will be measured for payment by the number of Junction Chambers furnished and installed, complete and in place, as shown, specified and directed.

Basis of Payment: This work will be paid for at the Contract unit price each for “Junction Chamber (of the No. specified)” complete in place, which price shall include complete design of the junction chamber signed and sealed by a Professional Engineer licensed in the State of Connecticut, all work necessary and described in this section to incorporate the manhole into the work, including all labor, material and equipment incidental thereto. It shall also include the clearing, trenching excavation and disposal of excavated materials, refilling trenches, furnishing additional material for refilling, grading, sheeting, bracing, piping and couplings required to connect to existing piping and all incidental work, complete, in place, and accepted by the Engineer.

PAY ITEM

Junction Chamber No. 1
Junction Chamber No. 2

PAY UNIT

Ea.
Ea.

ITEM #1403101A– JUNCTION CHAMBER NO. 1

ITEM #1403102A– JUNCTION CHAMBER NO. 2

Description: The work specified in this section includes furnishing and installing built-in-place or precast concrete junction chambers at the locations and to the lines, grades, dimensions, and details shown on the Contract Drawings, complete as shown, specified and directed. The Contractor will be required to provide complete design plans for the junction chambers signed and sealed by a professional engineer licensed in the State of Connecticut.

The work includes, all as shown, specified and directed, transporting materials, clearing, excavation, disposing of unused excavated materials, furnishing and installing all components of chambers, including pre-cast sections and brick or block masonry, placing concrete, constructing inverts and water tables, refilling excavations, furnishing additional material for refilling, miscellaneous grading, bracing, pumping, furnishing and installing bedding material, geotextile fabric, concrete base, frames and covers, manhole steps, waterproofing, temporary and permanent unpaved surface restoration, temporary pavement restoration, and all incidental work, except as otherwise herein provided for.

Design: Junction Chamber shall be designed in accordance to AASHTO LRFD Bridge Design Specifications, 2010, 5th Edition to conform to the geometric dimensions shown on the contract plans.

Materials: All materials shall be inspected and tested at the place of manufacture as required by the standard specifications to which the material is manufactured.

All materials shall be subject to inspection by the Engineer after delivery to the job site and may also be subject to inspection at the place of manufacture by a representative of the Engineer. Ten days notice should be provided to the Engineer prior to the construction of the chambers to allow the Department's representative to inspect the work.

A certified statement that inspection and all of the specified tests have been made and met shall also be submitted.

1. Concrete: The concrete for the Junction Chamber shall be air-entrained when installed in areas subject to freeze-thaw conditions, composed of Portland cement, fine and coarse aggregates, admixtures and water. Air-entrained concrete shall contain 6 ± 2 percent air. The air-entraining admixture shall conform to AASHTO M154. The minimum concrete compressive strength shall be as shown on the shop drawings.
 - a) Portland Cement - Shall conform to the requirements of ASTM Specifications C150-Type I, Type II, or Type III cement.

- b) Coarse Aggregate - Shall consist of stone having a maximum size of 1 inch. Aggregate shall meet requirements for ASTM C33.
 - c) Water Reducing Admixture - The manufacturer may submit, for approval by the Engineer, a water-reducing admixture for the purpose of increasing workability and reducing the water requirement for the concrete.
 - d) Calcium Chloride - The addition to the mix of calcium chloride or admixtures containing calcium chloride will not be permitted.
 - e) Mixture - The aggregates, cement and water shall be proportioned and mixed in a batch mixer to produce a homogeneous concrete meeting the strength requirements of this specification. The proportion of Portland cement in the mixture shall not be less than 564 pounds (6 sacks) per cubic yard of concrete.
2. Reinforcement: The minimum steel yield strength shall be 60,000 psi.
- a) All reinforcing steel for the precast elements shall be fabricated and placed in accordance with the detailed shop drawings submitted by the manufacturer.
 - b) Reinforcement shall consist of welded wire fabric conforming to ASTM Specification A 185 or A 497, or deformed billet steel bars conforming to ASTM Specification A 615, Grade 60.
3. Joints between precast sections shall employ an "O" ring gasket and conform to ASTM C443. Butyl rubber gasketing material may be used in lieu of o-ring gaskets, subject to approval of the Engineer.
4. Joints between the manhole section and an entering (existing) pipe shall consist of a premolded elastomeric sleeve cast into the manhole base or wall section to provide a watertight joint having a maximum omnidirectional deflection capability of 10 degrees. The sleeve shall be the Lock Joint Flexible Manhole Sleeve as manufactured by Chardon Rubber Co., Chardon, OH or approved equal.
5. Junction chamber sections shall contain manhole steps so as to form a continuous ladder with a distance of twelve inches (12") between steps.
6. No more than two lift holes shall be cast or drilled in each section.
7. Sections shall be cured by subjecting them to thoroughly saturated steam at a temperature between 100 and 130 degrees F. for a period of not less than 12 hours or, when necessary, for such additional time as may be needed to enable the sections to meet the strength requirements.

8. The date of manufacture and the name or trademark of the manufacturer shall be clearly marked on the inside of each manhole section.

Brick shall conform to the requirements of Article M.08.02-1, CONN DOT FORM 816.

Concrete masonry units shall conform to the requirements of Article M.08.02-3, CONN DOT FORM 816.

Mortar shall conform to the requirements of Article M.11.04, CONN DOT FORM 816.

Junction chambers indicated on the Contract Drawings to be fitted with the Metropolitan District Commission's standard frame and cover set will be provided with an E.L. LeBaron (Pat. No. LJ-105) cast iron frame, and 23-7/8-inch cover having one center 1-1/4-inch pick hole (Pat. No. L24C-21) or approved equal.

Castings shall conform to ASTM Specifications A-48, Class 30 and shall be thoroughly cleaned, heated, and dipped in approved black asphaltum paint.

All covers shall be appropriately marked "SEWER" in a manner similar to the sewer manhole cover shown on Contract Drawings. "Special" frames and covers where ordered by the Engineer shall be as shown on Contract Drawings.

In order to prevent covers rocking or ratting under traffic and to insure proper fit and interchangeability between different frames and covers, the lower surface of the cover and the corresponding upper surface of the frame shall be machine-finished in a lathe to provide a round, smooth, flat contact with the dimensions and clearances called for on the Contract Drawings.

Only North American castings shall be allowed. Manufactured manhole frames and covers submitted for Engineer approval shall be clearly and conspicuously marked on the top surface of each in English letters designating the manufacturing country of origin. Such marking shall be made either by means of die stamping, cast-in molding, etching or engraving. No other type of marking is acceptable.

Frames and covers which are to have a bolted locking device are so indicated and as shown on the Contract Drawings. Each cover shall be drilled and counter bored to a depth of 1/2-inch in two places 180° apart to accommodate a 1/2-inch diameter Type 304 stainless steel socket head cap screw. Each frame shall be drilled and tapped to accept the cap screw. The socket head cap screw shall be 1 1/2-inches long having 13 threads to the inch. Each frame and cover shall be marked for identification to insure that the proper cover is installed with its drilled and tapped frame.

Manhole steps, as shown on the Contract Drawings, shall be built into manhole walls and elsewhere as indicated, and shall be aligned to form a continuous ladder with rungs equally spaced vertically at a maximum distance of 12-inches apart. The top step shall be between 12-inches and 16-inches below the manhole cover. Steps shall be embedded in the manhole wall a minimum distance of 3-inches and rungs or cleats shall project a minimum clear distance of 5-

inches from the interior manhole wall, measured from the point of embedment. Additional steps shall be furnished and set as shown on the plans or where ordered by the Engineer.

Aluminum manhole steps shall be forged aluminum safety rung, alloy 6061-T6. That portion of the manhole step encased in concrete or masonry shall be coated with either bitumastic or zinc chromate paints.

Plastic manhole steps shall be in conformance with ASTM C478 and shall be of copolymer polypropylene conforming to ASTM D4101 for Type 11 propylene copolymers. The copolymer polypropylene compound shall encase a ½-inch Grade 60 steel reinforcing rod conforming to ASTM A615.

Stubs in manholes shall be short pieces cut from the bell end of the pipe. The stubs shall be set the required line and elevation and encased in the manhole masonry as shown on the Contract Drawings or as directed by the Engineer. Stubs shall not extend beyond the manhole base slab more than 2'-0".

Reinforced concrete stubs shall be short lengths of reinforced concrete pipe with bulkheads.

Geotextile fabric shall conform to CTDOT Form 816 Section M.08.01-26.

Bedding material shall consist of ¾" crushed stone and shall meet the requirements of CTDOT Form 816 Section M.01.01 gradation for No. 6 stone.

Submittals:

The working drawings and design computations shall be prepared and sealed by a Professional Engineer licensed in the State of Connecticut, who shall 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. The furnishing of calculations and working drawings shall not serve to relieve the Contractor of any part of his responsibility for the safety of the work or for the successful completion of the work.

The Contractor shall submit 9 copies of working drawings and design calculations delineating Junction Chamber to be used together with installation /construction plans to the Engineer for review prior to fabrication or construction of the Junction Chamber. Each sheet of the working drawings shall be stamped. Work shall not be started until approval from the Engineer has been obtained and required materials and equipment are available at the site. The working drawings shall be submitted in accordance with Section 1.05.02.

The design calculations shall include, but not be limited to the following:

1. Design loads and stresses for all structural members and components.

2. Allowable loads or stresses for all structural members and components.
3. References for all design equations.
4. All ASTM, AASHTO, or other material designations.
5. Design calculations for all structural elements including walls, slab, roof, connections, and splices of reinforcing bar.
6. Design calculations to show that the junction chamber can be adequately supported on existing ground on an adequate foundation.

The working drawings shall include, but not be limited to the following:

1. Layout plan showing the locations, limits, spacing, etc. of all structural members of the Junction Chamber with dimensions and tolerances.
2. Complete details of all components and sections including all materials incorporated into the Junction Chamber.
3. Member sizes and details of their "connections".
4. Method of installation including sequence, setting relative to existing pipe, anchorage during setting to existing pipe, and installation of seals.
5. Procedures outlining the proposed sequence of operations to be followed when installing finished.

Construction Methods: Earthwork, traffic control, environmental protection, rock excavation (where applicable), dewatering, support of excavations, sheeting and storing, backfilling and compacting, etc. shall be done in accordance with the applicable Sections of the Specifications.

PLACING PRECAST SECTIONS. After the excavation has been completed as required, the bedding material shall be placed from the bottom of the excavation to the bottom of the manhole and suitably compacted. The bedding material shall cover the full bottom of the excavation and be at least 6 inches in depth.

The precast section shall be carefully lifted and lowered to position in the excavation by suitable rigging. While the section is suspended, it shall be inspected and examined for defects. No section shall be installed that is known to be defective. If any defective section is discovered after it is installed, it shall be removed, replaced with a sound section and removed from the worksite at no additional cost to the State.

Placement of Reinforcement:

The cover of concrete over the outside circumferential reinforcement shall be 2 inches minimum. The cover of concrete over the inside circumferential reinforcement shall be 1 1/2 inches minimum, unless otherwise noted on the shop drawings. The clear distance of the end circumferential wires shall not be less than one inch nor more than two inches from the ends of each section. Reinforcement shall be assembled utilizing single or multiple layers of welded wire fabric (not to exceed 3 layers), supplemented with a single layer of deformed billet-steel bars, when necessary. The ends of the longitudinal distribution reinforcement shall be not more than 3 inches and not less than 1 1/2 inches from the ends of the Junction Chamber member.

Placing Concrete:

Concrete shall not be deposited in the forms until the Engineer has verified the presence and proper location of the reinforcing steel and other cast-in-place components, and has given his approval thereof.

Concrete shall not be deposited into the forms when the ambient temperature is below 40° F or above 90° F, unless adequate heating or cooling procedures are provided and have been previously approved by the Engineer, in accordance with Special Provision Section 6.01.03-2. The concrete temperature shall be within the range of 60° F to 90° F at the time of placement.

Production during the winter season, from November 15 to March 15 inclusive, will be permitted only on beds located in a completely enclosed structure of suitable size and dimension that provides a controlled atmosphere for the protection of both the casting operation and the product.

Outside concreting operations will not be permitted during rainfall unless the operation is completely under cover.

Void forms shall be held in place against uplift or lateral displacement during the pouring and vibrating of the concrete by substantial wire ties or other satisfactory means as approved by the Engineer.

The concrete shall be vibrated internally, or externally, or both, as ordered by the Engineer. The vibrating shall be done with care in such a manner as to avoid displacement of reinforcing steel, voids, forms, or other components. There shall be no interruption in the pouring of any of the sections. Concrete shall be carefully placed in the forms and sufficiently vibrated to produce a surface that is free from imperfections such as honeycombing, segregation, cracking, or checking. Any deficiencies noted in the sections may be cause for rejection.

Curing: The precast concrete elements shall be cured for a sufficient length of time so that the concrete will develop the specified compressive strength in 28 days or less. Any one of the following methods of curing or combinations thereof shall be used:

Steam Curing - The precast elements may be low-pressure steam cured by a system that will maintain a moist atmosphere.

Water Curing - The precast elements may be water cured by any method that will keep the sections moist.

Membrane Curing - A sealing membrane conforming to the requirements of ASTM Specification C309 may be applied and shall be left intact until the required concrete compressive strength is attained. The concrete temperature at the time of application shall be within +/- 10 degrees F of the atmospheric temperature. All surfaces shall be kept moist prior to the application of the compounds and shall be damp when the compound is applied.

Mixture: The Contractor shall design and submit to the Engineer for review a concrete mix that shall attain a minimum 28-day strength (f'c) as shown on the plans.

Test Cylinders:

During the casting of the sections, the Contractor shall make test cylinders. A minimum of 4 cylinders shall be taken during each production run or as ordered by the Engineer. The dimensions and type of cylinder mold shall be as specified by the Engineer. Cylinders shall be cured under the requirements of ASTM C31 and shall be used to determine the 28-day compressive strength requirements (f'c). Failure of any of the 28-day tests cylinders to meet 90% of the minimum compressive strength requirement may be cause for rejection. The Engineer also reserves the right to request and test core specimens from the sections to determine their adequacy.

Handling and Storage:

Care shall be taken during storage, transporting, hoisting and handling of all precast sections to prevent damage. Sections damaged by improper storing, transporting or handling shall be repaired or replaced by the Contractor, as directed by the Engineer and at no additional cost to the State. All storage and handling operations shall be as directed by the Engineer.

The precast sections shall not be removed from their casting beds until the concrete has attained a minimum compressive strength of 75% of the 28-day strength. The precast sections shall not be shipped to the job site until the 28-day strength (f'c) has been attained.

The joint between sections shall be thoroughly cleaned in accord with the manufacturer's instructions to assure a watertight joint.

Precast reinforced concrete sections shall be set to be vertical and the sections in true alignment.

Any chamber which shows any settlement or displacement after installation shall be taken out and reinstalled to the satisfaction of the Engineer.

Rubber gaskets shall be installed in all joints in accord with the manufacturer's recommendations.

All holes in sections used for handling shall be thoroughly plugged with rubber plugs made specifically for this purpose or shall be carefully sealed with non-shrink grout to obtain a watertight connection.

Openings or penetrations for lateral connections may be “core-bored”, where and if approved or directed by the Engineer. The use of blunt instruments or excessive force will not be permitted.

Inverts and watertables shall be built of brick or formed with poured concrete as directed by the Engineer. Inverts shall, in general, have a uniform grade between the inverts of the inlet and outlet pipes. Joints in brick inverts shall be tooled to be slightly concave and polished.

Only clean bricks shall be used. Bricks shall be moistened by suitable means, until they are neither so dry as to absorb water from the mortar nor so wet as to be slippery when laid.

Each brick shall be laid in a full bed and joint of mortar without requiring subsequent grouting, flushing or filling, and shall be thoroughly bonded.

Outside faces of masonry walls shall be plastered with mortar ½-inch thick.

If required, the masonry shall be properly moistened prior to application of the mortar. The mortar shall be carefully spread and troweled. After hardening, the mortar shall be carefully checked by being tapped for bond. Unbonded or unsound mortar shall be removed and replaced.

Brick masonry and mortar shall be protected from too rapid drying by the use of burlap, kept continually moist, or by other suitable means, and shall be protected from the weather and frost.

Cast iron frames shall be set to a full even bearing on cement mortar flush with finished grade or as directed by the Engineer. The flange of the frame shall not project outside of the masonry on which it rests. The inner circle of the frame shall not overhang the brickwork by more than one inch (1”).

Until such time as cast iron frames and covers are set, tops must be kept covered with temporary coverings to exclude persons, animals, dirt and foreign substances.

Upon completion of construction, all dirt and other foreign material shall be removed from Junction Chambers and manholes. No materials shall be left to impede sewage flows.

Placing and Compacting Backfill:

Dumping for backfilling is not allowed any nearer than 3 ft from the existing / new structure. The fill must be placed and compacted in layers not exceeding 8 inches. The maximum difference in the surface levels of the fill on opposite sides of the bridge must not exceed 2 feet.

The backfill shall be compacted to a minimum density of 95% of the Standard Proctor, as required by AASHTO T-99.

Soil within 1 foot of concrete surfaces should be hand-compacted. Elsewhere, use of rollers is acceptable. Vibrating roller-compactors shall not be used.

Backfill against a waterproofed surface shall be placed carefully to avoid damage to the waterproofing material.

Method of Measurement: This work will be measured for payment by the number of Junction Chambers furnished and installed, complete and in place, as shown, specified and directed.

Basis of Payment: This work will be paid for at the Contract unit price each for “Junction Chamber (of the No. specified)” complete in place, which price shall include complete design of the junction chamber signed and sealed by a Professional Engineer licensed in the State of Connecticut, all work necessary and described in this section to incorporate the manhole into the work, including all labor, material and equipment incidental thereto. It shall also include the clearing, trenching excavation and disposal of excavated materials, refilling trenches, furnishing additional material for refilling, grading, sheeting, bracing, piping and couplings required to connect to existing piping and all incidental work, complete, in place, and accepted by the Engineer.

PAY ITEM

Junction Chamber No. 1
Junction Chamber No. 2

PAY UNIT

Ea.
Ea.

ITEM #1408455A - TEMPORARY SANITARY SEWER BYPASS

Description: This item consists of furnishing of all materials, labor, equipment, power, and maintenance, to implement a temporary pumping system for the purpose of diverting existing sanitary and drainage flows around the work area for the duration of the project as shown in the Contract plans. Contractor shall obtain all the required permits including the bypass notification requirements for the Connecticut Department of Energy and Environmental Protection and the Metropolitan District Commission prior to commencement of bypass operations. The work under this item shall also include the design, installation and operation of the temporary pumping system. The Contractor shall employ the services of a vendor firm who can demonstrate to the Engineer that it has the required expertise in the design and operation of temporary bypass pumping systems. The vendor firm shall provide at least five references of projects similar in size and complexity to these projects that have been performed by the firm within the past three years.

The by-pass system shall meet the requirements of all codes and regulatory agencies having jurisdiction. The Contractor shall maintain access to vehicular and pedestrian traffic during the entire bypass pumping operation, as necessary or required, and implement all the necessary or environmental protection procedures as may be required by the presiding authorities having jurisdiction over such matters.

Materials:

All pumps used shall be centrifugal, end suction, fully automatic self-priming units that do not require the use of foot-valves, diaphragm pumps, isolation valves or vacuum pumps in the priming system. Electric, hydraulic submersible or well point type pumps are prohibited. All pumps used must be constructed to allow dry running for long periods to accommodate the cyclical nature of bypass flows. The pumps shall not be hydraulic submersible type.

All pumps shall be Godwin Dri-prime Automatic Self-priming Pumps (CD, DPC, or HL Series) as manufactured by Godwin Pumps of America, Inc., (609) 467-3636, (301) 390-3806, Rain-For-Rent (DV Series) as manufactured by Rain-For-Rent., (661) 399-9124, or approved equal. The Contractor shall provide the necessary stop/start controls for each pump.

The Contractor shall include one stand-by pump system (including suction and discharge piping) of each size to be maintained on site.

Additional back-up pumps shall be on-line, isolated from the primary system by a valve.

Discharge Piping - in order to prevent the accidental spillage of flows, all temporary discharge systems shall be constructed of rigid pipe with positive, restrained joints. Under no circumstances will aluminum "Irrigation" type piping or glued PVC pipe be allowed. Discharge hoses will only be allowed in short sections and with the specific permission of the Engineer.

Allowable piping materials will be Godwin “QD” steel pipe (Godwin Pumps of America, Inc.), or fused, high-density polyethylene pipe as manufactured by Phillips Driscopipe, Inc., or approved equal. SDR of discharge piping shall be suitable for the calculated discharge pressures. The vendor fusing the pipe must have a minimum of five (5) years of experience fusing HDPE pipe of the same diameter required for the project.

Construction Method:

At least 30 days prior to implementation of the by pass pumping , the Contractor shall submit to the Engineer for review working drawings, catalogue cuts of materials and equipment and necessary design calculations of the proposed by pass pumping scheme stamped by a Professional Engineer in the State of Connecticut. The Contractor’s proposed plan for the by pass shall be based on the concept shown in the contract plans. Any changes required in the bypass system plan from the concept shown in the contract plans shall be brought to the Engineer’s attention prior to the submission of the working drawings.

The Connecticut Department of Environmental Protection’s By-Pass Report Form and Notification Log for the Metropolitan District Commission are attached following this section. The Engineer shall receive a copy of the form and log from the Contractor when any by-pass work is performed.

The working drawing submittal will also include descriptions outlining all provisions and precautions to be taken by the Contractor regarding the handling of existing sanitary and drainage flows. This plan must be specific and complete, including such items as schedules, locations, elevations, capacities of equipment, materials and all other incidental items necessary and/or required to insure proper protection of the facilities, including protection of the access and bypass pumping locations from damage due to the discharge flows, compliance with the requirements and permit conditions specified in these contract documents. No construction or bypass pumping shall begin until all provisions and requirements have been reviewed by the Engineer.

- A) The Contractor’s working drawings shall include, but not be limited to the following:
 - 1. Staging areas for pumps
 - 2. Flow diversion method and types of materials
 - 3. Number, size, material, location and method of installation of suction piping
 - 4. Number, size, material, method of installation and location of discharge piping
 - 5. Bypass pump sizes, capacity, number of each size to be on site and the related power requirements Calculations of static lift, friction losses, and flow velocity (pump curves showing pump operating range shall be submitted)
 - 6. Standby power generator size, location
 - 7. Downstream discharge plan
 - 8. Thrust and restraint block sizes and locations
 - 9. Sections showing suction and discharge pipe depth, embedment, select fill and special backfill

10. Method of noise control for each pump and/or generator, with external dB valve
11. Any temporary pipe supports and anchoring required
12. Design plans and computation for access to bypass pumping locations indicated on the drawings
13. Calculations for selection of bypass pumping pipe size
14. Schedule for installation of and maintenance of bypass pumping lines
15. The need for and details of any Overcast (Doghouse) Manhole
16. Plan indicating proposed location of bypass pumping lines
17. Pumps may not be benched down to make suction lift
18. The suction side of the pumping system shall not exceed velocities of 10 feet per second. The discharge side of the pumping system shall not exceed velocities of 12 feet per second.

B) The Contractor's working drawings shall meet the following design requirements:

1. Bypass pumping systems shall have sufficient capacity to pump a peak flow of 11,000 gpm. The Contractor shall provide all pipeline, plugs and pumps of adequate size to handle peak flow, and discharge piping to ensure that the total flow can be safely diverted around the area of work. Bypass pumping system will be required to operate 24 hours per day.
2. The Contractor shall have adequate standby power and pumping equipment available and ready for immediate operation and use in the event of an emergency or breakdown. One standby pump for each size pump utilized shall be installed at the mainline flow bypassing locations, ready for use in the event of primary pump failure.
3. Bypass pumping system shall be capable of bypassing the flow around the work area and of releasing any amount of flow up to full available flow into the work area as necessary for satisfactory performance of work.

C) The Contractor's bypass pumping system shall meet the following performance requirements:

1. It is essential for the protection of the public safety and private property that there is no interruption in the flow throughout the duration of the project. To this end, the Contractor shall provide, maintain and operate all temporary facilities such as dams, plugs, pumping equipment (both primary and back-up units as required), conduits, all necessary power, and all other labor and equipment necessary to intercept the sanitary/stream flow before it reaches the point where it would interfere with his work, carry it past his work and return it to the existing sewer/drainage channel downstream of his work.
2. The design, installation and operation of the temporary pumping system shall be the Contractor's responsibility. The bypass pumping system shall meet the requirements of all codes and regulatory agencies having jurisdiction. The Contractor shall be responsible for damage due

to sewer backups or overflows onto streets, yards and unpaved areas or into buildings, adjacent ditches, storm sewers, and waterways, including any subsequent remediation measures required or made necessary by such sewer backups or overflows.

3. The Contractor shall provide all necessary means to safely convey the sanitary/stream flow past the work area. The Contractor will not be permitted to stop or impede the flows under any circumstances

4. The Contractor shall maintain flow around the work area in a manner that will not cause surcharging or significant level variations in the existing sewer/drainage channel, and that will protect public and private property from damage and flooding.

The Contractor shall protect water resources, wetlands and other natural resources.

5. The Contractor shall be responsible to meet the noise requirements of the Contract. All diesel driven primary and standby pumps shall be sound attenuated. The use of Critical Silenced Canopy Pumps or acoustical Whisper Pac enclosures for sound attenuation is required.

6. The temporary bypass pumping system shall include floats (or other acceptable level sensing devices) that will transmit a high water condition to an on-site autodialer. Once activated, the unit will dial a telephone number (up to eight maximum) of emergency personnel including the Contractor's Superintendent and other designated "on call" employees with a pre-recorded message stating the nature of the alarm. Dial emergency personnel as directed by the Engineer. The autodialer shall also alert a designated "on-call" employee of the Contractor, should the Superintendent fail to acknowledge the call.

7. The temporary bypass system must remain in operation until normal wastewater flow can be completely restored.

8. The Contractor shall provide all necessary means to safely convey wastewater flow past the Work. The Contractor shall not be permitted to stop or impede the main flows under any circumstances.

9. The Contractor shall maintain wastewater flow in a manner that will not cause surcharging of sewers, damage to sewers and that will protect public and private property from damage and flooding. The wastewater flow shall be maintained in a manner that protects downstream processes at the Water Pollution Control Facility from flooding and does not affect the quality of wastewater treatment as determined solely by the governing authority having jurisdiction.

10. Any excavation required for the bypass system shall not reduce the suction lift without the specific approval of the Engineer.

11. The Contractor shall investigate and verify sanitary sewer flows to evaluate the scope of facilities required for the proper conveyance and maintenance of said flows.

12. The Contractor shall furnish to the Engineer his proposed detailing methods, procedures, equipment and materials to maintain flows and accomplish the work as described herein. The Contractor alone shall be responsible for the safety of the work, the protection of any facilities, utilities or adjoining properties, and for the successful completion of the work under this item.

13. The Contractor is hereby notified that due to the age and condition of the existing sewer systems, the flows in said systems may increase during storms or wet weather in general. All flows, regardless of source or quantity, must be maintained in an acceptable manner, so as not to overflow, backup or otherwise create a nuisance or health hazards, or in any way endanger adjoining properties or facilities.

14. To this end, the Contractor shall furnish, install or construct temporary facilities, connections or structures as necessary to convey and maintain the aforementioned flows during the prosecution of the work under this Contract. All such temporary facilities, structures or connections shall be designed and constructed to permit excavation for permanent work to the payment limits shown on the Contract Drawings. Failures of such temporary facilities which endanger or prevent proper completion of permanent work shall be corrected at the sole expense of the Contractor.

15. The Contractor shall divert flows as necessary to construct or reconstruct inverts, benching or other portions of manholes or chambers as directed by the Engineer

D) The Contractor's bypass pumping system shall meet the following Field Quality Control and Maintenance requirements:

1. The Contractor shall perform leakage and pressure tests of the bypass pumping discharge piping using clean water prior to actual operation. The Engineer shall be given 24 hours notice prior to testing.

2. During bypass pumping, do not allow sewage to be leaked, dumped, or spilled in or onto any area outside of the existing sewer system. If a sewage leak, dump or spill occurs, Contractor shall notify the Engineer and the Metropolitan District's Command Center (860-513-3388) *immediately*.

3. The Contractor shall insure that the temporary pumping system is properly maintained and a responsible operator shall be on hand at all times when pumps are operating.

4. Spare parts for pumps and piping shall be kept on site as required.

5. Adequate hoisting equipment for each pump and accessories shall be maintained on the site.

6. In the event of rain, the Contractor shall coordinate the operation of bypassing with the Engineer.

7. High flow conditions may require the Contractor to temporarily suspend work. Days on which work has been suspended shall not be considered working days and no additional compensation will be provided by the State.

8. The Contractor is forbidden to discharge wastewater onto private properties, public roadways or into drainage systems, canals, channels, creeks, wetlands as delineated on the Contract Drawings, or open water courses. The Contractor shall be responsible for any wastewater spills and back-ups and the cost and fines associated with their cleanup. The Contractor shall pay for all damage caused by wastewater spills and back-ups. The Contractor is responsible to report any discharges to the proper authorities.

E) The Contractor will take the following precautions while implementing the bypass system pumping plan:

1. Contractor is responsible for locating any existing utilities in the area the Contractor selects to locate the bypass pipelines. The Contractor shall locate his bypass pipelines to minimize any disturbance to existing utilities and shall obtain approval of the pipeline locations from the Engineer and/or the governing authority having jurisdiction. All costs associated with relocating utilities and obtaining all approvals shall be paid by the Contractor.

2. During all bypass pumping operation, the Contractor shall protect the work area and all local utilities from damage inflicted by any equipment. The Contractor shall be responsible for all physical damage to public and private property caused by human or mechanical failure.

3. The Contractor shall construct temporary bypass pumping structures only at the access locations indicated on the drawings and may be required to provide adequate suction conduit.

4. Diverting or blocking of sanitary/stream flows shall incorporate primary and secondary devices. When diversion or blocking is no longer needed for performance and acceptance or work, it is to be removed in a manner that permits the flow to slowly return to normal without surge, to prevent surcharging or causing other major disturbances downstream.

5. The Contractor shall exercise caution and comply with OSHA requirements when working in the presence of gases, combustible or oxygen-deficient atmospheres, and confined spaces.

6. When bypass pumping operations are complete, piping shall be drained into the sewer prior to disassembly.

7. Except as specifically permitted, the installation of the bypass pipelines is prohibited in

all salt marsh/wetland areas. The pipeline must be located off streets and sidewalks and on shoulders of the roads. When the bypass pipeline crosses local streets and private driveways, the Contractor must place the bypass pipelines in trenches and cover with temporary pavement. Upon completion of the bypass pumping operations, and after the receipt of written permission from the Engineer, the Contractor shall remove all the piping, restore all property to pre-construction condition and restore all pavement. The Contractor is responsible for obtaining any approvals from the State for placement of the temporary pipeline within public ways.

F) Overcast (Doghouse) Manhole

1. Mechanical excavation may be made only to an elevation above the existing pipe to a level where the sewer pipe will not be damaged.
2. Below this point excavation shall be made by hand to uncover and excavate around and under the pipe. Prior to any excavation below the existing pipe, the pipe shall be supported to prevent settlement.
3. Once the existing pipe is sufficiently supported, the soil shall be carefully excavated to no less than 12-inches below the bottom of the existing pipe. A 6-inch layer of 3/4" crushed stone shall be placed on geotextile fabric and thoroughly compacted. A 6-inch concrete base slab shall be poured over the crushed stone up to the bottom of the existing pipe.
4. Once the overcast section is set in place a 5-foot inside diameter concrete base shall be cast up to the springline of pipe.
5. The upper sections of the manhole shall then be installed and the manhole frame and cover installed as shown in the Contract Drawings for Standard Watertight Manhole Frame and Cover.
6. The top half of the existing pipe shall then be carefully removed by first saw cutting the pipe to avoid damage to the adjacent portions of pipe to remain and to prevent excessive debris from entering the sewer.
7. Once the concrete base has cured sufficiently to withstand all loads to which it will be subjected to, the excavation shall be backfilled and compacted as specified.
8. Above the top manhole section, a minimum 6" of brickwork shall be set before installing the specified manhole frame and cover at such an elevation that the cover is flush with the finished pavement surface or ground surface.

Method of Measurement:

This item, being paid for on a lump sum basis, will not be measured for payment.

Basis of payment:

Payment for this item will be made at the contract lump sum price for “Temporary Sanitary Sewer Bypass” complete and accepted, which price shall include all work necessary and as described in this section, shown on the Contract drawings and directed by the Engineer, including all material, equipment, testing, labor and work incidental to the construction, removal of the bypass system and the removal and disposal of all protective works or facilities required during the construction of the bypass pumping system.

PAY ITEM:

PAY UNIT:

Temporary Sanitary Sewer Bypass

L.S.



MDC EMERGENCY / PLANNED BY-PASS PUMPING REPORTING FORM

WORK ORDER #: _____

FINAL REPORT RE: _____

Town: _____

Time By-Pass was Initiated (HH:MM): _____

Date By-Pass was Initiated: _____

Time By-Pass was Stopped (HH:MM): _____

Date By-Pass was Stopped: _____

Duration of By-Pass: _____

Reason for By-Pass: _____

Type of By-Pass: _____

Exact Location of By-Pass Pumping: _____

How issue was discovered (e.g. CCTV): _____

Quantity / Volume of By-Pass Pumped: _____

Was any sewage spilled? _____ If yes, complete SSO By-Pass Reporting Form

If Equipment Failed, Date of Last Inspection, Maintenance or Repair: _____

Steps taken to minimize volume and duration of By-Pass pumping: _____

Reason for By-Pass Pumping: _____

Steps taken to prevent recurrence of By-Pass pumping: _____

Date of last by-pass at this location: _____

TIME

MDC EMERGENCY / PLANNED BY-PASS PUMPING REPORTING FORM

CTDEEP - Iliana Raffa (860) 424-3758 (Primary DEEP Contact)*

*If Iliana Raffa is not available, call Municipal Facilities Sections at: (860) 424-3704

CTDEEP - Iliana Raffa (860) 424-3758 (Primary DEEP Contact)*

IF PLANNED BY-PASS PUMPING IS PERFORMED AFTER HOURS LEAVE MESSAGE

Note if left message _____

Time
(HH:MM)

Date
(MM-DD-YYYY)

BY-PASS PUMPING REPORT LOG

Submit by E-mail to CT DEEP

_____ E-mail to DEEP Iliana Raffa or:

_____ Fax to DEEP Iliana Raffa (860) 424-4067 (fax)

_____ E-mail to EH&S - Craig Scott

Report Submitted by: _____ Title: _____

Signature: _____ Date: _____

FINAL Report by: _____ Title: _____

Signature: _____ Date: _____

Submit Completed Report to:

State of Connecticut
Department of Energy and Environmental Protection
Bureau of Water Management - Attention Iliana Raffa
79 Elm Street
Hartford, CT 06106-5127

TOWN HEALTH DIRECTORS

WEST HARTFORD & BLOOMFIELD HEALTH DISTRICT:

Steve Huleatt, Director of Health
WHBHD
693-C Bloomfield Avenue
Bloomfield, CT 06002

Tel: (860) 561-7900
Fax: (860) 561-7918

e-mail: Steveh@westhartford.org

NEWINGTON, ROCKY HILL & WETHERSFIELD HEALTH DISTRICT:

Paul Hutcheon, Director of Health
Wethersfield Town Hall
505 Silas Deane Highway
Wethersfield, CT 06109

Tel: (860) 721-2822
Fax: (860) 721-2823

e-mail: paul.hutcheon@wethersfieldct.com

HARTFORD HEALTH DEPARTMENT

Raul Pino, Acting Director of Health
Hartford Health Department
131 Coventry Street
Hartford, CT 06112

Tel: (860) 757-4744

Fax: (860) 722-6851

e-mail: pinor001@hartford.gov

EAST HARTFORD HEALTH DEPARTMENT

James Cordier, Director of Health
East Hartford Town Hall
740 Main Street
East Hartford, CT 06108

Tel: (860) 291-7324

Fax: (860) 291-7326

e-mail: jcordier@ci.east-hartford.ct.us

WINDSOR HEALTH DEPARTMENT

Charles Petrillo, Director of Health
Windsor Town Hall
275 Broad Street
Windsor, CT 06095

Tel: (860) 285-1823

Fax: (860) 285-1809

e-mail: health@townofwindsorct.com

CT DEEP after hours dispatch: (860) 424-3338 (860) 424-3333 or (860) 424-3704

DO NOT LEAVE MESSAGE

NOTICE TO CONTRACTOR – CLEANING OF CATCH BASINS, PIPES AND OUTLETS

All existing drainage structures and proposed drainage structures and drainage pipes (including outlets) within the project limits shall be routinely inspected and cleaned throughout the project duration and at post construction.

The cleaning of drainage structures or drainage pipes in non-regulated areas must be reported under the Department of Transportation's (Department) MS4 Permit requirements. In addition, the cleaning of outfalls or areas within the Department's right-of-way which is located in a regulated area must be reported under the Department's General Maintenance Permit.

Prior to the commencement of any work associated with the cleaning of catch basins, pipes and outlets, the Contractor and Inspector shall meet with the District Drainage Engineer for the purpose of reviewing the requirements and restrictions specified in the MS4 Permit and General Maintenance Permit and report all activities at each location and establish reporting protocols to the District Drainage Engineer that will be adhered to during construction.

This work shall not be measured for payment, but shall be included in the general cost of the work.

SECTION 1.03 - AWARD AND EXECUTION OF CONTRACT

Article 1.03.02 - Award and Execution of Contract:

After the second sentence of the only paragraph add the following:

The successful bidder is hereby notified of the Department's intent to award this contract on or before June 21, 2013.

Article 1.03.07 – Insurance:

The first paragraph is revised as follows:

Before the Contract is executed, the Contractor must file with the Commissioner a certificate of insurance, fully executed by an insurance company or companies satisfactory to the Commissioner, on a form **acceptable to** the Department, for the insurance policy or policies required below, which policy or policies shall be in accordance with the terms of said Certificate of Insurance. Continuance of the required insurance during the entire term of the Contract shall be the responsibility of the Contractor and is a condition of the Contract.

Add the following after the second paragraph:

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

Replace the like named paragraph with the following:

4. Owner's and Contractor's Protective Liability Insurance for and in the Name of the State:

With respect to the Contractor's Project operations and also those of its subcontractors, the Contractor shall carry, for and on behalf of the State, insurance which shall provide coverage of at least \$1,000,000 for each accident or occurrence resulting in damages from (1) bodily injury to or death of persons and/or (2) injury to or destruction of property. Subject to that limit per accident or occurrence, the policy shall provide an aggregate coverage of at least \$2,000,000 for all pertinent damages arising during the policy period.

Delete subsections 8, 9 and 10 and replace them with the following:

8. Compensation:

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

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

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

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

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

Article 1.03.08 - Notice to Proceed and Commencement of Work:

Change the first paragraph to read as follows:

" The Contractor shall commence and proceed with the Contract work on the date specified in a written Notice to Proceed issued by the Engineer to the Contractor. The date specified will be no later than 45 calendar days after the date of the execution of the Contract by the Department, however, the contractor is hereby put on notice that it is the Department's intent to issue the Notice to Proceed no later than August 5, 2013."

ITEM NO. 0202315A - DISPOSAL OF CONTROLLED MATERIALS

Description:

Work under this Item shall consist of the transportation and final off-site disposal/recycling/treatment of Controlled Materials (excluding dewatering fluids) that have been generated from various excavations within the Area of Environmental Concern (AOEC) and Low-Level Area of Environmental Concern (LLAOEC) that have been determined to be contaminated with regulated substances at non-hazardous levels. This contamination is documented in the report listed in the “Notice to Contractor – Environmental Investigations”. The Controlled Materials will be properly characterized by the Engineer and shall be excavated, loaded, transported directly to and treated/recycled/disposed of at a Department-approved permitted treatment/disposal/recycle facility (TDRF) listed herein.

Contractor Take Note: It is anticipated that the Contractor shall be able to excavate, load, and transport all Controlled Materials requiring off-site disposal directly from the Project site. The existing WSA is to be utilized on an emergency as-needed basis only. No delay claim will be considered based upon the Contractor’s failure to handle the anticipated volume of Controlled Materials in this manner.

Controlled Materials include:

- (1) Soil materials (excluding pavement, concrete, sub-base, structures, utilities, and ledge/boulders) that contain regulated substances at concentrations exceeding numeric criteria in the Connecticut Department of Energy and Environmental Protection (CTDEEP) Remediation Standard Regulations (RSRs); and
- (2) Soil materials that contain detectable concentrations of regulated substances that are below numeric criteria in CTCEEP RSRs, but above background concentrations, and which cannot be reused within the Project limits.

The Contractor must use the following Department-approved TDRFs for the disposal of non-hazardous controlled materials:

Cranston Sanitary Landfill 1690 Pontiac Avenue Cranston, RI 02920 (413) 552-3688; Paul Mahoney	Soil Safe, Inc. 378 Route 130 Logan Township Bridgeport, NJ 08085 (410) 872-3990 XT. 1123; Mike Kozak
Ted Ondrick Company, LLC 58 Industrial Road Chicopee, MA 01020 (413) 592-2565; Alan Desrosiers	Clean Earth of Carteret 24 Middlesex Avenue Carteret, NJ 07008 (732) 541-8909; Cheryl Coffee

South Hadley Landfill, LLC 12 Industrial Drive South Hadley, MA 01075 (508) 989-7074; Ray Bailey	Waste Management (Chicopee Sanitary Landfill) 161 New Lombard Road Chicopee, MA 01020
ESMI of New York, LLC 304 Towpath Road Fort Edward, NY 12828 (518) 747-5500; Peter Hansen	ESMI of New Hampshire, LLC 67 International Drive Louden, NH 03307 (518) 747-5500; Peter Hansen (603) 783-0228; Stephen Raper
Ontario County Landfill 3555 Post Farm Road Stanley, New York 14561 (603) 235-3597; Scott Sampson	Waste Management (Holyoke Landfill) 11 New Ludlow Road Granby, MA 01033 (413) 534-8741; Tom Heaton
Phoenix Soil, LLC 130 Freight Street Waterbury, CT 06702 (203) 759-0053; Kenneth Quirke	Hazelton Creek Properties, LLC 280 South Church Street Hazelton, PA 18201 (570) 207-2000; Allen Swantek

Construction Methods:

A. Submittals

The apparent low bidder shall submit in writing, within fourteen (14) days after Bid opening, the following:

- (1) A letter listing the names of the TDRFs (from the list above), which they will use to receive Controlled Material from this Project;
- (2) A copy of the attached “Disposal Facility Material Acceptance Certification” form from each facility, which shall be signed by an authorized representative of each TDRF; and
- (3) A copy of the facility acceptance criteria and facility sampling frequency requirements from each facility.

No facility may be substituted for the one(s) designated in the Contractor’s submittal without the Engineer’s prior approval. If the material cannot be accepted by any of the Contractor’s listed facilities herein, the Department will supply the Contractor with the name(s) of other acceptable facilities.

Any other Contractor which the Department may subsequently designate as the apparent low bidder shall make the aforementioned submissions within fourteen (14) days from the date on which the Department notifies the Contractor that it has become the apparent low bidder. If, however, the Department deems it is necessary for such a subsequent-designated Contractor to

make said submissions within a shorter period of time, the Contractor shall make those submissions within the time designated by the Department.

Failure to comply with all of the above requirements may result in the rejection of the bid.

No facility may be substituted for the one(s) designated in the Contractor's submittal without the Engineer's prior approval. If the material cannot be accepted by any of the Contractor's designated facilities, the Department will supply the Contractor with the name(s) of other acceptable facilities.

Disposal Facility Materials Acceptance Certification |

Project Number: 63-601

Project Location: _____

Facility Name: _____ Telephone: _____

Facility Address: _____ Fax: _____

The Contractor has supplied the analytical data contained in the report concerning the site investigation performed by the Designer. I have personally reviewed this data and intend to accept the following:

This intent to accept the material will be subject to and dependent upon the facility's subsequent evaluation of waste characterization determination documentation to be provided to the Contractor by the Engineer. |

Authorized Facility Representative _____ / _____

Printed/Typed Name

Title

_____ / _____

Signature

Date

Note: The facility shall attach the acceptance criteria and facility sampling frequency requirements to this document.

DO NOT ALTER FORM IN ANY WAY. FORM MUST BE COMPLETED IN ENTIRETY.

B. General

When Controlled Materials are encountered during the course of the work, health and safety provisions shall conform to the appropriate sections of the Contract. Provisions may include implementation of engineering controls, air and personal monitoring, the use of chemical protective clothing (CPC), personal protective equipment (PPE), implementation of engineering controls, air and personal monitoring, and decontamination procedures.

Controlled Materials requiring disposal off-site shall be loaded directly into vehicles for immediate transport to the Contractor selected TDRF(s). The Contractor shall adhere to Item No. 0101130A – Environmental Work – Solidification as necessary, prior to the loading and transport of any Controlled Materials. Controlled Materials shall not be stockpiled within the Project limits, unless otherwise directed by the Engineer.

C. Material Disposal

The Engineer shall sample the in-place Controlled Materials prior to the start of any work for waste characterization purposes. The Engineer will provide the Contractor with the waste characterization sampling results.

The Contractor shall obtain and complete all paperwork necessary to arrange for material disposal (such as disposal facility waste profile sheets). It is solely the Contractor's responsibility to coordinate the disposal of Controlled Materials with his selected TDRF(s). Upon receipt of the final approval from the facility, the Contractor shall arrange for the excavation, loading, transport, and treatment/recycling/disposal of the materials in accordance with all Federal and State regulations.

The Contractor shall not begin excavation within the Project AOEC and/or LLAOEC until the selected disposal facility has indicated final approval of the Controlled Material for disposal. No claim will be considered based on the failure of the Contractor's selected disposal facility(s) to meet the Contractor's production rate or for the Contractor's failure to select sufficient facilities to meet its production rate.

Any material processing (removal of woody debris, scrap metal, pressure-treated and untreated wood timber, large stone, concrete, polyethylene sheeting or similar material) required by the Contractor's selected facility will be completed by the Contractor prior to the material leaving the site. It is solely the Contractor's responsibility to meet any such requirements of its facility. Any materials removed shall be disposed of or recycled in a manner acceptable to the Engineer at no additional cost. If creosote treated timbers are removed, they will be disposed of under the item "Disposal of Contaminated Timber Piles", "Disposal of Contaminated Railroad Ties" or in accordance with Article 1.04.05 in the absence of such items.

All manifests or bills of lading utilized to accompany the transportation of the material shall be prepared by the Contractor and signed by an authorized Department representative, as Generator, for each truckload of material that leaves the site. The Contractor shall forward the appropriate

original copies of all manifests or bills of lading to the Engineer the same day the material leaves the Project.

A load-specific certificate of treatment/recycling/disposal, signed by the authorized agent representing the disposal facility, shall be obtained by the Contractor and promptly delivered to the Engineer for each load.

If it becomes necessary for Controlled Material to be temporarily stored at the existing WSA, then the Engineer shall sample such materials stored at a frequency established by the selected TDRFs. The Contractor shall designate to the Engineer which facility it intends to use prior to samples being taken. The Contractor is hereby notified that laboratory turnaround time is expected to be fifteen (15) working days. Turnaround time is the period of time beginning when the Contractor notifies the Engineer which facility it intends to use and that the designated storage bin within the WSA is ready for sampling, and ending with the Contractor's receipt of the laboratory analytical results. Any change of intended TDRF may prompt the need to resample and will therefore restart the time required for laboratory turnaround. The laboratory will furnish such results to the Engineer. Upon receipt, the Engineer will make available to the Contractor the results of the final waste characterization determinations. **No delay claim will be considered based upon the Contractor's failure to accommodate the laboratory turnaround time as identified above.**

D. Dust Control

The Contractor shall implement a fugitive dust suppression program in accordance with the Contract to prevent the off-site migration of particulate matter and/or dust resulting from excavation, loading, and operations associated with Controlled Materials. It shall be the Contractor's responsibility to supervise fugitive dust control measures and to monitor airborne particulate matter. The Contractor shall:

1. Employ reasonable fugitive dust suppression techniques.
2. Visually observe the amounts of particulate and/or fugitive dust generated during the handling of Controlled Materials. If the apparent amount of fugitive dust and/or particulate matter is not acceptable to the Engineer, the Engineer may direct the Contractor to implement corrective measures at his discretion, including, but not limited to, the following:
 - (a) apply water to pavement surfaces
 - (b) apply water to equipment and excavation faces; and
 - (c) apply water during excavation, loading, and dumping.

E. Material Transportation

In addition to all pertinent Federal, State, and local laws or regulatory agency policies, the Contractor shall adhere to the following precautions during the transport of Controlled Materials off-site:

- Transported Controlled Materials are to be covered sufficiently to preclude the loss of material during transport prior to leaving the site and are to remain covered until the arrival at the selected treatment/recycling/disposal facility.
- All vehicles shall have secure, watertight containers free of defects for material transportation.
- All vehicles departing the site are to be properly logged to show the vehicle identification, driver's name, time of departure, destination, and approximate volume, and contents of materials carried.
- No materials shall leave the site unless a treatment/recycling/disposal facility willing to accept all of the material being transported has agreed to accept the type and quantity of waste.

F. Dewatering

Dewatering activities shall conform to items in pertinent articles of the Contract.

G. Equipment Decontamination

All equipment shall be provided to the work site free of gross contamination. The Engineer may prohibit from the site any equipment that in his opinion has not been thoroughly decontaminated prior to arrival. Any decontamination of the Contractor's equipment prior to arrival at the site shall be at the expense of the Contractor. The Contractor is prohibited from decontaminating equipment on the Project that has not been thoroughly decontaminated prior to arrival.

The Contractor shall furnish labor, materials, tools, and equipment for decontamination of all equipment and supplies that are used to handle Controlled Materials. Decontamination shall be conducted at an area acceptable to the Engineer and shall be required prior to equipment and supplies leaving the Project and between stages of the work.

The Contractor shall use dry decontamination procedures. Residuals from dry decontamination activities shall be collected and managed as Controlled Materials. If the results from dry methods are unsatisfactory to the Engineer, the Contractor shall modify decontamination procedures as required.

The Contractor shall be responsible for the collection and treatment/recycling/disposal of any liquid wastes that may be generated by its decontamination activities in accordance with applicable regulations.

Method of Measurement:

The work of “DISPOSAL OF CONTROLLED MATERIALS” will be measured for payment as the actual net weight in tons of material delivered to the TDRF. Such determinations shall be made by measuring each hauling vehicle on the certified permanent scales at the TDRF. Total weight will be the summation of weight bills issued by the facility specific to this Project. Excess excavations made by the Contractor beyond the payment limits specified in Specification Sections 2.02, 2.03, 2.05, 2.06, or the Contract Special Provisions (as appropriate) will not be measured for payment and the Contractor assumes responsibility for all costs associated with the appropriate handling, management, and disposal of this material.

The disposal of excavated materials, originally anticipated to be Controlled Materials, but determined by characterization sampling not to contain concentrations of regulated chemicals (non-polluted or “clean” materials) will not be measured for payment under this Item but will be considered as surplus excavated materials and shall be handled in accordance with Article 1.04.05.

Any materials, which are determined through characterization sampling to be contaminated but reusable in accordance with the Remediation Standard Regulations, and which are reused within Project limits, will not be measured for payment under this Item. This material will be paid for under Item 0202318A – Management of Reusable Controlled Material.

Equipment decontamination, the collection of residuals, and the collection and disposal of liquids generated during equipment decontamination activities will not be measured separately for payment.

Any material processing (other than the solidification of materials with free draining liquids completed in accordance with Item No. 0101130A – Environmental Work - Solidification) required by the Contractor-selected disposal facility, including the proper disposal of all removed materials other than creosote treated wood, will not be measured for payment.

Basis of Payment:

This work shall be paid for at the Contract unit price, which shall include the transportation of Controlled Materials from the Project to the TDRF; the fees paid to the facility for treatment/recycling/disposal; the preparation of all related paperwork; and all equipment, materials, tools, and labor incidental to this work. **This unit price will be applicable to all of the Contractor-selected disposal facilities and will not change for the duration of the Project.**

This price shall also include equipment decontamination, the collection and handling of residuals generated during decontamination, and the collection and disposal of liquids generated during equipment decontamination activities.

Payment for dust control activities shall be made under the appropriate Contract items.

Pay Item	Pay Unit
Disposal of Controlled Materials	ton

ITEM 0216013A - EXPANDED POLYSTYRENE FILL (1.25 PCF DENSITY)

ITEM 0216014A - EXPANDED POLYSTYRENE FILL (1.5 PCF DENSITY)

ITEM 0216015A - EXPANDED POLYSTYRENE FILL (2.0 PCF DENSITY)

Description:

1. Expanded Polystyrene Fill:

Work under this item shall include designing Expanded Polystyrene (EPS) block sizes, geometries and layout, as well as furnishing, on-site storage and protection prior to placement, and placing the EPS block fill to the lines and grades indicated on the Contract Drawings and as specified hereinto create the new roadway embankments.

Materials:

1. Expanded Polystyrene Fill:

Furnish the three densities of EPS blocks described below and as indicated on the contract drawings in sufficient quantities and of appropriate dimensions to create stable EPS block fills as indicated on the Contract Drawings and specified herein. EPS is typically supplied as rectangular blocks with nominal dimensions of 2 ft. x 4 ft. x 8 ft. Other block shapes and dimensions are used to form horizontal and vertical curves in the fill. Blocks shall be smooth and flat on all surfaces and have a flatness and dimensional tolerance of $\pm 0.5\%$. Blocks shall be manufactured using a modified resin that contains a fire retardant additive. Blocks shall be seasoned by storing them at the manufacturer's facility in normal ambient room temperature for a minimum of 72 hours after being released from the mold. Blocks shall meet the following physical requirements after seasoning:

MINIMUM GEOFOAM PHYSICAL PROPERTIES

	EPS 1.25 PCF	EPS 1.5 PCF	EPS 2.0 PCF
Min. Whole Block Dry Density, (lbs/ft ³)	1.25	1.5	2.0
Min. Test Specimen Dry Density, (lbs/ft ³)	1.15	1.35	1.80
Min. Compressive Strength @1% deformation, (psi)	7.2	10.1	14.5
Flexural Strength (psi)	30.0	40.0	50.0
Flammability (Oxygen Index, %)	24.0	24.0	24.0

Unless authorized in writing by the Engineer, regrind content in geof foam blocks shall not exceed 10% and shall consist of clean scrap from manufacturing plant cuttings, only.

The following reference standards shall apply in whole or in part to material supplied under this specification:

APPLICABLE STANDARDS

ASTM C 203	Test Methods for Breaking Load and Flexural Properties of Block Type Thermal Insulation
ASTM C 578	Standard Specification for Rigid Cellular Polystyrene Insulation
ASTM C390	Criteria for Sampling and Acceptance of Preformed Thermal Insulation Lots
ASTM D 1621	Test Method for Compressive Properties of Rigid Cellular Plastics
ASTM D 1622	Test Method for Apparent Density of Rigid Cellular Plastics
ASTM D 2863	Test Method for Measuring the Minimum Oxygen Concentration to Support Candle-like Combustion of Plastics (Oxygen Index)
ASTM D6817	Standard Specification for Rigid Cellular Polystyrene Geofoam
ConnDOT	Standard Specifications for Roads, Bridges and Incidental Construction, Form 816

The EPS blocks shall be produced by a manufacturer with an in-place quality control program which is monitored and certified by an accredited, independent third-party testing organization.

Submittals: A minimum of 20 business days prior to beginning work, submit two copies of certified third-party test reports to the Engineer for review, showing that at least two separately molded EPS blocks of each type (density), representative of those which will be supplied, conform to the physical properties and standards listed above. Test specimen selection and preparation shall be done in accordance with ASTM D1621 and D1622.

Submit detailed manufacturing records for the tested blocks which clearly state, in part, the percentage, type (in-plant or post-consumer), and original density of any recycled EPS material (regrind) used in the molding process.

Submit block storage plan indicating locations on the site for storing each type of EPS block to be supplied for the project. Indicate measures to secure blocks during storage for protection against displacement due to wind and flood stresses.

Submit installation drawings showing the EPS block layout plan with sufficient detail and section views to illustrate all aspects of block installation to the satisfaction of the Engineer.

Basis of Acceptance: Each EPS block shall be labeled with the manufacturer's name, product type, lot number, date of manufacture, weight and density (as measured after seasoning and trimming), and percent regrind content. Unlabeled blocks will be rejected. The Contractor shall supply detailed manufacturing records of individual blocks if requested by the Engineer. Unless approved by the Engineer, the date of delivery of EPS geofoam blocks must be after a minimum of one week and within one month of manufacture.

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Each specified grade of EPS blocks shall be received, inspected, and stockpiled separately from other grades of block in designated areas on the site in accordance with a material stockpile plan proposed by the Contractor and accepted by the Engineer and the State.

The Engineer will perform on-site density tests by weighing and measuring three blocks randomly chosen from each truckload or from each batch no larger than 2,500± cubic feet of EPS delivered to the project site. The Contractor shall provide a calibrated scale accurate to within 0.1 lbs and with sufficient capacity for this purpose. The Contractor shall submit a recent (within 30 days) calibration certificate from a certified third-part testing laboratory for the scale and any appurtenant equipment to the Engineer for approval. Blocks shall be kept clean and dry prior to weighing.

If any selected blocks do not meet the flatness or dimensional tolerances, the entire sampled truckload or batch will be rejected by the Engineer. The entire sampled truckload or batch will also be rejected if two or more of the selected blocks are below the specified minimum whole block density, any selected block is below the specified minimum test specimen dry density, or the average dry unit weight of all three blocks is below the specified minimum whole block dry density. When two of five consecutive truckloads or batches have been rejected, further deliveries will be accepted under a tightened inspection procedure.

Tightened inspection shall consist of weighing and measuring five blocks randomly chosen from each truckload or from each batch no larger than 2,500± cubic feet of EPS delivered to the project site. If any of the selected blocks do not meet the flatness or dimensional tolerances, the entire sampled truckload or batch will be rejected by the Engineer. Under tightened inspection, the entire sampled truckload or batch will also be rejected if two or more of the selected blocks are below the specified minimum whole block density or any one selected block is below the specified minimum test specimen dry density. Normal inspection shall resume after acceptance of five consecutive batches under tightened inspection procedures.

The supplier may sort and resubmit selected blocks from rejected lots under the tightened inspection procedure.

Any EPS blocks that do not meet flatness or dimensional tolerances, or have side area surface damage of 20% or more or volume damage of 1% or more will be rejected.

The State reserves the right to take additional random samples from the project site (in general 1 block per 10,000 cubic feet) for additional quality assurance testing. If testing yields unsatisfactory results the Contractor may be directed to remove and replace potentially defective EPS blocks at no additional cost to the State.

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Construction Methods:

1. Expanded Polystyrene Fill:

General

- A. Exercise care to prevent damage to the EPS during delivery, storage and construction. Protect the EPS blocks from (1) Organic solvents such as acetone, benzene, and paint thinner; (2) Petroleum based solvents such as gasoline and diesel fuel; (3) Open flames and (4) Prolonged exposure to sunlight (more than 30 days).
- B. Provide a system of temporary weights or tie downs, approved by the Engineer, to anchor the EPS blocks against wind gust or flooding potential.
- C. Do not drive or operate heavy machinery or place concentrated loads directly on the EPS blocks. EPS blocks damaged due to the Contractor's operations shall be removed and replaced at no additional cost to the State.
- D. Trim the EPS blocks in the field where necessary with a portable hot wire device supplied by the manufacturer, or a handsaw, or an alternative cutting method approved by the Engineer.
- E. Chairs or standees for support of the reinforcing steel mat within the concrete distribution slab shall have broad plastic "feet" or other means of preventing the feet from puncturing and penetrating the EPS blocks, as approved by the Engineer.

Site Preparation

- A. Where required by the Contract Drawings, the natural soil subgrade shall be excavated to the elevations given on the contract drawings. The final six inches shall be excavating using a smooth edged bucket to minimize disturbance.
- B. Prior to placement of a sand leveling layer, the natural soil subgrade shall be cleared of vegetation, any large or sharp-edged rock particles, any kind of debris and shall be leveled within a tolerance of 2 inches in 10 feet.
- C. The sand leveling layer shall consist of sand borrow conforming to Article M.01.01, No. 4 of Form 816. The required smoothness of the sand bedding layer prior to placement of the first layer of EPS blocks shall be no more than $\pm 3/8$ -inch over any ten foot distance.
- D. The sand bedding layer shall be less than 4-inches thick, unless otherwise approved by the Engineer, and shall be compacted with a plate compactor or tamper plate until level and smooth within the requirements of this specification.
- E. There shall be no debris of any kind on the sand bedding surface at the time EPS blocks are placed.
- F. There shall be no standing water or accumulated snow or ice on the sand bedding layer within the area where EPS blocks are placed at the time of block placement.
- G. EPS blocks shall not be placed on frozen subgrade. De-icing salts shall not be used except as directed by the Engineer.
- H. If required, dewater the area using pumps or other suitable methods approved by the

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Engineer. Dewatering must continue until there is sufficient fill on top of the EPS blocks to prevent them from shifting or floating. Water shall be discharged in accordance with the requirements of Section 1.10 of Form 816.

- I. The sand leveling layer shall be graded and shaped to follow the roadway profile so that the tops of installed blocks are aligned with the roadway profile in the longitudinal direction (direction parallel to the ramp baseline). The sand leveling layer shall be graded and shaped level in the transverse direction (direction perpendicular to the ramp baseline).

Block Placement

- A. Place the EPS blocks as indicated in the contract documents and according to approved shop drawings.
- B. There shall be no debris of any kind between adjacent surfaces of EPS blocks at the time adjacent EPS blocks are placed.
- C. There shall be no standing water or accumulated snow or ice on the previously placed EPS block layer within the area where subsequent EPS blocks are to be placed at the time of block placement.
- D. EPS blocks shall be placed so that all vertical and horizontal joints between blocks are tight. Avoid continuous vertical joints by laying blocks in a running bond pattern and orienting the long axis of the blocks in each successive layer perpendicular to the long axis of the blocks in the underlying layer.
- E. While placing successive layers of EPS blocks, the Contractor shall exercise care to assure that all placed blocks are supported over their entire bearing area. In the event the top constructed surface of an assembly of blocks becomes uneven or where rocking of the blocks is observed, Contractor shall notify the Engineer and propose a remedial procedure for corrective action. Such procedure shall be submitted for review and approval by the Engineer prior to resuming construction.
- F. Blocks shall be placed such that the resulting exterior vertical surfaces on the sides of the EPS Block Fill structures are vertical and planar within a tolerance of 1/8-inch between blocks. Block faces not satisfying this criterion shall be field trimmed using hot wire cutting apparatus to achieve the desired evenness within the above tolerance.
- G. Inter-block mechanical connectors shall not be used unless approved by the Engineer.
- H. The final surface of the EPS blocks shall be covered as shown on the Contract Drawings. Care shall be exercised during placement of the cover material so as not to cause any damage to the EPS blocks.

Method of Measurement:

1. Expanded Polystyrene Fill:

The quantity of Expanded Polystyrene Fill shall be the actual volume, in cubic yards, satisfactorily installed, as field measured in its final position. The sand layer shall not be measured for payment, but is included in the cost of the Expanded Polystyrene Fill.

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Basis of Payment:

This work will be paid for at the contract unit price, per cubic yard, for “Expanded Polystyrene Fill” of the specified density, which price shall include the preparation of subgrade, dewatering as required, the placement of the sand leveling layer, the furnishing, placing and trimming, as necessary, of blocks, all materials, equipment, tools and labor incidental thereto. The unit price shall also include the design of the block pattern layout, preparation of Working Drawings, on-site storage and protection of EPS materials, and material testing requested by the Engineer.

Pay Item	Pay Unit
Expanded Polystyrene Fill (1.25 pcf density)	C.Y.
Expanded Polystyrene Fill (1.5 pcf density)	C.Y.
Expanded Polystyrene Fill (2.0 pcf density)	C.Y.

ITEM #0601651A - RETAINING WALL (SITE NO. 1)

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 following is a list of the Department's current approved proprietary retaining walls, no other proprietary retaining walls will be allowed:

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 Trafford Lane
Springfield, VA 22152
(703) 913-7858

Mechanically Stabilized Earth (MSE) Walls

1. Reinforced Earth Walls

The Reinforced Earth Company
133 Park Street
North Reading, MA 01864
(978) 664-2830

2. Retained Earth

The Reinforced Earth Company
1372 Oldbridge Road, Suite 101
Woodbridge, VA 22192
(703) 499-9818

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. Themoment 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 Specificationsfor 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 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 manufacturer'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 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 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 eight 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. 1)“, 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, the work shall be paid as provided for under Article 1.09.04—Extra and Cost-Plus Work.

ITEM #0611010A – EXTERIOR INSULATION FINISH SYSTEM

Description: Work under this item shall consist of installing an Exterior Insulation Finish System (EIFS) over the exposed vertical face of the Expanded Polystyrene (EPS) embankment system. The system shall be suitable for long term exterior use as a protective surface over Expanded Polystyrene. Acceptable cover types include EIFS (Exterior Insulation Finish System) panels adhered directly to the vertical EPS face or a polyurethane/polyuria-based spray coating applied directly to the EPS surface. The cover system shall have demonstrated a long term (minimum 5 years) satisfactory service record in other comparable exterior applications under similar conditions and shall include a minimum maintenance free performance guarantee period of 5 years with a minimum of 10 years preferred. The proposed EIFS shall include a product-specific performance specification, supporting material properties, application/installation guidelines, and quality assurance program for review and acceptance.

Materials: Materials shall be those specific materials developed and selected to be part of the proprietary system and shall meet the following requirements.

Spray coatings shall have a minimum total thickness of 100 mils. The spray coating may be applied in layers, or with a topcoat, to achieve the specified thickness, texture, and appearance. Layers shall be applied in accordance with the manufacturer’s specifications.

The exposed EIFS surface shall be resistant to weathering, water, mold & mildew and freeze/thaw. The exposed surface shall have a heavy texture to help hide irregularities of the underlying EPS face and discourage graffiti. The exposed EIFS surface shall be the color of cured concrete (grey) to match adjacent concrete elements.

The exposed surface of the EIFS or spray coat shall meet the following physical requirements:

TEST	TEST METHOD	REQUIREMENT
Flame Spread (Test samples shall include base coat, fabric, finish mounted on non-combustible substrate)	ASTM E84	Flame spread of 25 or less. Smoke developed rating 450 or less.
Full Scale Wall Fire Test	ASTM E108	No significant surface flaming or propagation of vertical or lateral flames
Impact Resistance	EIMA 101.86 (Hemispherical Head Test)	High Impact Resistance 90-150 inch-lbs.
Structural Performance – Wind Load Strength (Test panels 4 feet by 4 feet)	ASTM E330	No permanent deformation, delamination or deterioration for 40 psf positive and 15 psf negative pressure.

Water Vapor	ASTM E96	Not more than 18 grains an hour per square foot.
Tensile Adhesion	EIMA 101.03	No failure in base coat or finish coat. Minimum 5 psi tensile strength before and after freeze/thaw and accelerated weathering tests.
Water Penetration	ASTM E331	No Water penetration beyond the plane of the EIFS/EPS interface after 15 minutes at 6.25 psf or 20% of the positive design wind pressure, whichever is greater.
Water Resistance	ASTM D2247	No checking, splitting, cracking or delamination after 14 days of exposure.
Abrasion Resistance	ASTM D968	500 liters of sand-slight smoothing - no cracking, checking or loss of film integrity
Accelerated Weathering	ASTM G90	2000 hours. No deterioration when viewed under 5x magnification.
Salt Spray Resistance	ASTM B117	Withstand 300 hours. No deleterious effects.
Absorption-Freeze-Thaw (Pre-weighed 100 mm x 200 mm (4" by 8") specimens; 25 mm (1") insulation, faced with finish coat cured and stored in air; tested with edges and back open.)	ASTM E2485 50 Cycles: 20 hrs. at -9 deg C ; 4-hr. thaw in water	After 50 cycles – Total weight gain of not more than 6.2 grams. No checking, splitting, cracking or delamination.

The sealant for joints and edges shall conform to the requirements of ASTM C920 and shall accommodate a minimum joint movement of 50% with 100% recovery.

Construction Methods: The EIFS shall be installed by the developer Company or Installer certified by the developer Company.

Prior to the commencement of any work the Contractor shall submit 6 sets of an information package from the Installer/Manufacturer which describes the system in detail. The package shall include, but not be limited to; Manufacturer's data sheets on each product being used with ASTM references, Material Certificates and Certified Test Reports for materials and system performance, preparation instructions, storage and handling requirements, the composition and thickness of each coat, installation methods and procedures. Also included in the package shall be; two complete sets of color chips representing Manufacturer's full range of available colors and patterns and two samples (6"x6" minimum) representing actual product, color, and patterns. The information package shall also include working drawings showing the full layout of the

vertical embankment face indicating the locations of joints, adhesives, and sealants as applicable to the system.

Prior to beginning work, verify that the EPS face is; acceptable for use in conjunction with the approved system, flat within 1/4" in a 4' radius, sound and dry with tight joints, no surface voids, projections, or other conditions that may interfere with system installation or performance.

Provide a mock-up for evaluation of surface preparation techniques and application workmanship and finished appearance. Install the complete system at a location selected by the Engineer in the field. Do not proceed with remaining work until workmanship, color, texture and appearance of the EIFS surface are approved by Engineer. Refinish the mock-up area, as required, to produce acceptable work and allow it to be seamlessly incorporated into the remainder of the EIFS.

The EIFS shall cover the entire exposed face of the EPS embankment system. Vertically, it shall extend from the bottom of the concrete moment slab at the top of the wall to a distance of at least 2 feet below finished grade at the bottom of the wall.

A vertical control joint shall be installed, extending upward from the outside corner of the toe of the Abutment 2 footing to accommodate possible differential vertical movement in the EPS blocks. Vertical control joints shall also be located below each Expansion Joint within the parapet along the top of the embankment. A continuous bead of sealant shall be applied to the top of the EIFS where it meets the overhang of the concrete moment slab.

Installation shall only proceed when environmental conditions (temperature, humidity, and ventilation) are within the limits recommended by EIFS Manufacturer for optimum results.

Upon the completion and acceptance of the EIFS installation, the Installer shall provide an executed copy of the Manufacturer's warranty against defective material and the Installer's warranty against defective workmanship.

Method of Measurement: The actual area of EIFS installed and accepted, in square yards, shall be measured for payment. The pay limit at the bottom of the EIFS face shall be a line 2 feet below finished grade. Any EIFS installed below that line shall not be measured for payment.

Basis of Payment: This work will be paid for at the contract unit price, per square yard, for "Exterior Insulation Finish System", complete in place. The price shall include all EPS surface preparation, mock-ups, furnishing and installing the system, quality control tests, and any necessary repairs and remediation work as well as all materials, equipment, tools, labor incidental thereto over the project duration and stated maintenance free performance period thereafter.

PAY ITEM

PAY UNIT

Exterior Insulation Finish System

S.Y.

Federal Wage Rates 4-12-13

General Decision Number: CT130001 04/12/2013 ^{CT1_dvb} CT1

Superseded General Decision Number: CT20120001

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	01/04/2013
1	03/01/2013
2	03/29/2013
3	04/12/2013

BRCT0001-004 12/31/2012

	Rates	Fringes
BRICKLAYER BRICKLAYERS, CEMENT MASONS, CEMENT FINISHERS, PLASTERERS AND STONE MASONS.	\$ 32.50	25.81

CARP0024-006 05/07/2012

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.....	\$ 29.65	21.00
Diver Tenders.....	\$ 29.65	21.00
Divers.....	\$ 38.11	21.00

CARP0043-004 05/07/2012

	Rates	Fringes
Carpenters: (TOLLAND COUNTY Bolton, Ellington, Somers, Tolland, Vernon)		
CARPENTERS, PILEDRIVERS.....	\$ 29.65	21.00
DIVER TENDERS.....	\$ 29.65	21.00

DIVERS.....\$ 38.11^{CT1_dvb} 21.00

 CARP0210-002 05/07/2012

Rates Fringes

Carpenters:

CARPENTERS, PILEDRIVERS.....\$ 29.65 21.00
 DIVER TENDERS.....\$ 29.65 21.00
 DIVERS.....\$ 38.11 21.00

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 06/01/2012

Rates Fringes

Electricians:

MIDDLESEX COUNTY
 (Cromwell, Middlefield,
 Middleton and Portland);
 TOLLAND COUNTY; WINDHAM

COUNTY.....\$ 37.10 22.12

 ELEC0090-002 06/01/2012

Rates Fringes

Electricians:.....\$ 36.25 22.49

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.

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

* ENGI0478-001 04/07/2013

	Rates	Fringes
Power equipment operators:		
GROUP 1.....	\$ 36.05	21.55
GROUP 2.....	\$ 35.73	21.55
GROUP 3.....	\$ 34.99	21.55
GROUP 4.....	\$ 34.60	21.55
GROUP 5.....	\$ 34.01	21.55
GROUP 6.....	\$ 33.70	21.55
GROUP 7.....	\$ 33.36	21.55
GROUP 8.....	\$ 32.96	21.55
GROUP 9.....	\$ 32.53	21.55
GROUP 10.....	\$ 30.49	21.55
GROUP 11.....	\$ 30.49	21.55
GROUP 12.....	\$ 30.43	21.55
GROUP 13.....	\$ 31.96	21.55
GROUP 14.....	\$ 29.85	21.55
GROUP 15.....	\$ 29.54	21.55
GROUP 16.....	\$ 28.71	21.55
GROUP 17.....	\$ 28.30	21.55
GROUP 18.....	\$ 27.96	21.55

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

CT1_dvb

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 (skooter).

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,

CT1_dvb

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 07/02/2012

	Rates	Fringes
Ironworkers: (Reinforcing, Structural and Precast Concrete Erection).....	\$ 33.50	27.98+a

a. PAID HOLIDAY: Labor Day provided employee has been on the payroll for the 5 consecutive work days prior to Labor Day.

* LAB00056-003 04/07/2013

	Rates	Fringes
Laborers:		
GROUP 1.....	\$ 26.40	17.15
GROUP 2.....	\$ 26.65	17.15
GROUP 3.....	\$ 26.90	17.15
GROUP 4.....	\$ 27.40	17.15
GROUP 5.....	\$ 28.15	17.15
GROUP 6.....	\$ 28.40	17.15
GROUP 7.....	\$ 16.00	17.15

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 06/01/2012

	Rates	Fringes
Painters:		
Blast and Spray.....	\$ 33.22	16.90
Brush and Roll.....	\$ 30.22	16.90
Tanks, Towers, Swing.....	\$ 32.22	16.90

PAIN0011-003 06/01/2012

	Rates	Fringes
Painters: (BRIDGE CONSTRUCTION)		
Brush, Roller, Blasting (Sand, water, etc.) Spray...	\$ 42.75	16.90

* TEAM0064-001 04/07/2013

	Rates	Fringes
Truck drivers:		
2 Axle Ready Mix.....	\$ 27.98	18.27
2 Axle.....	\$ 27.88	18.27
3 Axle Ready Mix.....	\$ 28.03	18.27
3 Axle.....	\$ 27.98	18.27
4 Axle Ready Mix.....	\$ 28.13	18.27
4 Axle.....	\$ 28.08	18.27
Heavy Duty Trailer 40 tons and over.....	\$ 28.33	18.27
Heavy Duty Trailer up to 40 tons.....	\$ 28.08	18.27
Specialized (Earth moving equipment other than conventional type on-the-road trucks and semi-trailers, including Euclids).....	\$ 28.13	18.27

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.

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)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is union or non-union.

Union Identifiers

An identifier enclosed in dotted lines beginning with characters other than "SU" denotes that the union classification and rate have found to be prevailing for that classification. Example: PLUM0198-005 07/01/2011. The first four letters, PLUM, indicate the international union and the four-digit number, 0198, that follows indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2011, following these characters is the effective date of the most current negotiated rate/collective bargaining agreement which would be July 1, 2011 in the above example.

Union prevailing wage rates will be updated to reflect any changes in the collective bargaining agreements governing the rates.

0000/9999: weighted union wage rates will be published annually each January.

Non-Union Identifiers

Classifications listed under an "SU" identifier were derived from survey data by computing average rates and are not union rates; however, the data used in computing these rates may include both union and non-union data. Example: SULA2004-007 5/13/2010. SU indicates the rates are not union majority rates, LA indicates the State of Louisiana; 2004 is the year of the survey; and 007 is an internal number used in producing the wage determination. A 1993 or later date, 5/13/2010, indicates the classifications and rates under that identifier were issued as a General Wage Determination on that date.

Survey wage rates will remain in effect and will not change until a new survey is conducted.

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.

=====
END OF GENERAL DECISION

General Decision Number: CT120002 07/06/2012 CT2

Superseded General Decision Number: CT20100003

State: Connecticut

Construction Type: Highway

County: New London County in Connecticut.

HIGHWAY CONSTRUCTION PROJECTS

Modification Number	Publication Date
0	01/06/2012
1	01/20/2012
2	04/06/2012
3	06/01/2012
4	06/15/2012
5	07/06/2012

BRCT0001-003 03/31/2012

	Rates	Fringes
BRICKLAYER		
BRICKLAYERS, CEMENT		
MASONS, CEMENT FINISHERS,		
PLASTERERS, STONE MASONS....\$	32.50	24.55

CARP0024-002 05/07/2012

	Rates	Fringes
Carpenters:		
Carpenters, Piledrivers.....\$	29.65	21.00
Diver Tenders.....\$	29.65	21.00
Divers.....\$	38.11	21.00

* ELEC0035-003 06/01/2012

	Rates	Fringes
Electricians:		
Bozrah, Colchester,		
Franklin, Griswold,		
Lebanon, Ledyard, Lisbon,		
Montville, North		
Stonington, Norwich,		
Preston, Salem, Sprague,		
Stonington and Voluntown....\$	37.10	22.12

ELEC0090-003 06/01/2010

East Lyme, Groton, New London, Old Lyme, Waterford, plus the part of Ledyard wherein the property of the Submarine Base is located

	Rates	Fringes
ELECTRICIAN.....\$	35.20	20.51

ENGI0478-002 04/01/2012

	Rates	Fringes
Power equipment operators:		
GROUP 1.....\$	35.50	20.50+a
GROUP 2.....\$	35.18	20.50+a
GROUP 3.....\$	34.44	20.50+a
GROUP 4.....\$	34.05	20.50+a
GROUP 5.....\$	33.46	20.50+a
GROUP 6.....\$	33.15	20.50+a
GROUP 7.....\$	32.81	20.50+a
GROUP 8.....\$	32.41	20.50+a
GROUP 9.....\$	31.98	20.50+a
GROUP 10.....\$	29.94	20.50+a
GROUP 11.....\$	29.94	20.50+a
GROUP 12.....\$	29.88	20.50+a
GROUP 13.....\$	31.41	20.50+a

GROUP 14.....	\$ 29.30	20.50+a
GROUP 15.....	\$ 28.99	20.50+a
GROUP 16.....	\$ 28.16	20.50+a
GROUP 17.....	\$ 27.75	20.50+a
GROUP 18.....	\$ 27.10	20.50+a

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.

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 tone; Hoisting Engineer (2 drums or over); Front End Loader (7 cubic yards or over) Work Boat 26 ft. & over.

GROUP 2: Cranes (100 ton rated capacity and 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 of 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 achine; Line Grinder; Concrete Pumps; Drills with Self Contained Power Units; Boring Machine; Post Hole Digger; Auger; Pounder; Well Digger; Milling Machine (over 24" Mandrell); Side Boom; Combination Hoe and Loader; Directional Driller.

GROUP 6: Front End Loader (3 cu. yds. up to 7 cubic 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; Hydroblaster; 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); Fork Lift; Power Chipper; Landscape Equipment (including Hydroseeder).

GROUP 10: Vibratory Hammer, Ice Machine, Diesel and 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.

* IRON0015-003 07/02/2012

	Rates	Fringes
Ironworkers: (Reinforcing & Structural).....	\$ 33.50	27.98+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 04/01/2012

	Rates	Fringes
Laborers:		
GROUP 1.....	\$ 25.80	16.45
GROUP 2.....	\$ 26.05	16.45
GROUP 3.....	\$ 26.30	16.45
GROUP 4.....	\$ 26.80	16.45
GROUP 5.....	\$ 27.55	16.45
GROUP 6.....	\$ 27.80	16.45
GROUP 7.....	\$ 16.00	16.45

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

PAIN0011-002 06/01/2012

	Rates	Fringes
Painters:		
Blast and Spray.....	\$ 33.22	16.90
Brush and Roll.....	\$ 30.22	16.90
Tanks, Towers, Swing.....	\$ 32.22	16.90

PAIN0011-003 06/01/2012

	Rates	Fringes
Painters: (BRIDGE CONSTRUCTION)		
Brush, Roller, Blasting (Sand, Water, etc.) Spray...	\$ 42.75	16.90

TEAM0064-003 04/01/2012

	Rates	Fringes
Truck drivers:		
2 Axle Ready Mix.....	\$ 27.98	17.22+a
2 Axle.....	\$ 27.88	17.22+a
3 Axle Ready Mix.....	\$ 28.03	17.22+a
3 Axle.....	\$ 27.98	17.22+a
4 Axle Ready Mix.....	\$ 28.13	17.22+a
4 Axle.....	\$ 28.08	17.22+a

Heavy Duty Trailer 40 tons and over.....	\$ 28.33	17.22+a
Heavy Duty Trailer up to 40 tons.....	\$ 28.08	17.22+a
Specialized (Earth moving equipment other than conventional type on-the- road trucks and semi- trailers, including Euclids).....	\$ 28.13	17.22+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.

=====

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)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is union or non-union.

Union Identifiers

An identifier enclosed in dotted lines beginning with characters other than "SU" denotes that the union classification and rate have found to be prevailing for that classification. Example: PLUM0198-005 07/01/2011. The first four letters, PLUM, indicate the international union and the four-digit number, 0198, that follows indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2011, following these characters is the effective date of the most current negotiated rate/collective bargaining agreement which would be July 1, 2011 in the above example.

Union prevailing wage rates will be updated to reflect any changes in the collective bargaining agreements governing the rate.

Non-Union Identifiers

Classifications listed under an "SU" identifier were derived from survey data by computing average rates and are not union rates; however, the data used in computing these rates may include both union and non-union data. Example: SULA2004-007 5/13/2010. SU indicates the rates are not union rates, LA indicates the State of Louisiana; 2004 is the year of the survey; and 007 is an internal number used in producing the wage determination. A 1993 or later date, 5/13/2010, indicates the classifications and rates under that identifier were issued as a General Wage Determination on that date.

Survey wage rates will remain in effect and will not change until a new survey is conducted.

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

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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:

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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:

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U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

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=====
END OF GENERAL DECISION

CT3_dvb

General Decision Number: CT130003 04/12/2013 CT3

Superseded General Decision Number: CT20120003

State: Connecticut

Construction Type: Highway

County: Hartford County in Connecticut.

HIGHWAY CONSTRUCTION PROJECTS

Modification Number	Publication Date
0	01/04/2013
1	03/01/2013
2	04/12/2013

BRCT0001-003 12/31/2012

	Rates	Fringes
BRICKLAYER BRICKLAYERS, CEMENT MASONS, CEMENT FINISHERS, PLASTERERS, STONE MASONS.....	\$ 32.50	25.81

CARP0024-005 05/07/2012

	Rates	Fringes
Carpenters: (Berlin, Bristol, Burlington, Canton, Marlborough, New Britain, Newington, Plainville, Southington)		
CARPENTERS; PILEDRIVERS.....	\$ 29.65	21.00
DIVER TENDERS.....	\$ 29.65	21.00
DIVERS.....	\$ 38.11	21.00

CARP0043-003 05/07/2012

	Rates	Fringes
Carpenters: (Avon, Bloomfied, East Granby, East Hartford, East Windsor, Enfield, Farmington, Glastonbury, Granby, Hartford, hartland, Manchester, Rocky Hill, Simsbury, South Windsor, Suffield, west Hartford, wethersfield, Windsor, Windsor Locks)		
CARPENTERS; PILEDRIVERS.....	\$ 29.65	21.00
DIVER TENDERS.....	\$ 29.65	21.00
DIVERS.....	\$ 38.11	21.00

ELEC0035-002 06/01/2012

	Rates	Fringes
Electricians: Entire County, excluding		

Berlin, Bristol, Hartland,
 New Britain, Newington,
 Plainville and Southington..\$ 37.10 22.12

ELEC0090-001 06/01/2010

Rates Fringes

Electricians:
 Berlin, Bristol, New
 Britain, Newington,
 Plainville, Southington.....\$ 35.20 20.51

ELEC0488-004 06/01/2011

Rates Fringes

Electricians:.....\$ 35.10 22.26

* ENGI0478-002 04/07/2013

Rates Fringes

Power equipment operators:
 GROUP 1.....\$ 36.05 21.55
 GROUP 2.....\$ 35.73 21.55
 GROUP 3.....\$ 34.99 21.55
 GROUP 4.....\$ 34.60 21.55
 GROUP 5.....\$ 34.01 21.55
 GROUP 6.....\$ 33.70 21.55
 GROUP 7.....\$ 33.36 21.55
 GROUP 8.....\$ 32.96 21.55
 GROUP 9.....\$ 32.53 21.55
 GROUP 10.....\$ 30.49 21.55
 GROUP 11.....\$ 30.49 21.55
 GROUP 12.....\$ 30.43 21.55
 GROUP 13.....\$ 31.96 21.55
 GROUP 14.....\$ 29.85 21.55
 GROUP 15.....\$ 29.54 21.55
 GROUP 16.....\$ 28.71 21.55
 GROUP 17.....\$ 28.30 21.55
 GROUP 18.....\$ 27.96 21.55

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.

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 tone; Hoisting Engineer (2 drums or over); Front End Loader (7 cubic yards or over) Work Boat 26 ft. & over.

CT3_dvb

GROUP 2: Cranes (100 ton rated capacity and 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 of 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 Grinder; Concrete Pumps; Drills with Self Contained Power Units; Boring Machine; Post Hole Digger; Auger; Pounder; Well Digger; Milling Machine (over 24" Mandrell); Side Boom; Combination Hoe and Loader; Directional Driller.

GROUP 6: Front End Loader (3 cu. yds. up to 7 cubic yards); Bulldozer (Rough grade dozer).

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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).

GROUP 10: Vibratory Hammer, Ice Machine, Diesel and 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 07/02/2012

	Rates	Fringes
Ironworkers: (Reinforcing, Structural and Precast Concrete Erection).....	\$ 33.50	27.98+a

a. PAID HOLIDAY: Labor Day provided employee has been on the payroll for the 5 consecutive work days prior to Labor Day.

* LAB00056-003 04/07/2013

	Rates	Fringes
Laborers:		
GROUP 1.....	\$ 26.40	17.15
GROUP 2.....	\$ 26.65	17.15
GROUP 3.....	\$ 26.90	17.15
GROUP 4.....	\$ 27.40	17.15
GROUP 5.....	\$ 28.15	17.15
GROUP 6.....	\$ 28.40	17.15
GROUP 7.....	\$ 16.00	17.15

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

PAIN0011-003 06/01/2012

	Rates	Fringes
Painters: (BRIDGE CONSTRUCTION) Brush, Roller, Blasting (Sand, water, etc.) Spray...	\$ 42.75	16.90

PAIN0011-004 06/01/2012

	Rates	Fringes
Painters:		
Blast and Spray.....	\$ 33.22	16.90
Brush and Roll.....	\$ 30.22	16.90
Tanks, Towers, Swing.....	\$ 32.22	16.90

* TEAM0064-005 04/07/2013

	Rates	Fringes
Truck drivers:		
2 Axle Ready Mix.....	\$ 27.98	18.27
2 Axle.....	\$ 27.88	18.27
3 Axle Ready Mix.....	\$ 28.03	18.27
3 Axle.....	\$ 27.98	18.27
4 Axle Ready Mix.....	\$ 28.13	18.27
4 Axle.....	\$ 28.08	18.27
Heavy Duty Trailer 40 tons and over.....	\$ 28.33	18.27
Heavy Duty Trailer up to 40 tons.....	\$ 28.08	18.27
Specialized (Earth moving equipment other than conventional type on-the- road trucks and semi- trailers, including Euclids).....	\$ 28.13	18.27

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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CT3_dvb

number or district council number where applicable , i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2011, following these characters is the effective date of the most current negotiated rate/collective bargaining agreement which would be July 1, 2011 in the above example.

Union prevailing wage rates will be updated to reflect any changes in the collective bargaining agreements governing the rates.

0000/9999: weighted union wage rates will be published annually each January.

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WAGE DETERMINATION APPEALS PROCESS

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U.S. Department of Labor
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washington, DC 20210

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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:

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Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

=====
END OF GENERAL DECISION

Survey wage rates will remain in effect and will not change until a new survey is conducted.

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
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=====
END OF GENERAL DECISION

General Decision Number: CT130006 01/04/2013 CT6

Superseded General Decision Number: CT20120006

State: Connecticut

Construction Type: Heavy Dredging

Counties: Connecticut Statewide.

CONNECTICUT

ALL DREDGING, EXCEPT SELF-PROPELLED HOPPER DREDGES, ON THE ATLANTIC OCEAN AND TRIBUTARY WATERS EMPTYING INTO THE ATLANTIC OCEAN.

Modification Number 0 Publication Date 01/04/2013

* ENGI0025-001 10/01/2009

STATEWIDE

	Rates	Fringes
Dredging:		
CLASS A.....	\$ 32.89	8.05+a+b
CLASS B1.....	\$ 28.49	8.05+a+b
CLASS B2.....	\$ 26.84	8.05+a+b
CLASS C1(a).....	\$ 25.55	8.05+a+b
CLASS C1.....	\$ 26.14	8.05+a+b
CLASS C2.....	\$ 25.29	8.05+a+b
CLASS D(a).....	\$ 20.43	8.05+a+b
CLASS D.....	\$ 21.09	8.05+a+b

CLASSIFICATIONS:

- CLASS A: Lead Dredgeman, Operator, Leverman, Licensed Tug Operator over 1000 HP
- CLASS B1: Derrick Operator, Spider/Spill Barge Operator, Engineer, Electrician. Chief Welder, Cheif Mate, Fill Placer, Operator II, Maintenance Engineer, Licensed Boat Operator
- CLASS B2: Licensed Boat Operator, Certified Welder.
- CLASS C1: Mate, Drag Barge Operator, Steward, Assistant Fill Placer.
- CLASS C1(a): Welder.
- CLASS C2: Boat Operator
- CLASS D: Shoreman, Deckhand, Rodman, Scowman, Cook, Messman, Porter/Janitor.
- CLASS D(a) Oiler.

PREMIUMS: Additional 20% for hazardous material work

FOOTNOTES APPLICABLE TO ABOVE CRAFTS:

- a. PAID HOLIDAYS: New Year's Day, Martin Luther King, Jr.'s Birthday, Memorial Day, Good Friday, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day and Christmas Day
- b. VACATION: Eight percent (8%) of the straight time rate, multiplied by the total hours worked.

INCENTIVE PAY: (Add to Hourly Rate)

- Operator (NCCCO License/Certification) \$0.50 Licensed Tug Operator over 1000 HP (Assigned as Master) (USCG licensed Master of Towing Vessels (MOTV) \$1.00;
- Licensed Boat Operator (Assigned as lead boat captain) USCG licensed boat operator \$0.50;
- Engineer (QMED and Tankerman endorsement or licensed engineer (USCG) \$0.50
- Oiler (QMED and Tankerman endorsement (USCG) \$0.50; All classifications (Tankerman endorsement only) USCG \$0.25;
- Deckhand or Mate (AB with Lifeboatman endorsement (USCG)

\$0.50; All classifications (lifeboatman endorsement only
(USCG) \$0.25; Welder (ABS certification) \$0.50

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
(29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification
and wage rates that have been found to be prevailing for the
cited type(s) of construction in the area covered by the wage
determination. The classifications are listed in alphabetical
order of "identifiers" that indicate whether the particular
rate is union or non-union.

Union Identifiers

An identifier enclosed in dotted lines beginning with
characters other than "SU" denotes that the union
classification and rate have found to be prevailing for that
classification. Example: PLUM0198-005 07/01/2011. The first
four letters, PLUM, indicate the international union and the
four-digit number, 0198, that follows indicates the local union
number or district council number where applicable, i.e.,
Plumbers Local 0198. The next number, 005 in the example, is
an internal number used in processing the wage determination.
The date, 07/01/2011, following these characters is the
effective date of the most current negotiated rate/collective
bargaining agreement which would be July 1, 2011 in the above
example.

Union prevailing wage rates will be updated to reflect any
changes in the collective bargaining agreements governing the
rates.

0000/9999: weighted union wage rates will be published annually
each January.

Non-Union Identifiers

Classifications listed under an "SU" identifier were derived
from survey data by computing average rates and are not union
rates; however, the data used in computing these rates may
include both union and non-union data. Example: SULA2004-007
5/13/2010. SU indicates the rates are not union majority rates,
LA indicates the State of Louisiana; 2004 is the year of the
survey; and 007 is an internal number used in producing the
wage determination. A 1993 or later date, 5/13/2010, indicates
the classifications and rates under that identifier were issued
as a General Wage Determination on that date.

Survey wage rates will remain in effect and will not change
until a new survey is conducted.

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:

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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:

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U.S. Department of Labor
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Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

General Decision Number: CT130013 04/12/2013 CT13

Superseded General Decision Number: CT20120013

State: Connecticut

Construction Type: Heavy

County: Fairfield County in Connecticut.

HEAVY CONSTRUCTION PROJECTS

Modification Number	Publication Date
0	01/04/2013
1	03/01/2013
2	04/12/2013

BRCT0001-011 12/31/2012

	Rates	Fringes
BRICKLAYER.....	\$ 32.50	25.81

BRCT0001-012 12/31/2012

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 32.50	25.81

CARP0210-005 05/07/2012

	Rates	Fringes
CARPENTER.....	\$ 29.65	21.00

ELEC0003-004 05/03/2012

Darien, Greenwich, New Canaan, Stamford and the portion of Norwalk lying west of Five Mile River

	Rates	Fringes
ELECTRICIAN.....	\$ 48.75	37.73

ELEC0488-006 06/01/2011

Bethel, Bridgeport, Brookfield, Danbury, Easton, Fairfield, Monroe, New Fairfield, Newtown, Norwalk, Redding, Ridgefield, Shelton, Sherman, Stratford, Trumbull, Weston, Westport and Wilton Townships

	Rates	Fringes
ELECTRICIAN.....	\$ 35.10	22.26

* ENGI0478-007 04/07/2013

	Rates	Fringes
POWER EQUIPMENT OPERATOR: Asphalt Paver.....	\$ 34.01	21.55

General Decision Number: CT130014 04/12/2013 CT14

Superseded General Decision Number: CT20120014

State: Connecticut

Construction Type: Heavy

County: Hartford County in Connecticut.

HEAVY CONSTRUCTION PROJECTS

Modification Number	Publication Date
0	01/04/2013
1	03/01/2013
2	04/12/2013

BRCT0001-012 12/31/2012

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 32.50	25.81

CARP0024-014 05/07/2012

Berlin, Bristol, Burlington, Canton, Marlborough, New Britain, Newington, Plainville and Southington

	Rates	Fringes
CARPENTER, Includes Form Work....	\$ 29.65	21.00

CARP0043-005 05/07/2012

Avon, Bloomfield, East Branby, East Hartford, East Windsor, Enfield, Farmington, Glastonbury, Granby, Hartford, Hartland, Manchester, Rocky Hill, Simsbury, South Windsor, Suffield, West Hartford, Wethersfield, Windsor, Windsor Locks

	Rates	Fringes
CARPENTER, Includes Form Work....	\$ 29.65	21.00

ELEC0035-006 06/01/2012

Entire County excluding Berlin, Bristol, Hartland, New Britain, Newington, Plainville and Southington Townships

	Rates	Fringes
ELECTRICIAN.....	\$ 37.10	22.12

ELEC0090-005 06/01/2012

Berlin, Bristol, New Britain, Newington, Plainville, Southington Townships

Rates	Fringes
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General Decision Number: CT130015 04/12/2013 ^{CT15_dvb} CT15

Superseded General Decision Number: CT20120015

State: Connecticut

Construction Type: Heavy

Counties: Middlesex and Tolland Counties in Connecticut.

HEAVY CONSTRUCTION PROJECTS

Modification Number	Publication Date
0	01/04/2013
1	04/12/2013

CARP0024-016 05/07/2012

MIDDLESEX COUNTY

TOLLAND COUNTY

Andover, Columbia, Coventry, Hebron, Mansfield, Union, Willington

	Rates	Fringes
CARPENTER, Includes Form Work....	\$ 29.65	21.00

CARP0043-006 05/07/2012

TOLLAND COUNTY

Bolton, Ellington, Somers, Tolland, Vernon

	Rates	Fringes
CARPENTER, Includes Form Work....	\$ 29.65	21.00

ELEC0035-004 06/01/2012

Cromwell, Middlefield, Middleton and Portland

	Rates	Fringes
ELECTRICIAN.....	\$ 37.10	22.12

ELEC0090-006 06/01/2012

Chester, Clinton, Deep River, Durham, East Haddam, East Hampton, Essex, Haddam, Killingsworth, Old Saybrook, Westbrook

	Rates	Fringes
ELECTRICIAN.....	\$ 36.25	22.49

* ENGI0478-007 04/07/2013

	Rates	Fringes
POWER EQUIPMENT OPERATOR:		
Asphalt Paver.....	\$ 34.01	21.55
Asphalt Roller.....	\$ 33.36	21.55

General Decision Number: CT130016 04/12/2013 CT16

Superseded General Decision Number: CT20120016

State: Connecticut

Construction Type: Heavy

County: New Haven County in Connecticut.

HEAVY CONSTRUCTION PROJECTS

Modification Number	Publication Date
0	01/04/2013
1	03/01/2013
2	04/12/2013

BRCT0001-011 12/31/2012

	Rates	Fringes
BRICKLAYER.....	\$ 32.50	25.81

BRCT0001-012 12/31/2012

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 32.50	25.81

CARP0024-015 05/07/2012

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.....	\$ 29.65	21.00

CARP0210-006 05/07/2012

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.....	\$ 29.65	21.00

ELEC0090-004 06/01/2012

Entire County excluding Beacon Falls, Middlebury, Milford, Naugatuck, Oxford, Prospect, Seymour, Southbury, Waterbury and Wolcott Townships

	Rates	Fringes
ELECTRICIAN.....	\$ 36.25	22.49

CT17_dvb
General Decision Number: CT130017 04/12/2013 CT17

Superseded General Decision Number: CT20120017

State: Connecticut

Construction Type: Heavy

County: New London County in Connecticut.

HEAVY CONSTRUCTION PROJECTS

Modification Number	Publication Date
0	01/04/2013
1	04/12/2013

CARP0024-007 05/07/2012

	Rates	Fringes
CARPENTER, Includes Form Work....	\$ 29.65	21.00

ELEC0035-011 06/01/2012

Bozrah, Colchester, Franklin, Griswold, Lebanon, Ledyard, Lisbon, Montville, North Stonington, Norwich, Preston, Salem, Sprague, Stonington and Voluntown

	Rates	Fringes
ELECTRICIAN.....	\$ 37.10	22.12

ELEC0090-003 06/01/2010

East Lyme, Groton, New London, Old Lyme, Waterford, plus the part of Ledyard wherein the property of the Submarine Base is located

	Rates	Fringes
ELECTRICIAN.....	\$ 35.20	20.51

* ENGI0478-008 04/07/2013

	Rates	Fringes
POWER EQUIPMENT OPERATOR:		
Asphalt Paver.....	\$ 34.01	21.55
Asphalt Roller.....	\$ 33.36	21.55
Asphalt Spreader.....	\$ 34.01	21.55
Backhoe/Excavator 2 cubic yards and over.....	\$ 35.73	21.55
Backhoe/Excavator under 2 cubic yards.....	\$ 34.99	21.55
Bulldozer (Rough Grade Dozer).....	\$ 33.70	21.55
Bulldozer Fine Grade(includes slopes, shaping, laser or gps).....	\$ 34.99	21.55
Crane handling or erecting structural steel or stone...	\$ 36.05	21.55

General Decision Number: CT130026 04/12/2013 CT26

Superseded General Decision Number: CT20120026

State: Connecticut

Construction Type: Heavy

Counties: Litchfield and Windham Counties in Connecticut.

HEAVY CONSTRUCTION PROJECTS

Modification Number	Publication Date
0	01/04/2013
1	03/01/2013
2	03/29/2013
3	04/12/2013

BRCT0001-015 12/31/2012

	Rates	Fringes
BRICKLAYER BRICKLAYERS, CEMENT MASONS, CEMENT FINISHERS, STONE MASONS.....	\$ 32.50	25.81

CARP0024-011 05/07/2012

	Rates	Fringes
CARPENTER Carpenters, Piledrivers.....	\$ 29.65	21.00
Diver Tenders.....	\$ 29.65	21.00
Divers.....	\$ 38.11	21.00
Millwrights.....	\$ 30.15	21.39

ELEC0035-008 06/01/2012

WINDHAM COUNTY

	Rates	Fringes
ELECTRICIAN.....	\$ 37.10	22.12

ELEC0042-001 09/03/2012

	Rates	Fringes
Line Construction: (Railroad Construction and Maintenance)		
Equipment Operator.....	\$ 38.62	6.5%+14.30
Groundmen.....	\$ 24.99	6.5%+9.75
Heavy Equipment Operators...	\$ 40.89	6.5%+14.60
Lineman, Cable Splicer, Technician.....	\$ 45.43	6.5%+16.20
Truck Driver.....	\$ 34.07	6.5%+13.45

ELEC0090-008 06/01/2012

LITCHFIELD COUNTY
Plymouth Township

CT26_dvb

	Rates	Fringes
ELECTRICIAN.....	\$ 36.25	22.49

 ELEC0488-011 06/01/2011

LITCHFIELD COUNTY (Excluding Plymouth Township)

	Rates	Fringes
ELECTRICIAN.....	\$ 35.10	22.26

 * ENGI0478-001 04/07/2013

	Rates	Fringes
Power equipment operators:		
GROUP 1.....	\$ 36.05	21.55
GROUP 2.....	\$ 35.73	21.55
GROUP 3.....	\$ 34.99	21.55
GROUP 4.....	\$ 34.60	21.55
GROUP 5.....	\$ 34.01	21.55
GROUP 6.....	\$ 33.70	21.55
GROUP 7.....	\$ 33.36	21.55
GROUP 8.....	\$ 32.96	21.55
GROUP 9.....	\$ 32.53	21.55
GROUP 10.....	\$ 30.49	21.55
GROUP 11.....	\$ 30.49	21.55
GROUP 12.....	\$ 30.43	21.55
GROUP 13.....	\$ 31.96	21.55
GROUP 14.....	\$ 29.85	21.55
GROUP 15.....	\$ 29.54	21.55
GROUP 16.....	\$ 28.71	21.55
GROUP 17.....	\$ 28.30	21.55
GROUP 18.....	\$ 27.96	21.55

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),

CT26_dvb

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 (skooter).

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.

IRON0015-001 07/02/2012

Rates

Fringes

Ironworkers: (Ornamental,
Reinforcing, Structural and

Precast Concrete Erection).....\$ 33.50^{CT26_dvb} 27.98+a

a. PAID HOLIDAY: Labor Day provided employee has been on the payroll for the 5 consecutive work days prior to Labor Day.

LABO0056-004 04/01/2012

	Rates	Fringes
Laborers: (TUNNEL CONSTRUCTION)		
CLEANING, CONCRETE AND CAULKING TUNNEL:		
Concrete Workers, Form Movers and Strippers.....	\$ 30.37	16.45+a
Form Erectors.....	\$ 30.68	16.45+a
ROCK SHAFT, CONCRETE, LINING OF SAME AND TUNNEL IN FREE AIR:		
Brakemen, Trackmen, Tunnel Laborers, Shaft Laborers.....	\$ 30.37	16.45+a
Laborers Topside, Cage Tenders, Bellman.....	\$ 30.26	16.45+a
Miners.....	\$ 31.28	16.45+a
SHIELD DRIVE AND LINER PLATE TUNNELS IN FREE AIR:		
Brakemen and Trackmen.....	\$ 30.37	16.45+a
Miners, Motormen, Mucking Machine Operators, Nozzlemen, Grout Men, Shaft and Tunnel, Steel and Rodmen, Shield and Erector, Arm Operator, Cable Tenders.....	\$ 31.28	16.45+a
TUNNELS, CAISSON AND CYLINDER WORK IN COMPRESSED AIR:		
Blaster.....	\$ 37.41	16.45+a
Brakemen, Trackmen, Groutman, Laborers, Outside Lock Tender, Gauge Tenders.....	\$ 37.22	16.45+a
Change House Attendants, Powder watchmen, Top on Iron Bolts.....	\$ 35.35	16.45+a
Mucking Machine Operator...	\$ 37.97	16.45+a

a. PAID HOLIDAYS: On tunnel work only: 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.

* LABO0056-013 04/07/2013

	Rates	Fringes
LABORER (HEAVY CONSTRUCTION)		
GROUP 1.....	\$ 26.40	17.15
GROUP 2.....	\$ 26.65	17.15

		CT26_dvb	
GROUP 3.....	\$ 26.90		17.15
GROUP 4.....	\$ 27.40		17.15
GROUP 5.....	\$ 28.15		17.15
GROUP 6.....	\$ 28.40		17.15
GROUP 7.....	\$ 16.00		17.15

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

PAIN0011-003 06/01/2012

	Rates	Fringes
Painters: (BRIDGE CONSTRUCTION)		
Brush, Roller, Blasting (Sand, water, etc.) Spray...	\$ 42.75	16.90

PAIN0011-018 06/01/2012

	Rates	Fringes
PAINTER		
Blast and Spray.....	\$ 33.22	16.90
Brush and Roll.....	\$ 30.22	16.90
Tanks, Towers, Swing.....	\$ 32.22	16.90

PLUM0777-002 06/01/2012

	Rates	Fringes
PLUMBER/PIPEFITTER.....	\$ 38.67	25.56

* TEAM0064-001 04/07/2013

	Rates	Fringes
Truck drivers:		
2 Axle Ready Mix.....	\$ 27.98	18.27
2 Axle.....	\$ 27.88	18.27
3 Axle Ready Mix.....	\$ 28.03	18.27
3 Axle.....	\$ 27.98	18.27
4 Axle Ready Mix.....	\$ 28.13	18.27
4 Axle.....	\$ 28.08	18.27
Heavy Duty Trailer 40 tons		

	CT26_dvb	
and over.....	\$ 28.33	18.27
Heavy Duty Trailer up to 40 tons.....	\$ 28.08	18.27
Specialized (Earth moving equipment other than conventional type on-the- road trucks and semi- trailers, including Euclids).....	\$ 28.13	18.27

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.

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)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is union or non-union.

Union Identifiers

An identifier enclosed in dotted lines beginning with characters other than "SU" denotes that the union classification and rate have found to be prevailing for that classification. Example: PLUM0198-005 07/01/2011. The first four letters, PLUM, indicate the international union and the four-digit number, 0198, that follows indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2011, following these characters is the effective date of the most current negotiated rate/collective bargaining agreement which would be July 1, 2011 in the above example.

Union prevailing wage rates will be updated to reflect any changes in the collective bargaining agreements governing the rates.

0000/9999: weighted union wage rates will be published annually each January.

Non-Union Identifiers

Classifications listed under an "SU" identifier were derived from survey data by computing average rates and are not union rates; however, the data used in computing these rates may include both union and non-union data. Example: SULA2004-007 5/13/2010. SU indicates the rates are not union majority rates, LA indicates the State of Louisiana; 2004 is the year of the survey; and 007 is an internal number used in producing the wage determination. A 1993 or later date, 5/13/2010, indicates the classifications and rates under that identifier were issued as a General Wage Determination on that date.

Survey wage rates will remain in effect and will not change until a new survey is conducted.

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.

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U.S. Department of Labor
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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
200 Constitution Avenue, N.W.
Washington, DC 20210

CT26_dvb

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:

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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

CT17_dvb

Cranes (100 ton capacity & over).....	\$ 35.73	21.55
Cranes (under 100 ton rated capacity).....	\$ 34.99	21.55
Drills with self contained power units; Directional driller.....	\$ 34.01	21.55
Earth Roller.....	\$ 30.49	21.55
Forklift.....	\$ 32.53	21.55
Front End Loader (3 cubic yards up to 7 cubic yards)...	\$ 33.70	21.55
Front End Loader (7 cubic yards or over).....	\$ 36.05	21.55
Front End Loader (under 3 cubic yards).....	\$ 32.53	21.55
Grader/Blade.....	\$ 34.99	21.55
Maintenance Engineer/Oiler..	\$ 27.65	21.55
Mechanic.....	\$ 32.96	21.55
Rubber Tire Backhoe/Excavator.....	\$ 34.99	21.55

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.

IRON0015-008 07/02/2012

	Rates	Fringes
IRONWORKER, REINFORCING AND STRUCTURAL.....	\$ 33.50	27.98+a

a. PAID HOLIDAY: Labor Day provided employee has been on the payroll for the 5 consecutive work days prior to Labor Day.

* LABO0056-007 04/07/2013

	Rates	Fringes
LABORERS		
GROUP 1.....	\$ 26.40	17.15
GROUP 2.....	\$ 26.65	17.15
GROUP 3.....	\$ 26.90	17.15
GROUP 4.....	\$ 27.40	17.15
GROUP 5.....	\$ 28.15	17.15
GROUP 6.....	\$ 28.40	17.15
GROUP 7.....	\$ 16.00	17.15

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

SUCT2002-012 12/16/2008

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 25.52	8.49
TRUCK DRIVER: 3 Axle & Semi - Truck.....	\$ 19.93	7.01

* TEAM0064-006 04/07/2013

	Rates	Fringes
TRUCK DRIVER: 4 Axle Truck.....	\$ 28.08	18.27

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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The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is union or non-union.

Union Identifiers

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Union prevailing wage rates will be updated to reflect any changes in the collective bargaining agreements governing the rates.

0000/9999: weighted union wage rates will be published annually each January.

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WAGE DETERMINATION APPEALS PROCESS

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Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
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Washington, DC 20210

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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

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 04/07/2013

	Rates	Fringes
POWER EQUIPMENT OPERATOR:		
Asphalt Paver.....	\$ 34.01	21.55
Asphalt Roller.....	\$ 33.36	21.55
Asphalt Spreader.....	\$ 34.01	21.55
Backhoe/Excavator 2 cubic yards and over.....	\$ 35.73	21.55
Backhoe/Excavator under 2 cubic yards.....	\$ 34.99	21.55
Crane handling or erecting structural steel or stone...\$	36.05	21.55
Cranes (100 ton capacity & over).....	\$ 35.73	21.55
Cranes (under 100 ton rated capacity).....	\$ 34.99	21.55
Drills with self contained power units; Directional driller.....	\$ 34.01	21.55
Earth Roller.....	\$ 30.49	21.55
Forklift.....	\$ 32.53	21.55
Front End Loader (3 cubic yards up to 7 cubic yards)..\$	33.70	21.55
Front End Loader (7 cubic yards or over).....	\$ 36.05	21.55
Front End Loader (under 3 cubic yards).....	\$ 32.53	21.55
Grader/Blade.....	\$ 34.99	21.55
Maintenance Engineer/Oiler..\$	27.65	21.55
Mechanic.....	\$ 32.96	21.55
Rubber Tire Backhoe/Excavator.....	\$ 34.99	21.55

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 .
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- 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 07/02/2012

	Rates	Fringes
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IRONWORKER, REINFORCING.....\$ 33.50^{CT16_dvb} 27.98+a

a. PAID HOLIDAY: Labor Day provided employee has been on the payroll for the 5 consecutive work days prior to Labor Day.

* LAB0056-005 04/07/2013

	Rates	Fringes
LABORERS		
GROUP 1.....	\$ 26.40	17.15
GROUP 2.....	\$ 26.65	17.15
GROUP 3.....	\$ 26.90	17.15
GROUP 4.....	\$ 27.40	17.15
GROUP 5.....	\$ 28.15	17.15
GROUP 6.....	\$ 28.40	17.15
GROUP 7.....	\$ 16.00	17.15

LABORERS CLASSIFICATIONS

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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 04/07/2013

	Rates	Fringes
TRUCK DRIVER: 4 Axle Truck.....	\$ 28.08	18.27

Hazardous waste removal work receives additional \$1.25 per
Page 3

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.

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Wage and Hour Division
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

CT16_dvb
200 Constitution Avenue, N.W.
Washington, DC 20210

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=====

END OF GENERAL DECISION

	CT15_dvb	
Asphalt Spreader.....	\$ 34.01	21.55
Backhoe/Excavator 2 cubic yards and over.....	\$ 35.73	21.55
Backhoe/Excavator under 2 cubic yards.....	\$ 34.99	21.55
Bulldozer (Rough Grade Dozer).....	\$ 33.70	21.55
Bulldozer Fine Grade(includes slopes, shaping, laser or gps).....	\$ 34.99	21.55
Crane handling or erecting structural steel or stone...\$	36.05	21.55
Cranes (100 ton capacity & over).....	\$ 35.73	21.55
Cranes (under 100 ton rated capacity).....	\$ 34.99	21.55
Drills with self contained power units; Directional driller.....	\$ 34.01	21.55
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Forklift.....	\$ 32.53	21.55
Front End Loader (3 cubic yards up to 7 cubic yards)..\$	33.70	21.55
Front End Loader (7 cubic yards or over).....	\$ 36.05	21.55
Front End Loader (under 3 cubic yards).....	\$ 32.53	21.55
Grader/Blade.....	\$ 34.99	21.55
Maintenance Engineer/Oiler..\$	27.65	21.55
Mechanic.....	\$ 32.96	21.55
Rubber Tire Backhoe/Excavator.....	\$ 34.99	21.55

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 .
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- 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.

 IRON0015-008 07/02/2012

	Rates	Fringes
IRONWORKER, REINFORCING AND STRUCTURAL.....	\$ 33.50	27.98+a

a. PAID HOLIDAY: Labor Day provided employee has been on the payroll for the 5 consecutive work days prior to Labor Day.

 * LAB00056-007 04/07/2013

	Rates	Fringes
LABORERS		
GROUP 1.....	\$ 26.40	17.15
GROUP 2.....	\$ 26.65	17.15

		CT15_dvb	
GROUP 3.....	\$ 26.90		17.15
GROUP 4.....	\$ 27.40		17.15
GROUP 5.....	\$ 28.15		17.15
GROUP 6.....	\$ 28.40		17.15
GROUP 7.....	\$ 16.00		17.15

LABORERS CLASSIFICATIONS

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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

SUCT2002-010 12/16/2008

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 25.52	8.49
TRUCK DRIVER: 3 Axle & Semi - Truck.....	\$ 19.93	7.39

* TEAM0064-006 04/07/2013

	Rates	Fringes
TRUCK DRIVER: 4 Axle Truck.....	\$ 28.08	18.27

Hazardous waste removal work receives additional \$1.25 per hour.

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END OF GENERAL DECISION

ELECTRICIAN.....	\$ 35.70	22.49
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CT14_dvb

 ELEC0488-005 06/01/2011

Hartland Township

	Rates	Fringes
ELECTRICIAN.....	\$ 35.10	22.26

 * ENGI0478-010 04/07/2013

	Rates	Fringes
POWER EQUIPMENT OPERATOR:		
Asphalt Paver.....	\$ 34.01	21.55
Asphalt Roller.....	\$ 33.36	21.55
Asphalt Spreader.....	\$ 34.01	21.55
Bulldozer (Rough Grade Dozer).....	\$ 33.70	21.55
Bulldozer Fine Grade(includes slopes, shaping, laser or gps).....	\$ 34.99	21.55
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Forklift.....	\$ 32.53	21.55
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Front End Loader (7 cubic yards or over).....	\$ 36.05	21.55
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 IRON0015-007 07/02/2012

CT14_dvb

Rates Fringes

IRONWORKER, STRUCTURAL.....\$ 33.50 27.98+a

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* LABO0056-006 04/07/2013

Rates Fringes

LABORERS

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GROUP 4: Asbestos/lead removal

GROUP 5: Blasters

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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

SUCT2002-009 12/16/2008

Rates Fringes

IRONWORKER, REINFORCING.....\$ 27.13 13.57

LABORER: Common or General.....\$ 21.03 5.30

OPERATOR: Excavator.....\$ 27.77 7.60

TRUCK DRIVER: 3 Axle & Semi - Truck.....\$ 19.93 7.39

* TEAM0064-006 04/07/2013

	Rates	Fringes
TRUCK DRIVER: 4 Axle Truck.....	\$ 28.08	18.27

Hazardous waste removal work receives additional \$1.25 per hour.

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CT14_dvb

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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

	CT13_dvb	
Asphalt Roller.....	\$ 33.36	21.55
Asphalt Spreader.....	\$ 34.01	21.55
Backhoe/Excavator 2 cubic yards and over.....	\$ 35.73	21.55
Backhoe/Excavator under 2 cubic yards.....	\$ 34.99	21.55
Bulldozer (Rough Grade Dozer).....	\$ 33.70	21.55
Bulldozer Fine Grade(includes slopes, shaping, laser or gps).....	\$ 34.99	21.55
Crane handling or erecting structural steel or stone...	\$ 36.05	21.55
Cranes (100 ton capacity & over).....	\$ 35.73	21.55
Cranes (under 100 ton rated capacity).....	\$ 34.99	21.55
Drills with self contained power units; Directional driller.....	\$ 34.01	21.55
Earth Roller.....	\$ 30.49	21.55
Forklift.....	\$ 32.53	21.55
Front End Loader (3 cubic yards up to 7 cubic yards)...	\$ 33.70	21.55
Front End Loader (7 cubic yards or over).....	\$ 36.05	21.55
Front End Loader (under 3 cubic yards).....	\$ 32.53	21.55
Grader/Blade.....	\$ 34.99	21.55
Maintenance Engineer/Oiler..	\$ 27.65	21.55
Mechanic.....	\$ 32.96	21.55
Rubber Tire Backhoe/Excavator.....	\$ 34.99	21.55

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 07/02/2012

	Rates	Fringes
IRONWORKER, REINFORCING.....	\$ 33.50	27.98+a

a. PAID HOLIDAY: Labor Day provided employee has been on the payroll for the 5 consecutive work days prior to Labor Day.

* LAB00056-005 04/07/2013

	Rates	Fringes
LABORERS		
GROUP 1.....	\$ 26.40	17.15
GROUP 2.....	\$ 26.65	17.15

		CT13_dvb	
GROUP 3.....	\$ 26.90		17.15
GROUP 4.....	\$ 27.40		17.15
GROUP 5.....	\$ 28.15		17.15
GROUP 6.....	\$ 28.40		17.15
GROUP 7.....	\$ 16.00		17.15

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

SUCT2002-008 12/16/2008

	Rates	Fringes
IRONWORKER, STRUCTURAL.....	\$ 28.62	10.84

* TEAM0064-006 04/07/2013

	Rates	Fringes
TRUCK DRIVER: 4 Axle Truck.....	\$ 28.08	18.27

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.

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)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is union or non-union.

Union Identifiers

An identifier enclosed in dotted lines beginning with characters other than "SU" denotes that the union classification and rate have found to be prevailing for that classification. Example: PLUM0198-005 07/01/2011. The first four letters, PLUM, indicate the international union and the four-digit number, 0198, that follows indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2011, following these characters is the effective date of the most current negotiated rate/collective bargaining agreement which would be July 1, 2011 in the above example.

Union prevailing wage rates will be updated to reflect any changes in the collective bargaining agreements governing the rates.

0000/9999: weighted union wage rates will be published annually each January.

Non-Union Identifiers

Classifications listed under an "SU" identifier were derived from survey data by computing average rates and are not union rates; however, the data used in computing these rates may include both union and non-union data. Example: SULA2004-007 5/13/2010. SU indicates the rates are not union majority rates, LA indicates the State of Louisiana; 2004 is the year of the survey; and 007 is an internal number used in producing the wage determination. A 1993 or later date, 5/13/2010, indicates the classifications and rates under that identifier were issued as a General Wage Determination on that date.

Survey wage rates will remain in effect and will not change until a new survey is conducted.

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

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END OF GENERAL DECISION