Bid Documents
&
Specifications

Replacement of Bridge No. 06955
Glen Street over Mattabesset River
Town of Berlin, Connecticut

State Project No. **0007-0266**

Town of Berlin Project No. **2026-12**

October 2025

Town of Berlin

Town Hall

240 Kensington Road

Berlin, Connecticut 06037

Town of Berlin

LEGAL NOTICE

Notice to Contractors:

The Town of Berlin is actively seeking bids for Project No. 0007-0266 the Replacement of Bridge No. 06955, Glen Street over Mattabesset River in Berlin, Connecticut. Sealed bids for the construction of Project No. 0007-0266 will be received by the Town of Berlin in Room 120 - Town Engineering Office, Town Hall, 240 Kensington Road, Berlin, Connecticut 06037 until 10:00 A.M., Wednesday, November 19, 2025 after which time no further bids will be accepted. NO EXCEPTIONS. The bids will be publicly opened and read in Room 120- Town Engineering Office, Town Hall, 240 Kensington Road, Berlin, Connecticut 06037.

FEDERAL PROJECT

F.A.P. # 6007 (015) CN Town of Berlin
State Project No. 0007-0266 Town Project No. 2026-12
Replacement of Bridge No. 06955
Glen Street over Mattabesset River
Contract Goal: 0% Disadvantaged Business Enterprises (DBEs)

The Town of Berlin (Municipality) hereby notifies all bidders that it will affirmatively ensure that in any contract entered into pursuant to this advertisement, Disadvantaged Business Enterprises will be afforded full opportunity to submit bids in response to this invitation and that they will not be discriminated against on the grounds of race, color, national origin, sex, sexual orientation, mental retardation or physical disability, including but not limited to blindness, in consideration for an award.

"Bid Proposal Form", "Schedule of Prices", "Bid Bond", "Non-Collusion Affidavit" and "Bidder's Prequalification" approval letter signed by the CTDOT Contracts Manager must be completed and returned with the submitted bid. Failure to properly execute and include any one of these five documents in the bid submission will result in the bid not being read and the subsequent rejection of the bid.

Plans and Specifications for the above project may be examined and/or obtained at Advanced Reprographics, 50 Corporate Avenue, Plainville, CT 06062, (860) 410-1020 and by going to the Advanced Reprographics website www.advancedrepro.net. Prospective bidders should access the "Planroom" on the website and go to the "Public Jobs" area, no log in information is necessary. Plans and specifications may be picked up at the Advanced Reprographics office. Plans and specifications may also be ordered by calling the Advanced Reprographics number listed above. Bidders are responsible for all printing costs and shipping costs, as applicable.

Form 819 Standard Specifications may be obtained via the Connecticut Department of Transportation's website: https://portal.ct.gov/dot/business/manuals?language=en_US. All Proposals must be on the form furnished by the Municipality and must be requested for the above-named project.

NOTE: Prospective bidders must have a current sworn Statement (CON-16) on file with the Connecticut Department of Transportation and be prequalified to perform Group No. 8A (Box Culverts) work. The Bidder's Prequalification approval letter signed by the CTDOT Contracts Manager shall be included as part of the bid package submitted to the Municipality.

NOTE: Any Contractor or Subcontractor engaged in surface preparation and/or coating application must be certified by the Steel Structures Painting Council.

NOTE: A Surety Company Bond, on the form furnished by the Municipality, for at least 30 percent of the amount of the bid must accompany each proposal. A certified check will not be accepted. The Municipality reserves the right to reject any and all bids.

CONTRACTORS that find discrepancies and/or errors in or between plans, specifications, quantities, and other matters must immediately notify James Horbal, Deputy Director of Public Works, Berlin Town Hall, 240 Kensington Road, Berlin, Connecticut 06037; jhorbal@berlinct.gov in writing not less than ten days before the scheduled bid opening.

Date: October 22, 2025

Bid Opening Date: November 19, 2025

Town of Berlin

BID PROPOSAL DOCUMENTS

CONTRACTOR'S FEDERAL
IDENTIFICATION NUMBER

_____

TOWN/CITY OF _____

B I D
PROPOSAL FORM

Proposal of .....
(Name)
.....
(Address)
to furnish all labor, materials, tools and appliances, required to complete the construction of the Project described elsewhere herein.

Proposals will be received at the office of .....
.....
until the hour and date set in the "Advertisement for Proposals".

To the .....
..... , Connecticut.

Sir:
In accordance with the advertisement of the City/Town of ..... ,
inviting proposals for the construction of the Project hereinafter names, and in conformity with the plans and specifications on file in the office of .....
.....

I/We certify that I am/we are the only person or persons interested in this proposal as principals, that it is made without collusion with any person, firm, or corporation; that an examination has been made of the Specifications and Contract Form, including the "Special Provisions" contained herein, also of the plans and of the Site of Work, and I/we propose to furnish all necessary machinery, equipment, tools, labor and other means of construction, and to furnish all materials specified in the manner and at the time prescribed, all in accordance with the Contract and Specifications and in conformity with Plans and the requirements of the City/Town of .....

I/We agree to accept the prices set forth herein for any additions or deductions caused by variations in quantities due to more accurate measurements, or by any changes or alterations in the plans or specifications during the progress of the work.

I/We further proposed to execute the form of contract and begin work within ten days from the day of the "Notice to Proceed" and to prosecute said work so as to complete the project and its appurtenances within the time limit stipulated; and to furnish a Performance Contract Bond in the required amount as security for the construction and completion of the Project and its appurtenances in accordance with Plans, Specifications and Contract, and a Payment Bond for the payment for all materials or labor, used or employed in the execution of the Contract.

Accompanying this proposal is (Surety Co. Bond) in the amount of .....
..... ($ .....),
as a proposal guarantee which it is understood will be forfeited in the event the Form of Contract is not executed if awarded to the undersigned.

Signed .....
(Legal name of person, firm or corporation)

Address .....
(Street, City State and Zip Code)

IMPORTANT – INSTRUCTIONS FOR SIGNATURE

1. If this BID PROPOSAL FORM is executed by an individual, it must be signed by the individual.
2. If executed by a Corporation, it must have the signature of a duly authorized officer or representative thereof, with his title, and the Corporate Seal, if any, must be affixed.
3. If executed by a partnership, the partnership name, if any, will be signed and each partner will sign as a co-partner, unless a power of attorney is attached authorizing one partner to execute the contract for all the partners.
4. If executed by an individual doing business under a trade name, it shall be signed by this individual doing a business as (as trade name)

TOWN OF BERLIN, CT
SCHEDULE OF PRICES
FOR THE CONSTRUCTION OF

STATE PROJECT NO. 0007-0266, FAP #6007 (015) CN
REPLACEMENT OF BRIDGE NO. 06955
GLEN STREET OVER MATTABESSET RIVER
IN THE TOWN OF BERLIN

DATE OF BID OPENING **November 19, 2025** TIME: **10:00 A.M.** **NO BIDS WILL BE ACCEPTED AFTER 10:00 A.M. "NO EXCEPTIONS"**

Note: The bidder shall fill in, under the column "Unit Prices Bid," the unit prices, written in words and in numbers, for which he proposes to perform the various items of work called for, and under the column headed "Amount," the amount of each of the items at the unit price bid. After the proposal is opened and read, the quantities will be extended and totaled in accordance with the written bid prices and the bid will be verified or corrected.

Item Number	Items	Unit	Approximate Quantities	Unit Prices Bid		Amount (Figures)
				Figures	Writing	
0101000 A	ENVIRONMENTAL HEALTH AND SAFETY	L.S.	1			
0101002 A	CONFINED SPACE HEALTH AND SAFETY	L.S.	1			
0201001	CLEARING AND GRUBBING	L.S.	1			
0202000	EARTH EXCAVATION	C.Y.	1030			
202094 A	EARTH EXCAVATION IN WETLANDS	C.Y.	230			
0202120	ROCK EXCAVATION (NO EXPLOSIVES)	C.Y.	110			
0202200	CHANNEL EXCAVATION - EARTH	C.Y.	240			
0202216 A	EXCAVATION AND REUSE OF EXISTING CHANNEL BOTTOM MATERIAL	C.Y.	130			
0202218 A	WASHING-IN SUPPLEMENTAL STREAMBED MATERIAL	EST.	1	$10,000.00	Ten Thousand Dollars and Zero Cents	$10,000.00
0202222 A	BOULDER PLACEMENT IN RIVER	L.S.	1			
0202250	CHANNEL EXCAVATION - ROCK	C.Y.	30			
0202315 A	DISPOSAL OF CONTROLLED MATERIALS	TON	2940			
0202452 A	TEST PIT	EA.	5			
0202529	CUT BITUMINOUS CONCRETE PAVEMENT	L.F.	60			
0202911 A	CONDITION SURVEY (SITE NO. 1)	L.S.	1			
0203202	STRUCTURE EXCAVATION-EARTH (EXCLUDING COFFERDAM AND DEWATERING)	C.Y.	930			
0203304	STRUCTURE EXCAVATION-ROCK (EXCLUDING COFFERDAM AND DEWATERING)	C.Y.	120			
0204001A	COFFERDAM AND DEWATERING	L.F.	359			
0204139	COFFERDAM MATERIAL LEFT IN PLACE	L.F.	34			
0204151 A	HANDLING WATER	L.S.	1			
0207000	BORROW	C.Y.	240			
0208000	FREE-DRAINING MATERIAL	C.Y.	230			
0209001	FORMATION OF SUBGRADE	S.Y.	1560			
0211000	ANTI-TRACKING PAD	S.Y.	170			
0213100	GRANULAR FILL	C.Y.	270			
0216000	PERVIOUS STRUCTURE BACKFILL	C.Y.	200			
0219001	SEDIMENTATION CONTROL SYSTEM	L.F.	1020			
0219011 A	SEDIMENT CONTROL SYSTEM AT CATCH BASIN	EA.	8			
0304002	PROCESSED AGGREGATE BASE	C.Y.	440			
0305000	PROCESSED AGGREGATE	TON	60			
0406170	HMA S1	TON	360			
0406171	HMA S0.5	TON	180			
0406238	NON-TRACKING ASPHALT TACK COAT	GAL	240			
0406999 A	ASPHALT ADJUSTMENT COST	EST.	1	$2,000.00	Two Thousand Dollars and Zero Cents	$2,000.00
0503866 A	REMOVAL OF EXISTING CULVERT (SITE NO. 1)	L.S.	1			
0505001	STRAIGHT ENDWALL	C.Y.	10			
0514718 A	PRECAST CONCRETE WALLS	C.Y.	60			
0586001.10	TYPE 'C' CATCH BASIN - 0'-10' DEEP	EA.	1			

Kindly insert here the total amount of your Bid $ _ _ _ _ _ _ _ _ _ _ _ _ _
It is understood that the unit prices shall govern in case of discrepancy between the unit-prices and this amount.
This bid includes addenda no.: __ __ __ __ __

TOWN OF BERLIN, CT
SCHEDULE OF PRICES
FOR THE CONSTRUCTION OF

STATE PROJECT NO. 0007-0266, FAP #6007 (015) CN
REPLACEMENT OF BRIDGE NO. 06955
GLEN STREET OVER MATTABESSET RIVER
IN THE TOWN OF BERLIN

DATE OF BID OPENING **November 19, 2025** TIME: **10:00 A.M.** **NO BIDS WILL BE ACCEPTED AFTER 10:00 A.M. "NO EXCEPTIONS"**

Note: The bidder shall fill in, under the column "Unit Prices Bid," the unit prices, written in words and in numbers, for which he proposes to perform the various items of work called for, and under the column headed "Amount," the amount of each of the items at the unit price bid. After the proposal is opened and read, the quantities will be extended and totaled in accordance with the written bid prices and the bid will be verified or corrected.

Item Number	Items	Unit	Approximate Quantities	Unit Prices Bid		Amount (Figures)
				Figures	Writing	
0586005.10	TYPE 'C' CATCH BASIN DOUBLE GRATE TYPE 2 -0' -10' DEEP	EA.	6			
0586500.10	MANHOLE - 0' - 10' DEEP	EA.	1			
0601062	FOOTING CONCRETE	C.Y.	130			
0601064	ABUTMENT AND WALL CONCRETE	C.Y.	120			
0601087 A	ARCHITECTURAL FORM LINERS	S.Y.	168			
0601123	APPROACH SLAB CONCRETE	C.Y.	75			
0601131 A	20' X 8' PRECAST CONCRETE BOX CULVERT	L.F.	34			
0601142 A	20' X 5'-6" PRECAST CONCRETE BOX CULVERT	L.F.	34			
0601502	1/2" PREFORMED EXPANSION JOINT FILLER FOR BRIDGES	S.F.	171			
0601504	1" PREFORMED EXPANSION JOINT FILLER FOR BRIDGES	S.F.	202			
0602030	DEFORMED STEEL BARS - GALVANIZED	LBS	11,664			
0603474 A	METALLIZING STRUCTURAL STEEL (SITE NO. 1)	L.S.	1			
0603591 A	STRUCTURAL STEEL - MISCELLANEOUS	CWT.	30			
0686000.15	15" R.C. PIPE -0' - 10' DEEP	L.F.	230			
0686000.24	24" R.C. PIPE -0' - 10' DEEP	L.F.	40			
0703010	STANDARD RIPRAP	C.Y.	210			
0703011	INTERMEDIATE RIPRAP	C.Y.	200			
0703012	MODIFIED RIPRAP	C.Y.	10			
0703031 A	ROCK WEIR	EA.	4			
0707009 A	MEMBRANE WATERPROOFING (COLD LIQUID ELASTOMERIC)	S.Y.	258			
0755010.01	GEOTEXTILE (SEPERATION - CLASS 2)	S.Y.	220			
0815093	BITUMINOUS CONCRETE PARK CURB	L.F.	700			
822100.01	TEMPORARY TRAFFIC BARRIER	L.F.	40			
0904947 A	METAL BRIDGE APPROACH RAIL	L.F.	130			
0904990 A	METAL BRIDGE RAIL	L.F.	172			
0910023	R-B TERMINAL SECTION	EA.	4			
0910300	METAL BEAM RAIL (R-B MASH)	L.F.	360			
0910302	METAL BEAM RAIL (R-B MASH QUARTER POST SPACING)	L.F.	70			
0912503	REMOVE METAL BEAM RAIL	L.F.	690			
0913000	REMOVE CHAIN LINK FENCE	L.F.	110			
0913952 A	PROTECTIVE FENCE (5' HIGH)	L.F.	36			
0922501	BITUMINOUS CONCRETE DRIVEWAY	S.Y.	70			
0944000	FURNISHING AND PLACING TOPSOIL	S.Y.	870			
0949022	SALIX DISCOLOR, PUSSY WILLOW 24" - 36" HT. CONT.	EA.	15			
0949090	QUERCUS BICOLOR, SWAMP WHITE OAK, 2 1/2" - 3" CAL. B.B.	EA.	15			
0949198	SALIX NIGRA, BLACK WILLOW, 18" - 24" HT. B.B.	EA.	15			
0949325	LINDERA BENZOIN COMMON SPICEBUSH 2'- 3' HT. B.B.	EA.	45			
0949560	VIBURNUM PRUNIFOLIUM BLACKHAW VIBURNUM 3'- 4' HT. B.B.	EA.	15			

Kindly insert here the total amount of your Bid $ _ _ _ _ _ _ _ _ _ _ _ _ _
It is understood that the unit prices shall govern in case of discrepancy between the unit-prices and this amount.
This bid includes addenda no.: __ __ __ __ __

TOWN OF BERLIN, CT
SCHEDULE OF PRICES
FOR THE CONSTRUCTION OF

STATE PROJECT NO. 0007-0266, FAP #6007 (015) CN
REPLACEMENT OF BRIDGE NO. 06955
GLEN STREET OVER MATTABESSET RIVER
IN THE TOWN OF BERLIN

DATE OF
BID OPENING **November 19, 2025** TIME: **10:00 A.M.** **NO BIDS WILL BE ACCEPTED AFTER 10:00 A.M. "NO EXCEPTIONS"**

Note: The bidder shall fill in, under the column "Unit Prices Bid," the unit prices, written in words and in numbers, for which he proposes to perform the various items of work called for, and under the column headed "Amount," the amount of each of the items at the unit price bid. After the proposal is opened and read, the quantities will be extended and totaled in accordance with the written bid prices and the bid will be verified or corrected.

Item Number	Items	Unit	Approximate Quantities	Unit Prices Bid		Amount (Figures)
				Figures	Writing	
0949889	ASCLEPIAS INCARNATA, SWAMP MILKWEED, #1 CONTAINER	EA.	24			
0949912	BETULA NIGRA RIVER BIRCH 6'-8' HT. B.B.	EA.	15			
0950019 A	TURF ESTABLISHMENT - LAWN	S.Y.	870			
0950040 A	CONSERVATION SEEDING FOR SLOPES	S.Y.	870			
0952051 A	CONTROL AND REMOVAL OF INVASIVE VEGETATION	S.Y.	1630			
0969060 A	CONSTRUCTION FIELD OFFICE, SMALL	MO	8			
0970006	TRAFFICPERSON (MUNICIPAL POLICE OFFICER)	EST.	1	$10,000.00	Ten Thousand Dollars and Zero Cents	$10,000.00
0971001 A	MAINTENANCE AND PROTECTION OF TRAFFIC	L.S.	1			
0974001	REMOVAL OF EXISTING MASONRY	C.Y.	130			
0975004	MOBILIZATION AND PROJECT CLOSEOUT	L.S.	1			
0976002	BARRICADE WARNING LIGHTS - HIGH INTENSITY	DAY	1947			
0979003	CONSTRUCTION BARRICADE TYPE III	EA.	4			
0980020	CONSTRUCTION SURVEYING	L.S.	1			
1131002	REMOTE CONTROL CHANGEABLE MESSAGE SIGN	DAY	112			
1208937 A	SIGN FACE - SHEET ALUMINUM (TYPE XI RETROREFLECTIVE SHEETING)	S.F.	9			
1210110	4" WHITE TYPE I EPOXY RESIN PAVEMENT MARKINGS	L.F.	1385			
1210111	4" YELLOW TYPE I EPOXY RESIN PAVEMENT MARKINGS	L.F.	990			
1220027	CONSTRUCTION SIGNS	S.F.	285			
1301017 A	FURNISHING AND INSTALLING TEMPORARY WATER MAIN CROSSING	L.S.	1			
1301069 A	INSULATED 8" DUCTILE IRON WATER MAIN	L.F.	100			
1301082 A	8" DUCTILE IRON PIPE (WATER MAIN)	L.F.	70			
1304066 A	REMOVE WATER MAIN	L.F.	140			
1401246 A	16" DUCTILE IRON PIPE (SANITARY SEWER)	L.F.	160			
1401662 A	SANITARY MANHOLE (4' DIA.) 0' TO 10' DEEP	EA.	2			
1403501	RESET MANHOLE (SANITARY SEWER)	EA.	1			
1507000.01 A	PROTECTION AND SUPPORT OF EXISTING UTILTIES (SITE NO. 1)	L.S.	1			

Kindly insert here the total amount of your Bid $ _ _ _ _ _ _ _ _ _ _ _ _
It is understood that the unit prices shall govern in case of discrepancy between the unit-prices and this amount.
This bid includes addenda no.: __ __ __ __ __

TOWN OF BERLIN, CT
SCHEDULE OF PRICES
FOR THE CONSTRUCTION OF

STATE PROJECT NO. 0007-0266, FAP #6007 (015) CN
REPLACEMENT OF BRIDGE NO. 06955
GLEN STREET OVER MATTABESSET RIVER
IN THE TOWN OF BERLIN

DATE OF
BID OPENING **November 19, 2025** TIME: **10:00 A.M.** **NO BIDS WILL BE ACCEPTED AFTER 10:00 A.M. "NO EXCEPTIONS"**

Note: The bidder shall fill in, under the column "Unit Prices Bid," the unit prices, written in words and in numbers, for which he proposes to perform the various items of work called for, and under the column headed "Amount," the amount of each of the items at the unit price bid. After the proposal is opened and read, the quantities will be extended and totaled in accordance with the written bid prices and the bid will be verified or corrected.

Kindly insert here the total amount of your Bid $ _ _ _ _ _ _ _ _ _ _ _ _ _
It is understood that the unit prices shall govern in case of discrepancy
between the unit-prices and this amount.
This bid includes addenda no.: __ __ __ __ __

CONTRACT TIME AND LIQUIDATED DAMAGES

1. For this contract, an assessment per day for liquidated damages, at a rate of One Thousand Two Hundred Dollars ($1,200) per day shall be applied to each calendar day the work runs in excess of the Two Hundred Fourty Four (244) allowed calendar days for the contract.

Note: PRIME CONTRACTOR'S REQUIREMENTS:

A. Proposal Guaranty (Bid Bond): Except when otherwise specified, no proposal will be considered unless accompanied by a proposal guaranty in the form of a bond furnished by a surety company, satisfactory to the Engineer, in an amount equal to at least 30% of the amount of the bid, or unless the bidder has on file in the Town, an annual bid bond in the proper amount.

   The surety must be a corporate surety licensed to sign surety bonds in the State of Connecticut.

B. The low bidder is required to submit to the Town, both a Certificate of Insurance and a Workers' Compensation Certificate on or before the signing of the Contract.

C. Statement of Bidder's Qualifications: Each bidder is required to submit to the Town a recent sworn statement of the bidder's qualifications the form furnished by the Town for this purpose.

D. Contracts will not be awarded until the above requirements have been submitted and approved.

E. Please be aware that the Town, prior to the awarding of the Contract, may require further financial and other information from any applicant who becomes the low bidder for that Contract. on or before the signing of the Contract.

NAME OF PRINCIPAL

(Contractor, Second Party, Etc.):

TOWN/CITY OF _____

_____
Project or Contract Identification

STANDARD BID BOND

KNOW ALL PERSONS BY THESE PRESENTS:

That We, ...,
of .....,
hereinafter called the "Principal", as Principal, and .....
.....
a corporation organized and existing under the laws of the State of .....,
and duly authorized to transact a surety business in the State of Connecticut, hereinafter called the "Surety," as Surety, are held and firmly bound unto the Town/City of ....., as "Obligee," in the penal sum of **THIRTY PERCENT (30%) OF THE AMOUNT OF THE ATTACHED BID** in lawful money of the United States of America, for the payment of which, well and truly to be made to the Obligee, we bind ourselves, our heirs, successors, and assigns, jointly and severally, firmly by these presents.

Signed, sealed and delivered this …… day of……., 20…….…….

THE CONDITION OF THIS OBLIGATION is such, that whereas the said Principal has herewith submitted, his bid dated ..... 20___, for ……
.....
.....,
.....,
.....,
.....,
.....,

NOW, THEREFORE, if the Principal shall not withdraw its bid within sixty (60) days after the opening of the same, and if said bid shall be accepted and the contract awarded to said Principal, and the Principal shall, when required by the ....., or his authorized agent, execute and agreement in writing for the work bid upon, and deliver such surety bonds as shall be acceptable to said ..... for the performance of the work according to said written agreement and for the protection of person supplying labor or materials in the prosecution of said work, and shall in all other respects perform the agreement created by the acceptance of said bid, then this obligation shall be void; otherwise the Principal and Surety hereto agree to pay unto the Obligee the difference between the amount of the bid of said Principal, submitted herewith, and the amount for which the Obligee may contract with another party to perform the work covered by the said bid of the Principal.

The Surety executing this Instrument hereby agrees that its obligation shall not be impaired by any extension(s) of the time for acceptance of the bid that the Principal may grant to the Obligee, notice of which extension(s) the Surety being hereby waived; provided that such waiver of notice shall apply only with respect to extensions aggregating not more than sixty (60) calendar days in addition to the period originally allowed for acceptance of the bid.

IN TESTIMONY WHEREOF, the said ..... .
.....
have caused these presents to be signed by their duly authorized representatives and their name and corporate seal to be hereunto affixed, the day and year first written.

SURETY

_____
Print Name

_____
Agent's Signature and date
enclose valid Power of Attorney

PRINCIPAL

_____
Print Name

_____
Signature and date of Authorized Representative

NON COLLUSION AFFIDAVIT

This Affidavit must be completed, notarized and attached to your Bid Proposal. Failure to do so will result in the rejection of your Bid. A separate Affidavit must be submitted by each principal of a Joint Venture.

State Project No. _____
F.A. # _____
City/Town _____
Description of Project _____
_____

I, _____ , acting in behalf of _____
(Name of Party Signing Affidavit)

_____ of which
(person, firm, association, corporation or organization)
I am the _____ , submitting a bid for the above project, certify
(Title of Person)
and affirm in accordance with Section 112(c) of Title 23, U.S. Code Highways that the _____
_____
(person, firm, association, corporation or organization)
has neither directly or indirectly entered into any agreements, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with such bid. False statements made herein may be the subject of criminal prosecution.

_____
Name of Corporation or Firm

_____
Signature and Title of Official
Making the Affidavit

Subscribed and sworn to before me, this _____ day of _____20__.

_____
Notary Public/Commissioner of the Superior Court
My Commission Expires_____

CERTIFICATE OF CORPORATION

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

_____
(Corporate Seal) Signature of Person Certifying

Department _____
_____
_____Compliance Officer
Date_____

☐ APPROVED

☐ DISAPPROVED

☐ PENDING INVESTIGATION

☐ INVESTIGATION REQUESTED

STATE OF CONNECTICUT LABOR DEPARTMENT

EMPLOYER REPORT OF PERMANENT COMPLIANCE STAFFING

The following report is submitted as part consideration of the proposed contract dated_____ between the undersigned and the City/Town of _____

Name of Contracting Firm

_____

Address (No. and Street) (City) (State)

Type of Report

Prime Contractor

Subcontractor

EMPLOYEE INFORMATION

Total Employed	White	Black	Spanish Surname	Other (specify)

Does your firm have a collective bargaining agreement or other Contract or understanding with a labor organization or employment agency for the recruitment of labor?

YES ☐

If yes, list the name and address of the agency or organization.

Name Address (No. and Street, City, State)

NO ☐

If no, indicate the usual methods of recruitment.

☐ Connecticut State Employment Service
☐ Private Employment Agency
☐ Newspaper Advertisement
☐ Walk-in
☐ Other (specify)

The signer certifies that its practices and policies, including but not limited to matters concerning personnel, training, apprenticeship, membership, grievance and representation, and upgrading, do not discriminate on grounds of race, color, religious creed, age, sex, or national origin, or ancestry of any individual, and that the signer agrees it will affirmatively cooperate in the implementation of the policy and provisions of Executive Order Number Three, and consent and agreement is made that recruitment, employment and the terms and conditions of employment under the contract shall be in accordance with the purposes and provisions of Executive Order Number Three.

☐ Yes ☐ No Is firm in minority ownership? (51% of assets in control of minorities)

I certify that the above is correct to the best of my knowledge.

Employer_____ Date
Business Name

By _____
Signature Title

STATEMENT OF BIDDER'S QUALIFICATIONS

CITY/TOWN_____ PROJECT NO._____

All bidders are required to file this form, properly completed, WITH THEIR PROPOSAL. Failure of a bidder to answer any question or provide required information may be grounds for the awarding authority to disqualify and reject their bid. If a question or request for information does not pertain to your organization in any way, use the symbol "NA" (Not Applicable). Use additional 8½" x 11" sheets with your letterhead as necessary.

1. Indicate exactly the name by which this organization is known:

   Name _____

2. How many years has this organization been in business under its present business name?

   Years_____

3. How many years has this organization been in business as a General Contractor?

   Years_____

4. If this organization has not always been a General Contractor, list the trade(s) that your firm customarily performed prior to the time that you became a General Contractor:

   1._____

   2._____

   3._____

5. Indicate all other names by which this organization has been known and the length of time known by each name:

   1._____

   2._____

   3._____

6. This firm is a _____Corporation _____Partnership _____Sole Proprietorship

   _____Joint Venture _____Other.

7. Attach resumes of all supervisory personnel, such as Principals, Project Managers, and Superintendents, who will be directly involved with projects on which you are now a bidder. Indicate the number of years of construction experience and number of years of which they were in a supervisory capacity.

8. List all sub-trades which your firm customarily performs with own employees.

   1. _____

   2. _____

   3. _____

9. Trade References: Names, addresses and telephone numbers of several firms with whom your organization has regular business dealings.

(Attach separate sheet)

10. All Construction Projects Your Organization has in Process:

TITLE & LOCATION	CONTR. AMOUNT	PRIME* OR SUB-CONTRACTOR	OWNER	DESIGNER	START DATE	FINISH DATE	ANY COMPLAINT AS TO QUALITY OR MANAGEMENT	NAME & PHONE OF OWNER'S REP	NAME & PHONE OF DESIGNER REP

Please attach a separate sheet explaining any negative entry in these three columns

Notes: Indicate "Prime" only if your organization performed 51% or greater of the total contract amount.

11. All Construction Projects Your Organization has completed in the past five years or the twenty projects most recently completed:

TITLE & LOCATION	CONTR. AMOUNT	PRIME* OR SUB-CONTRACTOR	OWNER	DESIGNER	START DATE	FINISH DATE	ANY COMPLAINT AS TO QUALITY OR MANAGEMENT	NAME & PHONE OF OWNER'S REP	NAME & PHONE OF DESIGNER REP

Please attach a separate sheet explaining any negative entry in these three columns

Notes: Indicate "Prime" only if your organization performed 51% or greater of the total contract amount.

12. Has your organization ever failed, or has any officer or partner of your organization ever been an officer or partner of another organization that failed to complete a contract in any jurisdiction. If so, indicate the circumstances leading to the project failure.

_____

_____

_____

13. List all legal or administrative proceedings currently pending or concluded adversely within the last five years which relate to procurement or performance of any public or private construction contracts in any jurisdiction.

1. _____ Attached 2. _____ N/A

Dated at _____

this _____ day of _____ 20_____.

Name of Organization:

_____

Signature _____(Seal)

(Print Name) _____

Title _____

Notary Statement:

Mr./Mrs./Ms. _____ being duly

sworn deposes and says that he/she is the _____
(Position or Title)

of _____, and that the answers to the foregoing questions and all statements therein
(Firm Name)

contained are true and correct.

Subscribed and sworn before me this _____ day of _____

_____ 20_____.

Notary Public: _____

My Commission Expires _____ 20 _____

DESIGN STATEMENT

FEDERAL PROJECT NO: 6007(015) CN

STATE PROJECT NO: 0007-0266

TOWN PROJECT NO: 2026-12

TOWN: Berlin

BRIDGE NO: 06955

LOCATION: Glen Street over Mattabesset River

DISTRICT NO: 1

PROPOSED WORK: Replacement of Bridge No. 06955

FINAL MAINTENANCE RESPONSIBILITY: To be maintained by the Town of Berlin

PUBLIC UTILITIES:
Comcast of Connecticut, Inc. – Cable TV
Southern New England Telephone Company dba Frontier Communications of CT - Communications
Connecticut Light and Power Company dba Eversource Energy – Electric Distribution
Connecticut Natural Gas Corporation – Natural Gas Service
Kensington Fire District (KFD) – Water and Sewer Services

SALVAGE: None

PERMITS AND AGREEMENTS:
Town of Berlin Inland Wetlands and Watercourses Permit - Approved
Flood Management Certification (FMC-MOU) – Pending Approval
US Army Corps of Engineers Self-Verification – Pending Approval

MAINTENANCE AND PROTECTION OF TRAFFIC:
Glen Street will be closed during construction and vehicular traffic will be detoured via West Lane, Route 71A (Chamberlain Highway), High Road and Percival Avenue.

SPECIAL CONSIDERATIONS: Tree clearing restricted to November 1 to April 14

CALENDAR DAYS: 244

WINTER SHUTDOWN: Yes

DBE % (Construction): N/A

PLAN DISTRIBUTION: Advanced Reprographics

Consultant Design Engineer: **Jacobs Engineering, Inc.**
Consultant Liaison Engineer: **CHA Consulting, Inc.**

Federal Project No. 6007(015) CN
State Project No. 0007-0266
Municipality: Berlin

INDEX TO SPECIAL PROVISIONS

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

Page No.	Item
5	Contract Time and Liquidated Damages
6	Notice to Contractor – Federal Wage Determinations (Davis Bacon Act)
7	Notice to Contractor – Award and Execution of Contract
7	Notice to Contractor – Standard Drawings
7	Notice to Contractor – Contract Duration
7	Notice to Contractor – Prequalification Requirement
10	Notice to Contractor – Bid Rejection
10	Notice to Contractor – Potential Modified Award Schedule
10	Notice to Contractor – Pre-Award Documents/Non-Responsive Bidder
10	Notice to Contractor – Insurance
11	Notice to Contractor – Supervision and Inspection
11	Notice to Contractor – Municipal Project/Field Office
11	Notice to Contractor – Approvals and Inspection by the State
11	Notice to Contractor – Verification of Existing Conditions
12	Notice to Contractor – Verification of Plan Dimensions and Field Measurements
12	Notice to Contractor – Utility Coordination
13	Notice to Contractor – Protection of Existing Utilities
14	Notice to Contractor – Utility Generated Schedule
18	Notice to Contractor - Specific Access to Utilities
18	Notice to Contractor – Utility Specifications
18	Notice to Contractor – Rights of Way Restrictions
19	Notice to Contractor – Time of Year Restrictions
20	Notice to Contractor – Permits/Permit Applications
20	Notice to Contractor – Flood Contingency Plan Requirements
21	Notice to Contractor – No Storage or Staging of Materials within Floodplain without Review and Written Approval
21	Notice to Contractor – Transmittal of Approved Drawings
21	Notice to Contractor – Minimum Compressive Strength
22	Notice to Contractor – Electronic Engineering Data (EED)
22	Notice to Contractor – Mandated Use of AASHTOWare Project Construction Management Software (Construction)
23	Notice to Contractor – CDMS Submittals
23	Notice to Contractor – Membrane Waterproofing (Cold Liquid Elastomeric)
24	Notice to Contractor – Hazardous Materials Investigations
25	Notice to Contractor – Environmental Investigations
26	Notice to Contractor – Metallized Color Sample
26	Notice to Contractor – Tree Clearing Mobilization and Time of Year Restrictions

Federal Project No. 6007(015) CN
State Project No. 0007-0266
Municipality: Berlin

Page No.	Item
28	Section 1.01 – Definitions of Terms and Permissible Abbreviations
29	Section 1.02 – Proposal Requirements and Conditions
31	Section 1.03 – Award and Execution of Contract
32	Section 1.04 – Scope of Work
33	Section 1.05 – Control of the Work
37	Section 1.06 – Control of Materials
38	Section 1.07 – Legal Relations and Responsibilities
41	Section 1.08 – Prosecution and Progress
44	Section 1.09 – Measurement and Payment
46	Section 1.10 – Environmental Compliance
48	Section 1.11 – Claims
49	Division II – Construction Details
50	Division III – Materials Section
51	Code of Ethics
59	D.B.E. Subcontractors and Material Suppliers or Manufacturers
73	0101000A – Environmental Health and Safety
82	0101002A – Confined Space Health and Safety
87	0202094A – Earth Excavation in Wetlands
88	0202216A – Excavation and Reuse of Existing Channel Bottom Material
91	0202218A – Washing-In Supplemental Streambed Channel Material
95	0202222A – Boulder Placement in River
97	0202315A – Disposal of Controlled Materials
105	0202452A – Test Pit
107	0202911A – Condition Survey (Site No. 1)
113	0204111A – Cofferdam and Dewatering
114	0204151A – Handling Water
116	0219011A – Sediment Control System at Catch Basin
118	0406999A – Asphalt Adjustment Cost
121	0503866A – Removal of Existing Culvert (Site No. 1)
123	0514718A – Precast Concrete Walls
128	0601087A – Architectural Form Liners
133	0601131A – 20’ x 8’ Precast Concrete Box Culvert
133	0601142A - 20’ x 5’-6” Precast Concrete Box Culvert
138	0603474A – Metalizing Structural Steel (Site No. 1)
145	0603591A – Structural Steel – Miscellaneous
146	0703031A – Rock Weir
148	0707009A – Membrane Waterproofing (Cold Liquid Elastomeric)
157	0904947A – Metal Bridge Approach Rail
157	0904990A – Metal Bridge Rail
161	0913952A – Protective Fence (5’ High)
164	0950019A – Turf Establishment – Lawn
166	0950040A – Conservation Seeding for Slopes
169	0952051A – Control and Removal of Invasive Vegetation
175	0969060A – Construction Field Office, Small
183	0971001A – Maintenance and Protection of Traffic
208	1208937A – Sign Face – Sheet Aluminum (Type XI Retroreflective Sheeting)
210	1301017A – Furnishing and Installing Water Main Crossing

213	1301069A – Insulated 8” Ductile Iron Water Main
213	1301082A – 8” Ductile Iron Pipe (Water Main)
226	1304066A – Remove Water Main
229	1401246A – 16” Ductile Iron Pipe (Sanitary Sewer)
230	1401662A – Sanitary Manhole (4’ Dia.) 0’ to 10’ Deep
231	1507000.01A – Protection and Support of Existing Utilities (Site No. 1)

Supplemental Specifications to Standard Specifications Form 819
Permits and/or Permit Applications and Required Provisions
Task 710 Environmental Report
Geotechnical Report
Construction Contracts – Required Contract Provisions (FHWA Funded Contracts)

DATE: October 22, 2025
FEDERAL PROJECT NO. 6007(015) CN
STATE PROJECT NO. 0007-0266

REPLACEMENT OF BRIDGE NO. 06955
GLEN STREET OVER MATTABESSET RIVER
TOWN OF BERLIN

The State of Connecticut, Department of Transportation, Standard Specifications for Roads, Bridges, Facilities and Incidental Construction, Form 819, 2024, as revised by the Supplemental Specifications dated January 2025 (otherwise referred to collectively as "CTDOT Form 819") is hereby made part of this contract, as modified by the Special Provisions contained herein. CTDOT Form 819 with Supplemental Specifications dated January 2025 is available at the following DOT website link:

https://portal.ct.gov/dot/-/media/dot/aec/form_819-with-january-2025.pdf?rev=3bd1e067b9cf4007b799bd8ffd29a41d.

The current edition of the State of Connecticut Department of Transportation's "Construction Contract Bidding and Award Manual" ("Manual") is hereby made part of this contract. If the provisions of this Manual conflict with provisions of other Department documents (not including statutes or regulations), the provisions of the Manual will govern. The Manual is available at the following DOT website link:

https://portal.ct.gov/dot/-/media/dot/contracts/constructioncontractbidding-awardmanual.pdf?rev=148e4dfd33234f0da93b0315c20e8ad8

The Special Provisions relate in particular to the Replacement of Bridge No. 06955 in the Town of Berlin.

CONTRACT TIME AND LIQUIDATED DAMAGES

Two-Hundred and Forty-Four (244) calendar days will be allowed for completion of all work as described in the contract documents for Federal Project No. 6007(015), State Project No. 0007-0266. For this contract, an assessment per day for liquidated damages at a rate of One Thousand Two Hundred Dollars ($1,200) per calendar day shall be applied to each calendar day the work runs in excess of the Two-Hundred and Forty-Four (244) calendar days.

NOTICE TO CONTRACTOR - FEDERAL WAGE DETERMINATIONS (DAVIS BACON ACT)

The following Federal Wage Determinations are applicable to this Federal-Aid contract and are hereby incorporated by reference. During the bid advertisement period, it is the bidder's responsibility to obtain the latest Federal wage rates from the US Department of Labor website, as may be revised 10 days prior to bid opening. Any revisions posted 10 days prior to the bid opening shall be the wage determinations assigned to this contract.

Check Applicable WD# (DOT Use Only)	WD#	Construction Type	Counties
	CT1	Highway	Fairfield, Litchfield, Middlesex, New Haven, Tolland, Windham
	CT2	Highway	New London
X	CT3	Highway	Hartford
	CT5	Heavy Dredging (Hopper Dredging)	Fairfield, Middlesex, New Haven, New London
	CT6	Heavy Dredging	Statewide
	CT13	Heavy	Fairfield
X	CT14	Heavy	Hartford
	CT15	Heavy	Middlesex, Tolland
	CT16	Heavy	New Haven
	CT17	Heavy	New London
	CT26	Heavy	Litchfield, Windham
	CT18	Building	Litchfield
	CT19	Building	Windham
	CT20	Building	Fairfield
	CT21	Building	Hartford
	CT22	Building	Middlesex
	CT23	Building	New Haven
	CT24	Building	New London
	CT25	Building	Tolland
	CT4	Residential	Litchfield, Windham
	CT7	Residential	Fairfield
	CT8	Residential	Hartford
	CT9	Residential	Middlesex
	CT10	Residential	New Haven
	CT11	Residential	New London
	CT12	Residential	Tolland

The Federal wage rates (Davis-Bacon Act) applicable to this Contract shall be the Federal wage rates that are current on the US Department of Labor website (SAM.gov | Wage Determinations) as may be revised 10 days prior to bid opening. The Department will no longer physically include

revised Federal wage rates in the bid documents or as part of addenda documents. These applicable Federal wage rates will be incorporated in the final contract document executed by both parties.

If a conflict exists between the Federal and State wage rates, the higher rate shall govern.

To obtain the latest Federal wage rates, go to the US Department of Labor website (link above). Under Davis-Bacon Act, choose "Selecting DBA WDs" and follow the instruction to search the latest wage rates for the State, County and Construction Type.

NOTICE TO CONTRACTOR – AWARD AND EXECUTION OF CONTRACT

Bridge No. 06955 is anticipated to have a Notice to Proceed to Construction of April 1, 2026. Upon Award of the construction contract, the Contractor shall proceed with the development of shop drawings and working drawings, procurement of materials, utility coordination and all other submittals required to complete the work, in accordance with Article 1.03.09 Contractor Readiness and the contract documents. However, in no case shall the Contractor begin with on-site work until all permit approvals have been acquired and a Notice to Proceed to Construction has been granted.

NOTICE TO CONTRACTOR – STANDARD DRAWINGS

Bidders are hereby notified that the standard drawings (if any) referenced on the plans for this Project are available on the State of Connecticut Department of Transportation's website.

NOTICE TO CONTRACTOR – CONTRACT DURATION

The Contractor is hereby notified that this is not to be considered an ordinary project by any means and that due to the inconvenience to the traveling public that it causes, extra manpower, equipment, and work shifts may be required to complete the work in accordance with the specified contract time.

NOTICE TO CONTRACTOR – PREQUALIFICATION REQUIREMENT

Prospective bidders must have a current sworn Statement (CON-16) on file with the Connecticut Department of Transportation and be prequalified to perform Group No. 8A (Box Culvert) work. **The Contractor's current CTDOT "Prequalification Approval letter stating the Firm's approved work classifications and signed by the CTDOT Contracts Manager" (see sample below) shall be included as part of the bid package submitted to the Municipality.**

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

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

Phone: 860-594-3128

October 26, 2018

ABC Construction
Mr. Doe
123 Main St.
Santa Clara, Connecticut 06000

Re: Contractor's Prequalification
Statement (CON-16)

Sample

Dear Mr. Doe;

This is to notify you that your Firm's subject statement has been found to be satisfactory by this Department.

It will expire August 31, 2021

Your Maximum Capacity Rating is $60,000,000.00

Your Construction Classification is:

Group No. 1 Earthwork: Site Work
Group No. 2 Earthwork: Utility Work
Group No. 3 Concrete Restoration
Group No. 4 Specialized Concrete Repair
Group No. 5 Paving and Associated Construction
Group No. 6 Road Construction and Rehabilitation: Local Roads & Streets and non-freeways.
Group No. 7 Road Construction and Rehabilitation: Limited Access Highways, freeways, and major reconstruction of non-freeway state routes.
Group No. 8 Minor Bridges
Group No. 9 Intermediate Bridges
Group No. 10 Major Bridges
Group No. 11 Bridge Painting
Group No. 12 Marine repairs, Marine Construction or Salvaging
Group No. 13 Traffic Control & Illumination/Electrical
Group No. 14 Signing Delineation

Group No. 15 Intelligent Transportation Systems(ITS)
Group No. 16 Pavement Markings
Group No. 17 Incidental Construction: Fencing
Group No. 18 Incidental Construction: Guide Rail
Group No. 19 Incidental Construction: Bridge Joints & Membranes
Group No. 20 Incidental Construction: Temporary Traffic Control
Group No. 21 Railroad Construction
Group No. 22 Railroad Construction Electrical
Group No. 23 Landscaping/Environmental Improvements
Group No. 24 Environmental
Group No. 25A Vertical Construction
Group No. 25B Vertical Construction Includes Group 25 A
Group No. 25C Vertical Construction Includes Groups 25 A & B

A Proposal Request (Part "C") can be obtained via this link:
http://www.ct.gov/dot/lib/dot/documents/dcontractdev/partc.xls

No bidders that have mutual financial interests, or common ownership, directors, officers or principal shareholders (i.e., shareholders holding at least five percent [5%] of either the common or the preferred shares of the company's stock) may bid for the same Department contract. Such proscribed bidders shall include, but not be limited to, affiliates and subsidiaries of each other.

If any non-bidding party has an ownership interest in more than one bidder that is bidding for a given contract, either directly or through the former's ownership interests in another company, no matter how high up or far removed in a vertical or horizontal chain of ownership that party might be from the bidders, the bids of those bidders shall not be accepted.

In addition, with respect to any given Department contract that is advertised for bidding, no bidder owned by, or in the chain of ownership of, a company which provides surety bonds may bid against a bidder for whom a bond has been or will be provided by that company for the given contract bidding. All bids proscribed by the terms of this paragraph will be rejected by the Commissioner.

Please be aware that the Department, prior to the awarding of any contract, may require further financial and other information from any applicant who becomes the low bidder for that contract.

If you have any questions, please do not hesitate to contact me.

Sincerely,

Gregory D. Straka

Gregory D. Straka
Contracts Manager
Division of Contracts Administration

Sample

NOTICE TO CONTRACTOR - BID REJECTION

Bidders are hereby notified that until the award of the Contract, the Municipality reserves the right to reject any or all bids for any reason whatsoever, and to waive technicalities as deemed to be in the best interests of the Municipality.

NOTICE TO CONTRACTOR – POTENTIAL MODIFIED AWARD SCHEDULE

The Contractor is hereby given notice that this Contract may not be awarded until all State and Federal funding approvals have been received. If funding approvals are not received, this Contract award may be delayed or the Contract may be withdrawn and re-advertised at the discretion of the Municipality, in consultation with CTDOT, per section XIII of the Construction Contract Bidding and Award Manual. Any delay to the Contract award or failure to award shall not be the basis for any claims by any bidder.

NOTICE TO CONTRACTOR – PRE-AWARD DOCUMENTS/ NON-RESPONSIVE BIDDER

Bidders are hereby notified that all required pre-award submittals, properly executed on the forms provided by the Municipality shall be furnished to the Municipality NO LATER THAN FOURTEEN (14) calendar days after the bid opening. These documents include but are not limited to: Contractor's Proposed Progress Chart; Anticipated Source of Materials; Statement of Bidders Qualifications.

The Municipality may reject a bid as non-responsive if the bidder does not make all required pre-award submittals within the herein stipulated calendar days.

NOTICE TO CONTRACTOR – INSURANCE

The insurance industry's standard ACORD Certificate of Liability Insurance will replace the CON-32 Form. All required levels ($) of insurance coverage governed by the Connecticut DOT's Standard Specifications (Form 818) Section 1.03.07, or as amended by special provision, shall be identified on the ACORD Form.

The ACORD Form shall identify the Municipality, with its official address, as the certificate holder. The project description together with the State Project number shall be included under "Description of Operations". The Municipality and the State shall be named as additional insured, as required in Section 1.03.07.

NOTICE TO CONTRACTOR – SUPERVISION AND INSPECTION

This project will be supervised and inspected by the Municipality or its authorized agent. The "Notice to Proceed", stipulating the date on which the Contractor will begin the construction and from which date the contract time will be charged, will be issued by the Municipality.

NOTICE TO CONTRACTOR – MUNICIPAL PROJECT/FIELD OFFICE

Bidders are hereby notified that this is a Municipal project. As such, the construction field office requires the approval of the Municipality's electrical inspector instead of the State's CTDOT electrical inspector. Additionally, the installation of a data communication circuit between the field office and the CTDOT Data Communications Center in Newington will not be required.

NOTICE TO CONTRACTOR – APPROVALS AND INSPECTION BY THE STATE

The Contractor is hereby notified that pursuant to an Agreement between the State and the Municipality for the construction, inspection and maintenance of this project, the Municipality is required to obtain written approvals from the State of Connecticut Department of Transportation for the following contract administration matters prior to the Municipality giving its approval to the Contractor:

- Award and Execution of Contract
- Changes in Scope of Work including Extra Work and Value Engineering Proposals
- Extensions of Contract Time

The Contractor is also hereby notified that pursuant to the aforementioned Agreement, the Department will provide certain services, including, but not limited to, materials testing, periodic construction inspection, and liaison services with other governmental agencies to ensure satisfactory adherence to state and federal requirements for this project.

NOTICE TO CONTRACTOR – VERIFICATION OF EXISTING CONDITIONS

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

NOTICE TO CONTRACTOR – VERIFICATION OF PLAN DIMENSIONS AND FIELD MEASUREMENTS

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

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

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

NOTICE TO CONTRACTOR – UTILITY COORDINATION

- Existing utility poles, owned by Eversource Energy – Electric Distribution, are present at the project site. The utility conduits associated with these poles include, but are not limited to, Eversource Energy, Frontier and Comcast of Connecticut, Inc. There is no anticipated impact to overhead utilities as part of this bridge replacement as none of the utilities cross the bridge. However, the Contractor is cautioned about the presence of utility poles within the fill slope limits at the southwest approach embankment.
- An existing 8” diameter steel water main owned by the Kensington Fire District (KFD) which runs beneath the southbound lane of the roadway will be temporarily relocated and supported during construction and permanently relocated on the eastern (downstream) fascia and supported by the bridge. The work associated with temporary and permanent relocation of the water main will be done by the Contractor.
- An existing 16” diameter steel sanitary sewer main owned by the Kensington Fire District (KFD) is attached to the eastern (downstream) fascia of the existing bridge. The sewer main will be temporarily supported during construction at its existing location. A new 16” diameter steel sanitary sewer main will be permanently supported by the new bridge along the eastern fascia adjacent to and outside of the watermain. New manholes will be installed in the roadway on either side of the bridge to tie into the new sewer main. The work associated with temporary and permanent relocation of the sewer main will be done by the Contractor.
- The existing 6” diameter gas main owned by Connecticut Natural Gas (CNG) will be cut and capped after May 1, 2026, by CNG to accomplish the bridge construction. The abandoned gas main within the project limits shall be removed by the contractor.

Subsequent to the installation of the proposed culverts, a new 6" diameter steel gas main will be installed by CNG within the roadway ballast along the roadway centerline. The new gas main will be required to be in service no later than September 30, 2026. The design and construction work associated with the gas main replacement will be performed by CNG (see FIO Subset 6). It is the Contractor responsibility to coordinate the time and workspace for CNG to perform the installation of their proposed 6" diameter gas main over the new culvert so as to be operational no later than September 30, 2026.

- Other utilities may be present that were not identified in the field. The Contractor is responsible for identification and coordination with each utility.
- Call Before You Dig must be contacted by the Contractor prior to performing any work.

NOTICE TO CONTRACTOR - PROTECTION OF EXISTING UTILITIES

Existing utilities shall be maintained during construction except as specifically stated herein and/or noted on the plans and as coordinated with the utilities. The Contractor shall verify the location of underground, structure mounted and overhead utilities. Construction work within the vicinity of utilities shall be performed in accordance with current safety regulations.

The Contractor shall notify "Call Before You Dig", telephone 1-800-922-4455 for the location of public utility, in accordance with Sections 16-345 through 16-349 of the Public Utility Regulatory Agency (PURA).

Representatives of the various utility companies shall be provided access to the work, by the Contractor.

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

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

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

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

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

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

In case of an emergency contact the following personnel from each utility company.

Connecticut Natural Gas
Jonathan Gould – Gas Engineering
JGould@ctgcorp.com
76 Meadow Street, East Hartford, CT 06108
Cell: 1-860-727-3044

Kensington Fire District
Dan McKeon – Superintendent
dmckeon@snet.net
947 Farmington Ave, Berlin, CT 06037
860-828-1782

Town of Berlin
Mike Ahern – Town Engineer/Public Works Director
mahern@berlinct.gov
240 Kensington Road Berlin, CT 06037
860-828-7014

Eversource – Electric Distribution
Jonathan Makowski – Project Engineer
Jonathan.makowski@eversource.com
203-271-4856

NOTICE TO CONTRACTOR – UTILITY GENERATED SCHEDULE

The attached project specific utility work schedule was provided to the Connecticut Department of Transportation (Department) by the utility companies regarding their identified work on this project.

The utility scheduling information is provided to assist the Contractor in scheduling its activities. However, the Department does not ensure its accuracy and Section 1.05.06 of the Standard Specifications still is in force.

The utility scheduling information shall be incorporated into the Contractor's pre-award schedule in accordance with the Department's Bidding and Award Manual and Section 1.05.08 of the Contract.

After award, the Contractor shall conduct a utility coordination meeting or meetings to obtain contemporaneous scheduling information from the utilities prior to submitting its baseline schedule to the Department in accordance with Section (***1.05.08 – Schedules and Reports***) of the Contract.

The Contractor shall incorporate the contemporaneous utility scheduling information into its baseline schedule submittal. The baseline schedule shall include Contractor predecessor and successor activities to the utility work in such detail as acceptable to the Engineer.

UTILITY WORK SCHEDULE Rev 08 02 2016

CTDOT Project Number: 0007-0266	Town: BERLIN
Project Description: Replacement of Bridge No. 06955, Glen St over the Mattabesset River	
CTDOT Utilities Engineer: CHA - Dionys Quezada	
Phone: 860-595-3390	Email: dquezada@chasolutions.com

Utility Company: Connecticut Natural Gas	
Prepared By: Jonathan Gould	Date Prepared: 6/23/2025
Phone: 860-727-3044	Email: jgould@ctgcorp.com

Scope of Work

The following is a description of all utility work planned to be completed in conjunction with the CTDOT project. The narrative describes all work to be carried out by the utility or its contractor, including temporary and permanent work required by the project as well as any additional utility infrastructure work the utility intends on performing within the project limits during the construction of the project.

The work that is planned by Connecticut Natural Gas in conjunction with project 0007-0266 comprises of: Abandon in place the existing gas main across Bridge No. 06955. Install, tie-in, & energize new gas main across new bridge. The duration is only for the purpose of scheduling and subject to change with the sequence and operation mode of the contractor. Total duration to complete gas related work is estimated as 16 days.

Special Considerations and Constraints

The following describes the limiting factors that must be planned for in the scheduling and performance of the utility work. For example, restrictions on cut-overs, outages, limitations on customer service interruptions (e.g. nights, weekends, holidays), seasonal and environmental shutdown periods, long lead material procurements, etc..

The existing 6" steel gas main across Bridge No. 06955 cannot be abandoned until after May 1st. The new 6" steel gas main across the new bridge must be installed and activated no later than September 30th.

UTILITY WORK SCHEDULE Rev 3/2015

CTDOT Project Number: 0007-0266

Utility Company: Connecticut Natural Gas

Prepared By: Jonathan Gould Total Working Days: 16

Schedule

The following schedule identifies each major activity of utility work in sequential order to be performed by the utility or its contractor. The location of each activity of work is identified by the baseline stationing on the CTDOT plans. All activities identify the predecessor activity which must be completed before a utility work activity may progress. The duration provided is the number of working days required to complete the utility work activity based on historical information and production rates.

Location (Station to Station)	Description of Utility Work Activity	Predecessor Activity	Duration (working days)
	Actions to be completed by CNG		
A	Cut, cap and abandon (in place) existing 6" steel gas main across bridge. Only after May 1st.		5
B	Install new 6" steel gas main across new bridge.		8
C	Tie-in and energize new gas main - New gas main must be activated by September 30th.		3

NOTICE TO CONTRACTOR – SPECIFIC ACCESS TO UTILITIES

The Contractor is required to allow utility companies and representatives of the utility companies access to construction site including work platforms and/or scaffolding to inspect and perform maintenance and replacement to the utility's facilities. The Contractor's Schedule of operations and construction phasing plans shall show the anticipated locations and durations where the utility companies and representatives of the utility companies will have access to the temporary construction work platforms/scaffolding.

The Contractor must coordinate with each utility owner. The Contractor shall give notice to utility companies a minimum of 30 days prior to when inspection and maintenance can occur.

Any costs incurred due to allowing specific access to utilities will be included in the general cost of work.

NOTICE TO CONTRACTOR - UTILITY SPECIFICATIONS

The contractor is hereby notified that all utility specifications contained elsewhere herein shall be made a part of this contract, and that the contractor shall be bound to comply with all requirements of such specifications. The requirements and conditions set forth in the subject specifications shall be binding on the contractor just as any other specification would be.

The contractor is hereby notified that standard specifications published by the Metropolitan District Commission (MDC) of Hartford, Connecticut shall be included as part of this project. MDC Standard Specifications can be found at the following link:

https://themdc.org/wp-content/uploads/2024/05/MDC-Horizontal-Project-Manual-SBE-February-2024.pdf

NOTICE TO CONTRACTOR – RIGHTS OF WAY RESTRICTIONS

The Contractor is hereby advised that at the time of advertising for bids not all the property may be acquired by the State, certain residences and/or business establishments had not been vacated, and asbestos removal by others from buildings to be disposed of had not been completed. A complete listing of the affected properties and the anticipated dates that they will become available is hereinafter provided. The Contractor is further advised that limitations, as enumerated herein below, are imposed which may interfere with the physical construction of the project. Following are statements which will set forth the restrictions on the right of entrance to property and conditions governing construction of the project.

1) The Contractor shall not occupy properties that are unacquired, perform any work thereon, or inhibit access thereto until the properties have been acquired and right of possession has been

obtained. If the Contractor is allowed to proceed with the physical construction of the project, no action will be taken that will result in unnecessary inconvenience such as the discontinuance of utilities, the prevention of ingress and egress to the property, or will result in disproportionate injury or any action coercive in nature to occupants of residences (businesses, farms, or non-profit organization) who have not yet moved from the right-of-way.

2) It should be anticipated that each of the properties listed herein may be considered to have an effect upon construction operations.

3) The Contractor shall be aware that extensions of time will be granted, if necessary, for delays in construction operations caused by continued occupancy of residences, properties being unacquired or asbestos abatement concluding beyond the estimated time period.

4) The following is a complete listing of properties which have not been acquired, vacated and asbestos abated as of October 22, 2025, with the anticipated dates such properties will be acquired and/or vacated and abated.

Serial No.	Type	Name	Location
0007-0266-001	Partial Take/ Easement	Vincent P. Ringrose, Jr. et al (Title Estimate by March 31, 2026)	Between Stations 2+50 and 5+90 Left of Baseline
0007-0266-002	Partial Take/ Easement	Honeyman Builders, LLC (Title Estimate by March 31, 2026)	Between Stations 5+90 and 7+00 Left of Baseline

NOTICE TO CONTRACTOR – TIME OF YEAR RESTRICTIONS

The Contractor is hereby notified of the following time of year restrictions:

In-Water Work

The Contractor is hereby alerted to the time of year restrictions imposed by the Environmental Permits contained elsewhere in this contract. Unconfined in-water work will only be allowed between June 1st and September 30th.

Confinement of a work area by cofferdam techniques using sandbag placement, sheet pile installation (vibratory method only), portadam, or similar confinement devices is allowed any time of the year. The removal of such confinement devices is allowed any time of the year. Once a work area has been confined, in-water work within the confined area is allowed any time of the year. The confinement technique used shall completely isolate and protect the confined area from

all flowing water. The use of silt boom/curtain or similar techniques as a means for confinement is prohibited.

Sheet piling installation using impact, or any method involving excavation within the streambed is only allowed during the period June 1 through September 30, unless specifically restricted otherwise in a permit condition.

Tree Trimming and Clearing

The Contractor is hereby alerted to the time of year restrictions imposed by the Environmental Permits contained elsewhere in this contract. Cutting and trimming of trees with a Diameter at Breast Height (DBH) of 3" or greater is prohibited from April 15 to October 31, inclusive.

NOTICE TO CONTRACTOR – PERMITS/PERMIT APPLICATIONS

The Contractor is hereby notified that all permit approvals and permit applications (contained elsewhere in these specifications) shall be made a part of this Contract, and that the Contractor shall be bound to comply with all requirements of such permits and permit applications as though the Contractor were the permittee. If at the time the permit is received its contents differ from that which is outlined in the application, the permit shall govern.

Should the permit be received after the receipt of bids and the permit requirements significantly change the character of the work, adjustment will be made to the contract in accordance with the appropriate articles in Section 1.04. The requirements and conditions set forth in the permit and permit application shall be binding on the Contractor just as any other specification would be. In the case of a conflict between a provision of the environmental permit or permit application and another provision in the contract documents, the former shall govern.

NOTICE TO CONTRACTOR – FLOOD CONTINGENCY PLAN REQUIREMENTS

The Contractor is hereby made aware that under "Article 1.10.03 – Water Pollution Control" of Form 819, as amended by the Supplemental Specifications, the Contractor is required to submit a contingency plan for flood events, in writing, to the Municipality or its authorized agent for approval. The contingency plan must be submitted by the Contractor and approved by the Municipality or its authorized agent prior to the commencement of any Project construction in the waterway.

NOTICE TO CONTRACTOR – NO STORAGE OR STAGING OF MATERIALS WITHIN FLOODPLAIN WITHOUT REVIEW AND WRITTEN APPROVAL

The Contractor is hereby made aware that, in conformance with the environmental permits and with the Best Management Practices outlined under Section 1.10 – Environmental Compliance of Form 819, as amended by the Supplemental Specifications, the contractor shall not store or stage any materials or equipment within the Floodplain without prior review and written approval by the Engineer.

The Contractor shall submit a written plan detailing the materials and/or equipment to be stored or staged from within the floodplain, including such details as the presence of any materials that are potentially hazardous, buoyant, flammable, explosive, soluble, expansive, radioactive, or which could in the event of a flood be injurious to human, animal, or plant life. No materials or equipment shall be stored or staged from within the Floodplain until the plan described above has been reviewed and approved by the Engineer. Any temporary equipment or material stored in the 100-year floodplain must be able to be removed a minimum of 12 hours prior to a flood event from the site in case of a flood warning.

NOTICE TO CONTRACTOR – TRANSMITTAL OF APPROVED DRAWINGS

The Contractor is hereby notified that, upon receipt of any and all approved shop drawings, and working drawings for permanent construction, the Contractor shall transmit one set of such approved drawings and product data to the Municipality, the oversight Construction District and Ms. Eliana V. Carlson, Connecticut Department of Transportation, Office of Research and Materials, Division of Materials Testing, 280 West Street, Rocky Hill, Connecticut 06067, telephone (860) 258-0312.

NOTICE TO CONTRACTOR – MINIMUM COMPRESSIVE STRENGTH

The concrete strength or allowable design stress specified in the General Notes is for design purposes only. The minimum compressive strength of concrete in constructed components shall comply with the requirements of Section 6.01 Concrete for Structures.

NOTICE TO CONTRACTOR – ELECTRONIC ENGINEERING DATA (EED)

The EED is an assembly of engineering data files that were used to produce the Contract plans.

Electronic Engineering Data (EED) is provided for information purposes only. In case of conflict between the EED and the Contract plans and specifications, the contract plans and specifications shall govern. The EED has been reviewed by the Department for quality control purposes, but it is the Contractor's responsibility to build the Project per the contract plans and specifications.

The EED is being provided to the Engineer for GPS/RTS inspection. The Contractor may use the EED to assist in bidding, layout, and Automated Machine Control/Guidance.

The EED includes geospatially correct 2D CAD files and may include horizontal and vertical alignment data files, 3D surface model files (break-line features and triangles) and a preference file. The data is being provided in one of the MicroStation versions, consisting of native and converted formats:

MICROSTATION CONNECT (OPENROADS)

- Native Format
  - Bentley CONNECT MicroStation CAD files (dgn – contains CAD graphics, OpenRoads alignments and terrain models)
- Converted Format (for use in GPS/RTS Site equipment)
  - AutoCAD CAD files (dxf)
  - Alignment files (xml – exported from CONNECT MicroStation CAD file)
  - Surface Models (xml – exported from CONNECT MicroStation CAD file)

For a complete list of EED files, see the EED file manifest (PDF) located in the EED_0007-0266.zip file which is posted with the contract PS&E's on the State Contracting portal. The EED zip file can also be found in the project COMPASS page in the *100_Contract_Plans (PDF)* folder.

NOTICE TO CONTRACTOR – MANDATED USE OF AASHTOWARE PROJECT CONSTRUCTION MANAGEMENT SOFTWARE (CONSTRUCTION)

The Contractor shall use *AASHTOWare Project*® software as outlined in the specifications noted below. This will require that the Contractor and all subcontractor(s) designate and dedicate staff within 10 days after the execution of the Contract or approval to sublet as appropriate. It will also require the Contractor and all subcontractors to provide internet access, computing devices suitable for this work, training, and other related work as outlined in the specifications noted below.

All costs for these requirements shall be included in the general cost of the work.

The following special provisions are pertinent to, and detail the requirements for, this work:

SECTION 1.05 - CONTROL OF THE WORK

Article 1.05.12 – Payrolls
This Article outlines the requirements for submission of payrolls.

Article 1.05.25 –Use of AASHTOWare Project® Software
This Article outlines the overall requirements for the use of the AASHTOWare Project® Software.

SECTION 1.08 – PROSECUTION AND PROGRESS

Article 1.08.01—Transfer of Work or Contract
This Article outlines the requirements for subcontractor payment and payment verifications.

NOTICE TO CONTRACTOR – CDMS SUBMITTALS

Upon execution of the Contract, the Contractor acknowledges and agrees that contractual submittals for this Project shall be submitted and handled through the Department's Construction Document Management System (CDMS). The CDMS that the Department is currently using is COMPASS.

Contractor submittals including Shop Drawings, Working Drawings, Product Data, RFIs, and RFCs shall be generated and delivered by the Contractor in accordance with the Department's Contractor's User Manual. The administering District office will inform the Contractor of other deliverables required to be similarly submitted.

Access credentials will be provided free of charge to the Contractor.

The Department shall not be held responsible for delays, lack of processing or responses to submittals that do not follow the specified guidelines in the Contractor's User Manual.

NOTICE TO CONTRACTOR – MEMBRANE WATERPROOFING (COLD LIQUID ELASTOMERIC)

The Contractor is hereby notified that changes have been made to the referenced Membrane Waterproofing special provision and that the Contractor shall comply with all requirements of such specification.

The major changes include the following:

- Addition of language to clarify the definition of a Manufacturer is as described in Article 1.06.01 of the Standard Specifications,

- Allowance for single pass application of 80 mil membrane thickness by hand application provided a demonstration on a test section shows the Applicator is able to meet the specified tolerances and is acceptable to the Engineer. Similar test section allowance requirements will apply to mechanical applicator systems,

- Addition of requirements for taking measurements of ambient air and dew point temperatures and that no primer or membrane applications shall be allowed if the difference between these two temperatures is 5º F or less, and

- Addition of language clarifying that all components shall be from the same batch as identified on original packaging (barrels, etc), or be discarded – no mixing of like material from different batches shall be allowed.

NOTICE TO CONTRACTOR – HAZARDOUS MATERIALS INVESTIGATIONS

A limited hazardous materials site investigation has been conducted for the replacement of Bridge No. 06955, Glen Street over Mattabesset River, Berlin, Connecticut. The scope of inspection was limited to the representative components projected for impact.

No detectable levels of lead were identified on the painted water main pipe running adjacent to Bridge No. 06697, therefore any paint waste generated would be non-hazardous, non-RCRA lead waste. No other painted surfaces were identified at Bridge No. 06955.

All suspect materials sampled at the bridge (pipe culvert coating and pipe coating) were found to be non-ACM.

No other hazardous/regulated items, bird/pigeon guano, or homeless activity/bloodborne pathogens were identified at Bridge No. 06955.

Information pertaining to the results of the limited hazardous materials investigation discussed can be found in the document listed below. This document shall be available for review electronically.

HazMat Inspection Letter, Replacement of Bridge No. 06955, Glen Street over Mattabesset River, Berlin, Connecticut, TRC Environmental Corporation, March 12, 2025.

NOTICE TO CONTRACTOR – ENVIRONMENTAL INVESTIGATIONS

The subject project involves various improvements to State Bridge No. 06955, which carries Glen Street over the Mattabesset River in Berlin, CT. The Project consists of a full replacement of the existing bridge, which will require intrusive/excavation work within the Project Limits. While no recent environmental investigations have been conducted specifically to characterize environmental media (e.g., soil and groundwater) within the Project Limits, historical investigations associated with roadway construction projects throughout the State have demonstrated general consistency in the presence of low levels of semi-volatile organic compounds (SVOCs), extractable petroleum hydrocarbons (ETPH), and metals in project soils, in some instances at concentrations that may exceed Connecticut Remediation Standard Regulations (CT RSRs) soil cleanup criteria. It is the Department's opinion that, in general, the presence of these potential constituents-of-concern (COCs) are reflective of general background conditions associated with historical roadway use (i.e., vehicle exhaust, tire wear, vehicle fluid drippage, etc.) and are typically at low levels. Soil within the limits of the Project should be considered the same for purposes of soil management and final disposition. However, COCs are expected to be present in Project soils at concentrations exceeding the "RCS-1" Acceptance Criteria for approved facilities under the Massachusetts Department of Environmental Protection *Policy #COMM-15-01 Interim Policy on the Re-Use of Soil for Large Reclamation Projects* or similar state policy. The actual contaminants and concentration ranges encountered during construction may vary and such variations will not be considered a change in condition provided the material can be disposed of as non-hazardous soil.

Based on the potential presence of COCs in excavated soils, the entire Project Limits have been designated as a Low-level Area of Environmental Concern (LLAOEC) for soil. All material excavated from within the LLAOEC, excluding existing pavement structure (asphalt and subbase), ballast, rock, ledge, and concrete, shall be reused to the maximum extent practicable on the Project unless deemed unsuitable by the Engineer due to physical indications of contamination or geotechnical characteristics of the material. Such unsuitable material, and surplus excavated material that cannot otherwise be reused on the Project, shall henceforth be considered Controlled Materials and transported to a designated temporary soil stockpile area for management and characterization pending final disposition. The Project temporary stockpile area shall be established by the Contractor prior to the initiation of construction activities generating Controlled Materials, at the Town-owned property located at 0 Patterson Way, approximately three (3) miles from the Project. Installation and maintenance of the temporary stockpile area, handling of stockpiled material, and off-site transportation and disposal of Controlled Materials at a Department-approved treatment/recycling/disposal facility shall be in accordance with *Item No. 0202315A – Disposal of Controlled Materials*.

Excavated material that is suitable for reuse on the Project shall be managed at the point of origin for use as backfill within the Project Limits. In instances where such material cannot be reused directly at the point of origin or within several days of excavation, the material shall be managed, in a manner approved by the Engineer, to minimize generation of fugitive dust and erosion, and prevent physical interference with other Project activities. In addition, the designated stockpile area described above may also be used for temporary storage of suitable reuse material, if needed.

In the event groundwater is encountered during construction, any dewatering associated with the construction shall be performed in accordance with the Connecticut Department of Energy and Environmental Protection's *General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities* unless physical evidence of contamination (e.g., oily sheen, free product, etc.) is observed by the Engineer. Provisions will be added for any discharges required to be managed under a permit other than that identified above.

The Contractor is hereby notified that materials requiring special management and/or disposal procedures may be encountered during various construction activities conducted within the Project Limits. Therefore, the Contractor will be required to implement appropriate health and safety measures for all construction activities to be performed within the areas of excavation within the Project Limits. These measures shall include, but are not limited to, air monitoring, engineering controls, personal protective equipment and decontamination, equipment decontamination, and personnel training. **WORKER HEALTH AND SAFETY PROTOCOLS WHICH ADDRESS POTENTIAL AND/OR ACTUAL RISK OF EXPOSURE TO SITE SPECIFIC HAZARDS ARE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.**
The Sections which shall be reviewed by the Contractor include the following:

- Item No. 0101000A – Environmental Health and Safety
- Item No. 0202315A – Disposal of Controlled Materials

The Contractor is alerted to the fact that a Department environmental consultant will be on-site for excavation activities within the Project Limits, to collect soil (and groundwater if necessary) samples, and to observe site conditions for the State.

NOTICE TO CONTRACTOR – METALLIZED COLOR SAMPLE

The Contractor is hereby notified that a sample of the metallized color applied to the bridge railing shall be provided to the Town of Berlin for review and approval prior to finalizing the order.

NOTICE TO CONTRACTOR – TREE CLEARING MOBILIZATION AND TIME OF YEAR RESTRICTIONS

The Contractor is hereby notified that mobilization for tree clearing activities shall be required immediately following the issuance of the Notice to Proceed, with an anticipated start date of April 1, 2026. This mobilization shall facilitate the trimming and cutting of trees with a diameter of 3 inches or greater at breast height or above.

The Contractor shall ensure that all necessary personnel and equipment are available and prepared to perform the required tree clearing work during the period from April 1, 2026, through April 14, 2026.

All tree trimming and clearing activities associated with construction shall be conducted within the project limits and must comply with the Time of Year (TOY) restriction, which prohibits such activities from April 15 through October 31, inclusive. No exceptions will be granted to this restriction. Additionally, no contract time extensions will be approved for construction delays resulting from the inability to perform tree clearing or trimming due to the TOY restriction.

SECTION 1.01
DEFINITIONS OF TERMS AND PERMISSIBLE ABBREVIATIONS

1.01.01—Definitions: is amended and supplemented as follows:

Substitute the word "Municipality" or "Municipal" for "Department" wherever "Department" appears in the definitions for each of the following terms: Award, Contract, Highway, Plans, and Project.

Substitute the word "Engineer" for "Commissioner" wherever "Commissioner" appears in the definitions for each of the following terms: Subcontractor and Sub-subcontractor.

Engineer: Delete the definition in its entirety and replace with the following:

The Municipality's Director of Public Works acting directly or through a duly authorized representative.

Add the following:

Municipal: Of or relating to the Municipality.

Municipal Liaison: That individual identified by the Municipality to act as liaison with the State of Connecticut, Department of Transportation.

Municipality: Town of Berlin, Connecticut

SECTION 1.02
PROPOSAL REQUIREMENTS AND CONDITIONS

Section 1.02 is supplemented and amended as follows:

Throughout this Section, make the following substitutions for all occurrences of the word(s) identified below for substitution:

Substitute "Engineer" for "Commissioner" and for "Division of Contracts."
Substitute "Municipality" or "Municipal" for "Department" and for "Contract Section".

1.02.01—Contract Bidding and Award: is amended as follows:

Add the following two (2) paragraphs to the end of the first paragraph:

Should the Municipality NOT allow electronically submitted bids, then each paper bid proposal must be submitted in a sealed envelope large enough to hold the proposal documents (recommended size 10-1/2 x 13). **The envelope must clearly state the name and address of the firm submitting the bid, the name of the Town and Project Number for the bid.** The envelope must be delivered to the Municipality on or before the hour and date, and to the location, set forth in the bid advertisement for the opening of proposals, unless the bidder is otherwise directed.

On the date and at the time and place designated in the bid advertisement and in the related Notice to Contractors or addendum notice, the sealed paper bid proposals shall be publicly opened and read out loud. At the time that paper bid proposal is opened, it shall be checked for "responsiveness" in various respects, to determine if it complies with applicable statutes, regulations, and the Municipality's Specifications, including Connecticut DOT's Standard Specifications. Each bidder is required to include with its paper bid proposal the following documents: the completed paper bid proposal form (incl. the schedule of prices), the required bid bond, a non-collusion affidavit, and any other information required by the bid documents or by the bid advertisement. Each paper bid proposal shall be governed by the terms and conditions, as applicable that are stipulated in the Connecticut DOT's Construction Bidding and Award Manual, for electronically submitted bids.

After the first sentence of the third paragraph, add the Following:

In accordance with the provisions of the Construction Contract Bidding and Award Manual, bidders must be prequalified for **Group 8A - Box Culverts**, to be eligible to bid on this project. Bidders that are not prequalified for this work classification will not be approved to bid on this project.

Add the sentence below following the end of the last paragraph:

Prequalification by the State of Connecticut Department of Transportation is required for this project.

1.02.03—Examination of Contract Documents and Work Site:
Delete the last paragraph and replace with the following:

Bidders must inform the Municipality, at the earliest opportunity, in writing, of any and all omissions, errors, and/or discrepancies that the bidder discovers within or among the plans, specifications, and bidding documents. Information and inquiries concerning such matters, and any other information or inquiry concerning the conditions of bidding or award or the interpretation of contract documents must be transmitted in writing to:

Mr. James Horbal
Deputy Director of Public Works.
Berlin Town Hall,
240 Kensington Road
Berlin, CT 06037
Tel: (860)-828-7022
Email: jhorbal@berlinct.gov

The Municipality cannot ensure a response to inquiries received later than ten (10) days prior to the scheduled bid opening of the related bid. When deemed warranted by the Municipality, responses to such inquiries that relate to changes in, or interpretations of, the Project documents (plans and specifications) will be issued to all bidders in the form of addenda and made a part of the Contract. Bidders are responsible for ensuring that they are aware of all addenda. Failure by the Municipality, or postal or other courier services to deliver addenda or other information regarding a Contract being bid does not release the bidder from any obligations under said addenda or the conditions of the bid.

SECTION 1.03
AWARD AND EXECUTION OF CONTRACT

Section 1.03 is supplemented and amended as follows:

Throughout this Section, except for Article 1.03.07, make the following substitutions for all occurrences of the word(s) identified below for substitution:

Substitute "Engineer" for "Commissioner," for "Manager of Contracts" and for "Transportation Manager of Contracts".

Substitute "Municipality" for "Department" and "State".

1.03.07—Insurance: is amended as follows:

Substitute "State and Municipality" for "Department" and "State".

It is the intent of this Article to designate the State and Municipality as additional insured, as applicable.

SECTION 1.04
SCOPE OF WORK

Section 1.04 is supplemented and amended as follows:

Throughout this Section, make the following substitutions for all occurrences of the word(s) identified below for substitution:

Substitute "Engineer" for "Department's Assistant District Engineer".
Substitute "Municipality" for "Department" and for "State".

1.04.05 – Extra Work: is amended as follows:

Add the following at the end of second paragraph:

Bonding costs shall not be included in the contractor's compensation request. However, if the contractor incurs or will incur increased bonding costs related to the extra work, the contractor shall request separate compensation for such costs. The contractor's request shall be itemized and include a certified statement from the bonding company stating that the value of the work will require an increase in bonding coverage and shall detail the additional costs (within allowable contract amount limitations). If satisfactory substantiation is provided, a new item for increased bonding costs will be incorporated into the contract by means of a construction order.

Insert the following immediately following "Department's Assistant District Engineer" in the third paragraph: "and/or the Municipality's authorized representative".

SECTION 1.05
CONTROL OF THE WORK

Section 1.05 is supplemented and amended as follows:

Substitute "Municipality" for "Department" and/or "State" and "Engineer" for "Department's Assistant District Engineer".

1.05.02-1. Plans: Substitute "Municipality" for "Department.

Add the following sentence to the end of the Subarticle: "The Working Drawings, Shop Drawings and Product Data shall be submitted to the Designer as hereinafter noted; copies of transmittal letters shall be sent to the oversight District and the Municipality.

Designer

Mr. Brian Chamberlin, P.E.
Jacobs Engineering
100 Great Meadow Road, Suite 707
Wethersfield, Connecticut 06109
Tel: (860) 560-8900
Email: brian.chamberlin@jacobs.com

Oversight District

Mr. Daniel Stafko, P.E.
Assistant District Engineer – District 1
1107 Cromwell Avenue
Rocky Hill, Connecticut 06067
Tel: (860) 258-4604
Email: daniel.stafko@ct.gov

Municipality

Mr. James Horbal
Deputy Director of Public Works
Berlin Town Hall
240 Kensington Road,
Berlin, Connecticut, 06037
Tel: (860)-828-7069
Email: jhorbal@berlinct.gov

1.05.02-2. Working Drawings: Substitute "Municipality" for "Assistant District Engineer".

1.05.02-5. Submittal Preparation and Processing – Review Timeframes: Substitute "Designer" for "Department".

Add the following paragraphs:

"Prior to the submission of any working, shop or erection drawings, the Contractor shall prepare and submit to the Engineer, for approval, a schedule for all proposed working and shop drawings. This initial schedule should be submitted within thirty (30) days of contract award and must be submitted before the Notice to Proceed. The Contractor shall coordinate, schedule and control all submittals of working and shop drawings including those of his various subcontractors, suppliers and engineers to provide for an orderly and balanced distribution of the work.

Each Shop Drawing shall include the name and telephone number of the fabricator's contact person who is familiar with the drawing and who will be available to answer questions by the Engineer or Designer should any arise during the review process.

It is incumbent upon the Contractor to submit his shop drawings in accordance with the approved working and shop drawing schedule to facilitate expeditious review. Voluminous submittals of shop drawings at one time are discouraged and may result in increased review time. In no case will the Municipality accept liability for resulting delays, added costs and related damages when the time required for approval extends beyond the approximate times shown herein when the shop drawings are not submitted in conformance with the approved schedule."

1.05.02-5(a). Submissions: Substitute "oversight" for "administering" when citing the Construction District and add "and Municipality" to the end of the sentence.

1.05.02-5(b). Submissions: Substitute "Designer" for "Assistant District Engineer of the administering Construction District".

1.05.02-5(c). Submissions: Substitute "Designer" for "administering Construction District".

1.05.06 – Cooperation with Utilities (including railroads):

Add the following:

Within the project, there may be public utility structures; and, notwithstanding any other clause or clauses of this Contract, the Contractor cannot proceed with his work until he has made diligent inquiry with the utility companies, municipal authorities or other utility owners to determine their exact location, and until he has notified "Call Before You Dig". The Contractor shall notify, in writing, the utility companies, municipalities or other owners involved, of the nature and scope of the project and of his operations that may affect their facilities or property. Copies of such notices shall be sent to the Engineer.

Add the following to the beginning of the first paragraph of Article 1.05.12:

1.05.12—Payrolls: The Contractor and all subcontractors shall use ***AASHTOWare Project®*** software in accordance with Article 1.05.25, with a Department-provided template, or by other means previously accepted by the Department, to electronically upload all Project payrolls, as directed herein.

Add the following to the end of Article 1.05.12:

These requirements shall be included in all subcontracts for this Project.

All costs for these requirements shall be included in the general cost of the work.

Add the following new Article 1.05.25:

1.05.25—Use of *AASHTOWare Project*® Software: The Contractor and all subcontractor(s) shall use the ***AASHTOWare Project®*** software for electronic submittal of all payrolls as outlined in the Department's AASHTOWare Contractor's User Manual, found at the Department's AASHTOWare Training webpage, and as stated in the specifications.

The Contractor and all subcontractor(s) shall use the ***AASHTOWare Project®*** software for monthly verification of project payments at all tiers, as outlined in the Department's AASHTOWare Contractor's User Manual, found at the Department's AASHTOWare Training webpage, and as stated in the specifications. The Department will inform the Contractor of other deliverables to be similarly submitted, as required.

Within 10 days of execution of the Contract, the Contractor shall submit the name(s) of the ***AASHTOWare Software Project Liaison*** and required staff that will be using the Department's software for this work. Similarly, within 10 days after the Contractor (or a subcontractor) enters into a subcontractor agreement to sublet any work, they shall submit the name(s) of their ***AASHTOWare Software Project Liaison*** and required staff that will be using the Department's software for this work. The Contractor and subcontractors shall immediately notify the Department of any change in Project staff authorized to access the AASHTOWare system or of a need to revise the Project Liaison.

Training materials, such as videos and written guides are available on the Department website for Contractor use. The Contractor and all subcontractors shall be responsible to train their staff.

This ***AASHTOWare Project®*** software will require that the Contractor and all subcontractor(s) provide their staff with access to the internet, using devices suitable for this work, at their own

expense, throughout the duration of the Project. The Department has obtained licensing that allows the Contractor and subcontractors to access (from the internet) and use of the ***AASHTOWare Project***® software. The Department will provide the Contractor and subcontractors with usernames and passwords to access the ***AASHTOWare Project***® software, at no cost.

The Department shall not be held responsible for delays, lack of processing, or responses to submittals that do not follow the specified guidelines in the Department's AASHTOWare Contractor's User Manual, found at the Department's AASHTOWare Training webpage.

These requirements shall be included in all subcontracts for this Project.

All costs for these requirements shall be included in the general cost of the work.

SECTION 1.06
CONTROL OF MATERIALS

Section 1.06 is supplemented and amended as follows:

Throughout this Section, make the following substitutions for all occurrences of the word(s) identified below for substitution:

Substitute "Department/Municipality" or "Municipal" for "Department".

SECTION 1.07
LEGAL RELATIONS AND RESPONSIBILITIES

1.07.01—Laws to be Observed: is amended as follows:

In the second sentence of the first paragraph, after the word "State" add the words "and Municipality".

1.07.03—Proprietary Devices, Materials and Processes: is amended as follows:

After the word "State" add the words "and Municipality" throughout this Article.

1.07.04—Restoration of Surfaces Opened Pursuant to Permit or Contract: is amended as follows:

Replace the word "Department" with "Municipality" throughout this Article.

1.07.07—Safety and Public Convenience: is amended as follows:

In the penultimate paragraph, after the word "State," add the words "or Municipality".

1.07.09—Protection and Restoration of Property: is supplemented and amended as follows:

Add the words "or Municipality" after the word "State" wherever the word "State" appears in this Article.

Add the phrase "or Municipality, as applicable" after the word "Department" wherever the word "Department" appears in this Article.

Add the following:

> The Contractor shall notify the Tree Warden of the Municipality, in which the bridge project is located, five (5) days prior to flagging so that the Tree Warden may be present during the flagging.
>
> All trees scheduled to be removed outside of the proposed gutter or curb lines of the highway shall be visibly marked or flagged by the Contractor at least five (5) days prior to cutting of such trees.
>
> The Engineer will inspect the identified trees and verify the limits of tree removal prior to the Contractor proceeding with his cutting operation, should such an operation be required elsewhere in this contract.

1.07.10—Contractor's Duty to Indemnify the State Against Claims for Injury or Damage: is amended as follows:

Revise the title of this Article to read "Contractor's Duty to Indemnify the State and/or Municipality Against Claims for Injury or Damage."

In the first sentence, delete the words "the Department".

Replace the word "State" with "State and/or Municipality" throughout this Article.

Replace the word "Commissioner" with "Engineer" throughout this Article.

1.07.11—Opening of Section of Project to Traffic or Occupancy: is amended as follows:

Replace the word "State" with "Municipality" or "Municipal" throughout this Article.

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

The Contractor's attention is directed to the fact that there are utilities within the limits of the existing bridge: overhead utilities (including utility poles, pole guys and overhead wires), underground utilities (including the water main).

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

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

Connecticut Natural Gas
Jonathan Gould – Gas Engineering
JGould@ctgcorp.com
76 Meadow Street, East Hartford, CT 06108
Cell: 1-860-727-3044

Kensington Fire District
Dan McKeon – Superintendent
dmckeon@snet.net
947 Farmington Ave, Berlin, CT 06037
860-828-1782

Town of Berlin
Mike Ahern – Town Engineer/Public Works Director
mahern@berlinct.gov
240 Kensington Road Berlin, CT 06037
860-828-7014

Eversource – Electric Distribution
Jonathan Makowski – Project Engineer
Jonathan.makowski@eversource.com
203-271-4856

All work shall be in conformance with Rules and Regulations of Public Utility Regulatory Authority (PURA) concerning Traffic Signals attached to Public Service Company Poles.

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

Add the words "and Municipality" after the word "State".

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

Replace the words "Commissioner" and "Department" with "Municipality" or "Municipal" throughout this Article.

1.07.16—Unauthorized Use of Area(s) within the Project Site: is amended as follows:

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

Add the following new Subarticle:

1.07.19—Personal Liability of Representatives of the Municipality

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

SECTION 1.08
PROSECUTION AND PROGRESS

Add the following to the beginning of the first paragraph of Article 1.08.01:

1.08.01—Transfer of Work or Contract: The Contractor and all subcontractors shall use the *AASHTOWare Project*® software in accordance with Article 1.05.25, for monthly verification of project payments at all tiers, in accordance with the Department's AASHTOWare Contractor's User Manual, found at the Department's AASHTOWare Training webpage, and as stated in the specifications.

Add the following to the end of Article 1.08.01:

All costs for the requirements of this Article shall be included in the general cost of the work.

Article 1.08.03 - Prosecution of Work:

When all apparent conflicts have been identified and resolved, and written commitments have been received from suppliers that all equipment and materials will be received within 30 days, the Contractor may request that the construction phase begin. Glen Street will be closed for the duration of construction and traffic will be detoured via West Lane, Route 71A (Chamberlain Highway) and High Road. The project will be constructed in two water handling stages as depicted in the Plans to maintain open flow in the Mattabesset River along with the maintenance of water main and sewer main services during construction.

Stage 1:

- Conduct a pre-construction survey at 215 Robindale Drive and 85 Glen Street.
- Install sedimentation and erosion control system, clear and grub, and remove invasive vegetation.
- Install MPT for road closure and implement detour.
- Cap and abandon existing gas main (by CNG). Install temporary support system to support existing sewer main and temporarily relocated water main. Remove existing water main and gas main.
- Install Stage 1 cofferdam and water handling cofferdam to divert flow to the north culvert. Excavate and remove south culvert.
- Install proposed south box culvert and construct Wingwalls 1A and 1B and Barrier Wall 101. Backfill and install the approach slab. Install riprap in channel and embankments. Remove Stage 1 cofferdam and water handling cofferdam.

Stage 2:

- Install Stage 2 cofferdam and water handling cofferdam to divert flow through the newly constructed south culvert. Excavate and remove north culvert.

- Install proposed north box culvert and construct Wingwalls 2A and 2B and Barrier Wall 102. Backfill and install the approach slab. Install precast headwalls and place roadway subbase.
- Install proposed gas main over roadway subbase. Permanently support new water and sewer main on downstream fascia and remove the temporary water main, existing sewer main and temporary utility support system.
- Install riprap in channel and embankments. Install roadway drainage and construct roadway to final grade.
- Remove Stage 2 cofferdam and water handling cofferdam, restore disturbed areas and perform landscaping. Perform a post-construction condition survey at 215 Robindale Drive and 85 Glen Street.
- Remove detour signs and open roadway to traffic.

Article 1.08.04 - Limitation of Operations - Add the following:

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

Glen Street

On the following State observed Legal Holidays:

New Year's Day
Good Friday, Easter
Memorial Day
Juneteenth
Independence Day
Labor Day
Columbus Day
Thanksgiving Day
Christmas Day

The Contractor will be required to coordinate with the Town of Berlin for any construction activities that fall on any Town-specific Holidays or other Special Events that are not listed as part of the State observed Legal Holidays.

During all other times

The contractor will be allowed to perform work daily as follows:

Monday through Friday between 7:30 a.m. and 4:30 p.m.

The Contractor shall notify the Engineer and the Town of Berlin prior to performing any work on Saturday. Written approval from the Town of Berlin is required prior to commencing any work on Saturday. The Contractor will not be allowed to work on Sunday.

The Contractor will not be allowed to perform any work that will interfere with existing traffic operations on:

Monday through Friday between 6:00 a.m. and 9:00 a.m. & between 3:00 p.m. and 6:00 p.m. Saturday and Sunday between 10:00 a.m. and 6:00 p.m.

Restrictions:

A. The Contractor will be allowed to close Glen Street and detour traffic for the duration of the project, as specified in the contract.
B. The Contractor shall notify the Engineer at least 14 days in advance of the start of the Glen Street closure.
C. During allowable period when detour is not in effect, the Contractor will be allowed to halt traffic on Glen Street for a period not to exceed 10 minutes to perform necessary work for minor items and/or moving barriers, relocation of utilities, as approved by the Engineer, between 9:00 a.m. and 3:00 p.m. Monday through Friday.
D. During allowable period when detour is not in effect, the Contractor will be allowed to maintain a Stop-Controlled alternating one-way traffic operation on Glen Street in the vicinity of the bridge on paved travel path not less than 11 feet in width.

All Other Roadways

Monday through Friday between 6:00 a.m. and 9:00 a.m. & between 3:00 p.m. and 6:00 p.m. Saturday and Sunday between 10:00 a.m. and 6:00 p.m.

Additional Restrictions

It is anticipated that work on adjacent projects will be ongoing simultaneously with this project. The Contractor shall be aware of those projects and anticipate that coordination will be required to maintain proper traffic flow at all times on all project roadways, in a manner consistent with these specifications and acceptable to the Engineer.

The Contractor will not be allowed to perform any work that will interfere with traffic operations on a roadway when traffic operations are being restricted on that same roadway, unless there is at least a one mile clear area length where the entire roadway is open to traffic or the closures have been coordinated and are acceptable to the Engineer. The one-mile clear area length shall be measured from the end of the first work area to the beginning of the signing pattern for the next work area.

SECTION 1.09
MEASUREMENT AND PAYMENT

Section 1.09 is supplemented and amended as follows:

Throughout this Section, make the following substitutions for all occurrences of the word(s) identified below for substitution:

"Municipality" or "Municipal" for "Department" and for "State".

Substitute "Engineer" for "Commissioner".

Article 1.09.06—Partial Payments

Subarticle B. Payment for Stored Materials *is amended as follows:*

B. Payment for Stored Materials: Non-perishable materials that are required for Project construction and that the Contractor has produced or purchased specifically for incorporation into the Project, but which have not yet been so incorporated, may be included in a payment estimate if

(i) The materials meet all applicable Contract specifications,
(ii) The materials have been delivered to the Project site or to another location approved by the Engineer, and
(iii) The Contractor has submitted to the Engineer, as evidence of the Contractor's purchase of the materials, copies of notarized receipted bills and a notarized Certificate of Title, lien waiver, and right of entry to the materials, in the form approved by the Department, duly executed by the Contractor, the Vendor and any other parties deemed necessary by the Engineer to satisfy proof of unencumbered ownership.

The Engineer will decide at what fair and appropriate fraction of the applicable Contract price such materials may be included in a payment estimate.

Offsite storage may be approved by the Engineer, provided that the materials proposed for payment are stored in a secure area, segregated from other materials, clearly labeled as being owned by the Department for use on the identified Project, otherwise handled in compliance with Article 1.06.03 and stored in accordance with the manufacturer’s recommendations. All such materials must be readily available for inventory and inspection by the Engineer. Storage outside of the State of Connecticut may be considered only when a representative of the Department is able to verify that the above requirements have been satisfied.

For items requiring extended fabrication, manufacturing or assembly time, the Contractor may propose to the Engineer a schedule of values for completely fabricated portions of the related material. If the Engineer accepts such a schedule of values, it shall become the Basis of Payment for the stored materials, so long as all other pertinent Contract requirements have been satisfied.

Generic materials having a use on many projects will be considered for payment prior to their incorporation into the Project only if stored in unopened packaging or in large lots stored at the project site.

Stock and raw materials will not be considered for such advance payment without the Engineer's prior written consent thereto.

In no case shall material payments exceed the Contract unit price or lump sum price less the actual value of the remaining work under the item, including but not limited to delivery and installation of the materials. If the proposed material costs do exceed such a price, the Engineer reserves the right to reduce any related payment accordingly. In such an instance the Contractor shall provide documentation of ownership and written acceptance of the amount to be paid in a form acceptable to the Engineer prior to any payments being made by the Engineer. Such reductions in payment shall in no way affect the Department's ownership interest in the stored materials or release the Contractor from any other requirements of the Contract.

SECTION 1.10
ENVIRONMENTAL COMPLIANCE

1.10.02—Compliance with Laws and Regulations: is amended as follows:

Replace the word "Department" with "Municipality" throughout this Article.

In the last sentence of the last paragraph of this Article, add the phrase "under any other State contract".

1.10.03—Water Pollution Control: is amended as follows:

Replace the word "Department" with "Municipality" throughout this Article.

Add the following sentence after the second sentence of the third paragraph:

> The following items may also be superseded by specific permits from the Connecticut Department of Energy and Environmental Protection (DEEP) and/or the appropriate local wetlands and watercourses regulatory authority.

In the REQUIRED BEST MANAGEMENT PRACTICES No. 13, replace "State right-of-way" with "State or Municipal right-of-way."

Add the following after Required Best Management Practices Number 13:

14. The Contractor is hereby notified that one or more State and/or federally listed species of bat has been documented within the Project limits. In Connecticut, the Eastern small-footed bat (*Myotis leibii*), tri-colored bat (*Perimyotis subflavus*), little brown bat (*Myotis lucifugus*), Northern long-eared bat (*Myotis septentrionalis*) and the Indiana bat (*Myotis sodalis*) are listed as State endangered; while the silver-haired bat (*Lasionycteris noctivagans*), hoary bat (*Lasiurus cinereus*) and the red bat (*Lasiurus borealis*) are listed as State species of special concern. The Northern long-eared bat, tri-colored bat, and the Indiana bat are also federally listed endangered species. Bats are the only mammals capable of actual flight and are primarily nocturnal. During the daylight, bats roost in trees and caves, but many have now adapted to roost in or on buildings including barns, houses, tunnels, and bridges. Within the Project limits, bats will use the snags, cavities, and underside of bark to roost and raise young. **This Project will have a Time of Year restriction for tree clearing, trimming and removal to protect the bat species listed.**

    The Contractor shall, through the Engineer and at least 10 days prior to the commencement of any construction activities, arrange a meeting with the District Environmental Coordinator (DEC) and Office of Environmental Planning (OEP) (or their authorized delegate) to discuss proper protocol for maintaining environmental commitments made for the protection of these

bat species and their habitat. OEP will provide oversight through the DEC and Engineer to ensure that the following protocols are followed and maintained during the Project:

a. The Contractor, through the Engineer, shall arrange a pre-construction tree-clearing Site walk to review all trees proposed to be removed for the Project.
b. Clearing, trimming or removal of any tree three (3) inches diameter at breast height (DBH) or greater will be prohibited between April 15 and October 31.
c. This restriction shall also apply to invasive species removal work and shall be reflected in the Contractor's Invasive Vegetation Removal Plan, if applicable.

These practices will be applied to the entire Project unless a specified location is identified within the Project plans, which denotes specific areas of concern.

If any bats are observed in or around the Project area, the Engineer will notify the DEC to facilitate further coordination with OEP's Environmental Resource Compliance Unit. If the DEC is unable to be reached, notify OEP at Andrew.Piraneo@ct.gov or at Marilyn.Gould@ct.gov.

The OEP will be responsible for completing and submitting the Natural Diversity Data Base (NDDB) Vertebrate Sheet (https://portal.ct.gov/DEEP/Endangered-Species/Contributing-Data). This completed document allows CTDEEP to update their database.

All listed bat species are protected by federal and/or State laws which prohibit killing, harming, taking, harassing, or keeping them in your possession. A CTDEEP fact sheet(s) for the listed bats noted above shall be posted in the Contractor's and Inspection field offices and can be downloaded at the link below.

CTDEEP's Fact Sheet for Bats:
https://portal.ct.gov/-/media/DEEP/wildlife/pdf_files/outreach/fact_sheets/Bats.pdf

1.10.07—Controlled and Hazardous Materials: is amended as follows:

Replace the word "Department" with "Municipality" throughout this Article.

SECTION 1.11
CLAIMS

Section 1.11 is supplemented and amended as follows:

Throughout this Section make the following substitutions for all occurrences of the word(s) identified below for substitution:

Substitute "Chief Administrative Official of the Municipality" for "Commissioner".
Substitute "Municipality" or "Municipal" for "Department".

DIVISION II
CONSTRUCTION DETAILS

Throughout all the various Sections contained in Division II, substitute the word "Municipality" or "Municipal" for "Department" wherever "Department" appears, except in those instances where the word "Department" is used to identify a state agency.

DIVISION III
MATERIALS SECTION

Throughout all the various Sections contained in Division III, substitute the word "Municipality" or "Municipal" for "Department" wherever "Department" appears, except in those instances where the word "Department" is used to identify a state agency.

CODE OF ETHICS

The Contractor shall comply with the provisions contained in Section 1-86e of the Connecticut General Statutes, which provides as follows:

(a) No person hired by the state as a Contractor or independent contractor shall:

(1) Use the authority provided to the person under the contract, or any confidential information acquired in the performance of the contract, to obtain financial gain for the person, an employee of the person or a member of the immediate family of any such person or employee;
(2) Accept another state contract which would impair the independent judgment of the person in the performance of the existing contract; or
(3) Accept anything of value to a person hired by the state as a Contractor or independent contractor based on an understanding that the actions of the Contractor or independent contractor on behalf of the state would be influenced.

(b) No person shall give anything of value to a person hired by the state as a Contractor or independent contractor based on an understanding that the actions of the Contractor or independent contractor on behalf of the state would be influenced.

The following clause is applicable to those contracts with a value of Five Hundred Thousand Dollars ($500,000) or more:

The Contractor shall comply with the Code of Ethics for Public Officials, Conn. Gen. Stat. §§ 1-79 *et seq*., and Code of Ethics for Lobbyists, Conn. Gen. Stat. §§ 1-91 *et seq*., when and where applicable. Insofar as state contractors are concerned, a summary of the most relevant provisions of the Codes of Ethics is contained in the Summary of State Ethics Laws for Current and Potential State Contractors. The Contractor acknowledges receiving such Summary, which is incorporated herein by reference. The Summary may change from time to time and may be accessed via the Internet at www.ethics.state.ct.us.

The Contractor agrees that the above clause will also be incorporated in all of its contracts with its subcontractors and consultants.

The Contractor agrees that any instance of its violating the Code of Ethics or the Department of Transportation Ethics Policy will be sufficient cause for the Department to terminate any or all of the Contractor's pending contracts with the Department.

In addition, the Contractor hereby acknowledges and agrees to comply with the policies enumerated in "Connecticut Department of Transportation Policy Statement Policy No. F&A-10, Subject: Code of Ethics Policy", dated June 1, 2007, a copy of which is attached hereto and made a part hereof.

CONNECTICUT DEPARTMENT OF TRANSPORTATION

POLICY STATEMENT

POLICY NO. F&A-10
June 1, 2007

SUBJECT: Code of Ethics Policy

The purpose of this policy is to establish and maintain high standards of honesty, integrity, and quality of performance for all employees of the Department of Transportation ("DOT" or "Department"). Individuals in government service have positions of significant trust and responsibility that require them to adhere to the highest ethical standards. Standards that might be acceptable in other public or private organizations are not necessarily acceptable for the DOT.

It is expected that all DOT employees will comply with this policy as well as the Code of Ethics for Public Officials, and strive to avoid even the appearance of impropriety in their relationships with members of the public, other agencies, private vendors, consultants, and contractors. This policy is, as is permitted by law, in some cases stricter than the Code of Ethics for Public Officials. Where that is true, employees are required to comply with the more stringent DOT policy.

The Code of Ethics for Public Officials is State law and governs the conduct of all State employees and public officials regardless of the agency in which they serve. The entire Code, as well as a summary of its provisions, may be found at the Office of State Ethics' web site: www.ct.gov/ethics/site/default.asp. For formal and informal interpretations of the Code of Ethics, DOT employees should contact the Office of State Ethics or the DOT's Ethics Compliance Officer or her designee.

All State agencies are required by law to have an ethics policy statement. Additionally, all State agencies are required by law to have an Ethics Liaison or Ethics Compliance Officer. The DOT, because of the size and scope of its procurement activities, has an Ethics Compliance Officer who is responsible for the Department's: development of ethics policies; coordination of ethics training programs; and monitoring of programs for agency compliance with its ethics policies and the Code of Ethics for Public Officials. At least annually, the Ethics Compliance Officer shall provide ethics training to agency personnel involved in contractor selection, evaluation, and supervision. A DOT employee who has a question or is unsure about the provisions of this policy, or who would like assistance contacting the Office of State Ethics, should contact the Ethics Compliance Officer or her designee.

The DOT Ethics Compliance Officer is:

Denise Rodosevich, Managing Attorney
Office of Legal Services

For questions, contact the Ethics Compliance Officer's Designee:

Alice M. Sexton, Principal Attorney
Office of Legal Services
2800 Berlin Turnpike
Newington, CT 06131-7546
Tel. (860) 594-3045

To contact the Office of State Ethics:

Office of State Ethics
20 Trinity Street, Suite 205
Hartford, CT 06106
Tel. (860) 566-4472
Facs. (860) 566-3806
Web: www.ethics.state.ct.us

Enforcement

The Department expects that all employees will comply with all laws and policies regarding ethical conduct. Violations of the law may subject an employee to sanctions from agencies or authorities outside the DOT. Whether or not another agency or authority imposes such sanctions, the Department retains the independent right to review and respond to any ethics violation or alleged ethics violation by its employees. Violations of this policy or ethics statutes, as construed by the DOT, may result in disciplinary action up to and including dismissal from State service.

Prohibited Activities

1. ***Gifts:*** DOT employees (and in some cases their family members) are prohibited by the Code of Ethics and this Policy from accepting a gift from anyone who is: (1) doing business with, or seeking to do business with, the DOT; (2) directly regulated by the DOT; (3) prequalified as a contractor pursuant to Conn. Gen. Stat. §4a-100 by the Commissioner of the Department of Administrative Services (DAS); or (4) known to be a registered lobbyist or a lobbyist's representative. These four categories of people/entities are referred to as "restricted donors." A list of registered lobbyists can be found on the web site of the Office of State Ethics (www.ct.gov/ethics/site/default.asp). A list of prequalified consultants and contractors, *i.e.,* those seeking to do business with the DOT, can be found on the DOT's Internet site under "Consultant Information" and "Doing Business with ConnDOT," respectively.

   The term "gift" is defined in the Code of Ethics for Public Officials, Conn. Gen. Stat. §1-79(e), and has numerous exceptions. For example, one exception permits the acceptance of food and/or beverages valued up to $50 per calendar year from any one donor and consumed on an occasion or occasions while the person paying or his representative is present. Therefore, such food and/or beverage is not a "gift." Another exception permits the acceptance of items having a value up to ten dollars ($10) provided the aggregate value of all things provided by the donor to the recipient during a calendar year does not exceed fifty dollars ($50). Therefore, such items are not a "gift." Depending on the circumstances, the "donor" may be an individual if the individual is bearing the expense, or a donor may be the individual's employer/group if the individual is passing the expense back to the employer/group he/she represents.

   This policy requires DOT employees to immediately return any gift (as defined in the Code of Ethics) that any person or entity attempts to give to the employee(s). If any such gift or other item of value is received by other than personal delivery from the subject person or entity, the item shall be taken to the Office of Human Resources along with the name and address of the person or entity who gave the item. The Office of Human Resources, along with the recipient of the item of value, will arrange for the donation of the item to a local charity (e.g., Foodshare, local soup kitchens, etc.). The Office of Human Resources will then send a letter to the gift's donor advising the person of the item's donation to charity and requesting that no such gifts be given to DOT employees in the future.

2. ***Contracting for Goods or Services for Personal Use With Department Contractors, Consultants, or Vendors:*** Executive Order 7C provides that: "Appointed officials and state employees in the Executive Branch are prohibited from contracting for goods and services, for personal use, with any person doing business with or seeking business with his or her agency, unless the goods or services are readily available to the general public for the price which the official or state employee paid or would pay."

3. ***Gift Exchanges Between Subordinates and Supervisors/Senior Staff:*** A recent change in the Code of Ethics prohibits exchanges of gifts valued at $100 or more between (*i.e.,* to and from) supervisors and employees under their supervision. The Citizen's Ethics Advisory Board has advised that: (1) the monetary limit imposed by this provision is a per-gift amount; (2) gifts given between supervisors and subordinates (or *vice versa)* in celebration of a "major life event," as defined in the Code of Ethics, need not comply with the $100 limit; and (3) the limitations imposed by this provision apply to a direct supervisor and subordinate *and to any individual up or down the chain of command.* The Citizen's Ethics Advisory Board has also advised that supervisors or subordinates may not pool their money to give a collective or group gift valued at $100 or more, even though each of the individual contributions is less than $100.

4. ***Acceptance of Gifts to the State:*** A recent change to the Code of Ethics for Public Officials modified the definition of the term "gift" to limit the application of the so-called "gift to the State" exception. In general, "gifts to the State" are goods or services given to a State agency for use on State property or to support an event and which facilitate State action or functions. Before accepting any benefit as a "gift to the State," DOT employees should contact the Ethics Compliance Officer.

5. ***Charitable Organizations and Events:*** No DOT employee shall knowingly accept any gift, discount, or other item of monetary value for the benefit of a charitable organization from any person or entity seeking official action from, doing or seeking business with, or conducting activities regulated by, the Department.

6. ***Use of Office/Position for Financial Gain:*** DOT employees shall not use their public office, position, or influence from holding their State office/position, nor any information gained in the course of their State duties, for private financial gain (or the prevention of financial loss) for themselves, any family member, any member of their household, nor any "business with which they are associated." In general, a business with which one is associated includes any entity of which a DOT employee or his/her immediate family member is a director, owner, limited or general partner, beneficiary of a trust, holder of 5 percent or more stock, or an officer (president, treasurer, or executive or senior vice president).

   DOT employees shall not use or distribute State information (except as permitted by the Freedom of Information Act), nor use State time, personnel, equipment, or materials, for other than State business purposes.

7. ***Other Employment:*** DOT employees shall not engage in, nor accept, other employment that will either impair their independence of judgment with regard to their State duties or require or induce them to disclose confidential information gained through their State duties.

   Any DOT employee who engages in or accepts other employment (including as an independent contractor), or has direct ownership in an outside business or sole proprietorship, shall complete an Employment/Outside Business Disclosure Form (see attached) and submit it to the Department's Human Resources Administrator. Disclosure of other employment to the DOT Human Resources Administrator shall *not* constitute approval of the other employment for purposes of the Code of Ethics for Public Officials.

   Inquiries concerning the propriety of a DOT employee's other employment shall be directed to the Office of State Ethics to assure compliance with the Code of Ethics for Public Officials. Employees anticipating accepting other employment as described above should give ample time (at least one month) to the Office of State Ethics to respond to such outside employment inquiries.

No employee of the DOT shall allow any private obligation of employment or enterprise to take precedence over his/her responsibility to the Department.

8. ***Outside Business Interests:*** Any DOT employee who holds, directly or indirectly, a financial interest in any business, firm, or enterprise shall complete an Employment/Outside Business Disclosure Form (see attached) and submit it to the Department's Human Resources Administrator. An indirect financial interest includes situations where a DOT employee's spouse has a financial interest in a business, firm, or enterprise. A financial interest means that the employee or his spouse is an owner, member, partner, or shareholder in a non-publicly traded entity. Disclosure of such outside business interests to the DOT Human Resources Administrator shall *not* constitute approval of the outside business interest under this Policy or the Code of Ethics for Public Officials. DOT employees shall not have a financial interest in any business, firm, or enterprise which will either impair their independence of judgment with regard to their State duties or require or induce them to disclose confidential information gained through their State duties**.** Inquiries concerning the propriety of a DOT employee's outside business interests shall be directed to the Office of State Ethics to assure compliance with the Code of Ethics for Public Officials.

9. ***Contracts With the State***: DOT employees, their immediate family members, and/or a business with which a DOT employee is associated, may not enter into a contract with the State, other than pursuant to a court appointment, valued at $100 or more unless the contract has been awarded through an open and public process.

10. ***Sanctioning Another Person's Ethics Violation*****:** No DOT official or employee shall counsel, authorize, or otherwise sanction action that violates any provision of the Code of Ethics.

11. ***Certain Persons Have an Obligation to Report Ethics Violations:*** If the DOT Commissioner, Deputy Commissioner, or "person in charge of State agency procurement" and contracting has reasonable cause to believe that a person has violated the Code of Ethics or any law or regulation concerning ethics in State contracting, he/she *must* report such belief to the Office of State Ethics. All DOT employees are encouraged to disclose waste, fraud, abuse, and corruption about which they become aware to the appropriate authority (see also Policy Statement EX.O.-23 dated March 31, 2004), including, but not limited to, their immediate supervisor or a superior of their immediate supervisor, the DOT Office of Management Services, the Ethics Compliance Officer, the Auditors of Public Accounts, the Office of the Attorney General, or the Office of the Chief State's Attorney.

12. ***Post-State Employment Restrictions:*** In addition to the above-stated policies of the Department, DOT employees are advised that the Code of Ethics for Public Officials bars certain conduct by State employees ***after they leave State service. Upon leaving State service:***

    - ***Confidential Information***: DOT employees must never disclose or use confidential information gained in State service for the financial benefit of any person.

    - ***Prohibited Representation***: DOT employees must *never* represent anyone (other than the State) concerning any "particular matter" in which they participated personally and substantially while in State service and in which the State has a substantial interest.

      DOT employees also must not, for one year after leaving State service, represent anyone other than the State for compensation before the DOT concerning a matter in which the State has a substantial interest. In this context, the term "represent" has been very broadly defined. Therefore, any former DOT employee contemplating post-State employment work that might involve interaction with any bureau of DOT (or any Board or Commission administratively under the DOT) within

their first year after leaving State employment should contact the DOT Ethics Compliance Officer and/or the Office of State Ethics.

- ***Employment With State Vendors:*** DOT employees who participated substantially in, or supervised, the negotiation or award of a State contract valued at $50,000 or more must not accept employment with a party to the contract (other than the State) for a period of one year after resigning from State service, if the resignation occurs within one year after the contract was signed.

13. ***Ethical Considerations Concerning Bidding and State Contracts:*** DOT employees also should be aware of various provisions of Part IV of the Code of Ethics that affect any person or firm who: (1) is, or is seeking to be, prequalified by DAS under Conn. Gen. Stat. §4a-100; (2) is a party to a large State construction or procurement contract, or seeking to enter into such a contract, with a State agency; or (3) is a party to a consultant services contract, or seeking to enter into such a contract, with a State agency. These persons or firms shall not:

    - With the intent to obtain a competitive advantage over other bidders, solicit any information from an employee or official that the contractor knows is not and will not be available to other bidders for a large State construction or procurement contract that the contractor is seeking;

    - Intentionally, willfully, or with reckless disregard for the truth, charge a State agency for work not performed or goods not provided, including submitting meritless change orders in bad faith with the sole intention of increasing the contract price, as well as falsifying invoices or bills or charging unreasonable and unsubstantiated rates for services or goods to a State agency; and

    - Intentionally or willfully violate or attempt to circumvent State competitive bidding and ethics laws.

    Firms or persons that violate the above provisions may be deemed a nonresponsible bidder by the DOT.

    In addition, no person with whom a State agency has contracted to provide consulting services to plan specifications for any contract, and no business with which such person is associated, may serve as a consultant to any person seeking to obtain such contract, serve as a contractor for such contract, or serve as a subcontractor or consultant to the person awarded such contract.

    DOT employees who believe that a contractor or consultant may be in violation of any of these provisions should bring it to the attention of their manager.

Training for DOT Employees

A copy of this policy will be posted throughout the Department, and provided to each employee either in hard copy or by e-mail. As set forth above, State law requires that certain employees involved in contractor/consultant/vendor selection, evaluation, or supervision must undergo annual ethics training coordinated or provided by the Ethics Compliance Officer. If you believe your duties meet these criteria, you should notify your Bureau Chief to facilitate compilation of a training schedule. In addition, the DOT Ethics Compliance Officer can arrange for periodic ethics training provided by the Office of State Ethics. Finally, the Department will make available, on its web site or otherwise, a copy of this policy to all vendors, contractors, and other business entities doing business with the Department.

Important Ethics Reference Materials

It is strongly recommended that every DOT employee read and review the following:

- Code of Ethics for Public Officials, Chapter 10, Part 1, Conn. General Statutes Sections 1-79 through 1-89a found at: www.ct.gov/ethics/site/default.asp
- Ethics Regulations Sections 1-81-14 through 1-81-38, found at: www.ct.gov/ethics/site/default.asp
- The Office of State Ethics web site includes summaries and the full text of formal ethics advisory opinions interpreting the Code of Ethics, as well as summaries of previous enforcement actions: www.ct.gov/ethics/site/default.asp. DOT employees are strongly encouraged to contact the Department's Ethics Compliance Officer or her designee, or the Office of State Ethics with any questions or concerns they may have.

(This Policy Statement supersedes Policy Statement No. F&A-10 dated January 6, 2006)

Ralph J. Carpenter
COMMISSIONER

Attachment

List 1 and List 3
(Managers and supervisors are requested to distribute a copy of this Policy Statement to all employees under their supervision.)

cc: Office of the Governor, Department of Administrative Services, Office of State Ethics

Emp&discForm 5/07

Department of Transportation
Employment & Outside Business
Disclosure Form

In accordance with Department of Transportation (Department) Policy Statement No. F&A-10, Code of Ethics Policy, I am hereby advising the Department that in addition to my current DOT position, I have other employment and/or a direct or indirect financial interest in an outside business as follows:

1. Full name of outside employer, or entity in which I or my spouse have a financial interest (e.g., ownership or member/partner):
_____

2. Location of Employer/Entity disclosed above: _____

3. Nature of my/my spouse's relationship to employer/entity disclosed above (check at least one):
_____ Employee or Independent Contractor (circle one)
_____ Owner/Member/Partner/etc.
_____ Family Member of Owner/Member/Partner/etc.

4. State agency(ies) with which above employer/entity is doing business or seeking Business (write "N/A" if not applicable): _____

5. Job Title at Outside Employer: _____

6. Job Responsibilities at Outside Employer: _____
_____
_____

7. Current State Title: _____

8. Current State Job Responsibilities: _____
_____
_____

9. Name/Title of Current State Supervisor: _____

I understand that the filing of this Disclosure with the DOT Human Resources Administrator does not relieve me of any obligations I have to comply with the Code of Ethics for Public Officials, and does not constitute approval of my outside employment and/or financial interests under the Code of Ethics for Public Officials. *Employees engaging in outside employment are strongly urged to seek written approval of their outside employment from the Office of State Ethics, 20 Trinity Street, Hartford, CT 06106.* I also understand that if either my State or outside employment/financial interest changes in location or function I am required to notify the Department immediately.

Signed: _____ Date: _____
Printed Name: _____

D.B.E. SUBCONTRACTORS AND MATERIAL SUPPLIERS OR MANUFACTURERS

January 2013

I. ABBREVIATIONS AND DEFINITIONS AS USED IN THIS SPECIAL PROVISION

A. *CTDOT* means the Connecticut Department of Transportation.

B. *USDOT* means the U.S. Department of Transportation, including the Office of the Secretary, the Federal Highway Administration ("FHWA"), the Federal Transit Administration ("FTA"), and the Federal Aviation Administration ("FAA").

C. *Broker* means a party acting as an agent for others in negotiating Contracts, Agreements, purchases, sales, etc., in return for a fee or commission.

D. *Contract, Agreement or Subcontract* means a legally binding relationship obligating a seller to furnish supplies or services (including but not limited to, construction and professional services) and the buyer to pay for them. For the purposes of this provision, a lease for equipment or products is also considered to be a Contract.

E. *Contractor* means a consultant, second party or any other entity under Contract to do business with CTDOT or, as the context may require, with another Contractor.

F. *Disadvantaged Business Enterprise ("DBE")* means a for profit small business concern:

1. That is at least 51 percent owned by one or more individuals who are both socially and economically disadvantaged or, in the case of a corporation, in which 51 percent of the stock is owned by one or more such individuals; and

2. Whose management and daily business operations are controlled by one or more of the socially and economically disadvantaged individuals who own it; and

3. Certified by CTDOT under Title 49 of the Code of Federal Regulations, Part 26, (Title 49 CFR Part 23 of the Code of Federal Regulations for Participation of Disadvantaged Business Enterprise in Airport Concessions)

G. *USDOT-assisted Contract* means any Contract between CTDOT and a Contractor (at any tier) funded in whole or in part with USDOT financial assistance.

H. *Good Faith Efforts ("GFE")* means all necessary and reasonable steps to achieve a DBE goal or other requirement which by their scope, intensity, and appropriateness to the objective, can reasonably be expected to fulfill the program requirement.

I. *Small Business Concern* means, with respect to firms seeking to participate as DBEs in USDOT-assisted Contracts, a small business concern as defined pursuant to Section 3 of the Small Business Act and Small Business Administration ("SBA") regulations implementing it (13 CFR Part 121) that also does not exceed the cap on average annual gross receipts in 49 CFR Part 26, Section 26.65(b).

J. *Socially and Economically Disadvantaged Individual* means any individual who is a citizen (or lawfully admitted permanent resident) of the United States and who is:

1. Any individual who CTDOT finds, on a case-by-case basis, to be a socially and economically disadvantaged individual.

2. Any individuals in the following groups, members of which are rebuttably presumed to be socially and economically disadvantaged:

    - "Black Americans", which includes persons having origins in any of the Black racial groups of Africa;
    - "Hispanic Americans", which includes persons of Mexican, Puerto Rican, Cuban, Dominican, Central or South American, or other Spanish or Portuguese culture or origin, regardless of race;
    - "Native Americans", which includes persons who are American Indians, Eskimos, Aleuts, or Native Hawaiians.
    - "Asian-Pacific Americans", which includes persons whose origins are from Japan, China, Taiwan, Korea, Burma (Myanmar), Vietnam, Laos, Cambodia (Kampuchea), Thailand, Malaysia, Indonesia, the Philippines, Brunei, Samoa, Guam, the U.S. Trust Territories of the Pacific Islands (Republic of Palau), the Commonwealth of the Northern Marianas Islands, Macao, Fiji, Tonga, Kiribati, Juvalu, Nauru, or Federated States of Micronesia;
    - "Subcontinent Asian Americans", which includes persons whose origins are from India, Pakistan, Bangladesh, Bhutan, the Maldives Islands, Nepal or Sri Lanka;
    - Women;
    - Any additional groups whose members are designated as socially and economically disadvantaged by the SBA, at such time as the SBA designation becomes effective.

K. *Commercially Useful Function ("CUF")* means the DBE is responsible for the execution of the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved with its own forces and equipment. The DBE must be responsible for procuring, determining quantity, negotiating price, determining quality and paying for all materials (where applicable) associated with their work. The DBE must also perform at least 30% of the total cost of its contract with its own workforce.

II. ADMINISTRATIVE REQUIREMENTS

General Requirements

A DBE goal percentage equaling **Zero (0%)** of the Contract value has been established for this Contract. This DBE goal percentage will be applied to the final Contract value to ultimately determine the required DBE goal. If additional work is required, DBE firms should be provided the appropriate opportunities to achieve the required DBE goal.

In order to receive credit toward the Contract DBE goal, the firms utilized as DBE subcontractors or suppliers must be certified as DBEs in the type of work to be counted for credit by CTDOT's Office of Contract Compliance prior to the date of the execution of the subcontract. Neither CTDOT nor the State of Connecticut's Unified Certification Program (UCP) makes any representation as to any DBE's technical or financial ability to perform the work. Prime contractors are solely responsible for performing due diligence in hiring DBE subcontractors.

All DBEs shall perform a CUF for the work that is assigned to them. The Contractor shall monitor and ensure that the DBE is in compliance with this requirement. The Connecticut DBE UPC Directory of certified firms can be found on the CTDOT website http://www.ct.gov/dot. The directory lists certified DBE firms with a description of services that they are certified to perform. Only work identified in this listing may be counted towards the project's DBE goal. A DBE firm may request to have services added at any time by contacting CTDOT's Office of Contract Compliance. No credit shall be counted for any DBE firm found not to be performing a CUF.

Once a Contract is awarded, all DBEs that were listed on the pre-award DBE commitment document must be utilized. The Contractor is obligated to provide the value and items of the work originally established in the pre-award documentation to the DBE firms listed in the pre-award documentation. Any modifications to the pre-award commitment must follow the procedure established in Section II-C.

The Contractor shall designate a liaison officer who will administer the Contractor's DBE program. Upon execution of this Contract, the name of the liaison officer shall be furnished in writing to CTDOT's unit administering the Contract, CTDOT's Office of Contract Compliance and CTDOT's Office of Construction ("OOC"). Contact information for the designated liaison officer shall be furnished no later than the scheduled date for the pre-construction meeting.

The Contractor shall submit a bi-monthly report to the appropriate CTDOT unit administering the Contract. This report shall indicate what work has been performed to date, with the dollars paid and percentage of DBE goal completed.

Verified payments made to DBEs shall be included in this bi-monthly report. A sample form is included on the CTDOT website.

In addition, the report shall include:

1. A projected time frame of when the remaining work is to be completed for each DBE.

2. A statement by the Contractor either confirming that the approved DBEs are on schedule to meet the Contract goal, or that the Contractor is actively pursuing a GFE.

3. If retainage is specified in the Contract specifications, then a statement of certification that the subcontractors' retainage is being released in accordance with 1.08.01 (Revised or supplemented).

Failure by the Contractor to provide the required reports may result in CTDOT withholding an amount equal to one percent (1%) of the monthly estimate until the required documentation is received.

The Contractor shall receive DBE credit when a DBE, or any combination of DBEs, perform work under the Contract in accordance with this specification.

Only work actually performed by and/or services provided by DBEs which are certified for such work and/or services, as verified by CTDOT, can be counted toward the DBE goal. Supplies and equipment a DBE purchases or leases from the Contractor or its affiliate cannot be counted toward the goal.

Monitoring of the CUF will occur by CTDOT throughout the life of the project. If it is unclear that the DBE is performing the work specified in its subcontract with the prime Contractor, further review may be required. If it is determined that the DBE is not performing a CUF, then the work performed by that DBE will not be counted towards the DBE goal percentage.

B. Subcontract Requirements

The Contractor shall submit to CTDOT's OOC all requests for subcontractor approvals on the standard CLA-12 forms provided by CTDOT. The dollar amount and items of work identified on the CLA-12 form must, at minimum, equal the dollar value submitted in the pre-award commitment. CLA-12 forms can be found at http://www.ct.gov/dot/construction under the "Subcontractor Approval" section. All DBE subcontractors must be identified on the CLA-12 form, regardless of whether they are being utilized to meet a Contract goal percentage. A copy of the legal Contract between the Contractor and the DBE subcontractor/supplier, a copy of the Title VI Contractor Assurances and a copy of the Required Contract Provision for Federal Aid Construction Contracts (Form FHWA-1273) (Federal Highway Administration projects only) must be submitted along with a request for subcontractor approval. These attachments cannot be substituted by reference.

If retainage is specified in the Contract specifications, then the subcontract agreement must contain a prompt payment mechanism that acts in accordance with Article 1.08.01 (Revised or supplemented).

If the Contract specifications do not contain a retainage clause, the Contractor shall not include a retainage clause in any subcontract agreement, and in this case, if a Contractor does include a retainage clause, it shall be deemed unenforceable.

In addition, the following documents are to be included with the CLA-12, if applicable:

- An explanation indicating who will purchase material.
- A statement explaining any method or arrangement for utilization of the Contractor's equipment.

The subcontract must show items of work to be performed, unit prices and, if a partial item, the work involved by all parties. If the subcontract items of work or unit prices are modified, the procedure established in Section II-C must be followed.

Should a DBE subcontractor further sublet items of work assigned to it, only lower tier subcontractors who are certified as a DBE firm will be counted toward the DBE goal. If the lower tier subcontractor is a non-DBE firm, the value of the work performed by that firm will not be counted as credit toward the DBE goal.

The use of joint checks between a DBE firm and the Contractor is acceptable, provided that written approval is received from the OOC prior to the issuance of any joint check. Should it become necessary to issue a joint check between the DBE firm and the Contractor to purchase materials, the DBE firm must be responsible for negotiating the cost, determining the quality and quantity, ordering the material and installing (where applicable), and administering the payment to the supplier. The Contractor should not make payment directly to suppliers.

Each subcontract the Contractor signs with a subcontractor must contain the following assurance:

"The subcontractor/supplier/manufacturer shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor/subcontractor/supplier/manufacturer to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate."

C. Modification to Pre-Award Commitment

Contractors may not terminate for convenience any DBE subcontractor or supplier that was listed on the pre-award DBE commitment without prior written approval of the OOC. This includes, but is not limited to, instances in which a Contractor seeks to perform work originally designated for a DBE subcontractor with its own forces or those of an affiliate, a non-DBE firm, or with another DBE firm. Prior to approval, the Contractor must demonstrate to the satisfaction of the OOC, that it has good cause, as found in 49CFR Part 26.53 (f)(3), for termination of the DBE firm.

Before transmitting its request for approval to terminate pre-award DBE firms to the OOC, the Contractor must give written notice to the DBE subcontractor and include a copy to the OOC of its notice to terminate and/or substitute, and the reason for the notice.

The Contractor must provide five (5) days for the affected DBE firm to respond. This affords the DBE firm the opportunity to advise the OOC and the Contractor of any reasons why it objects to the termination of its subcontract and why the OOC should not approve the Contractor's action.

Once the Contract is awarded, should there be any amendments or modifications of the approved pre-award DBE submission other than termination of a DBE firm, the Contractor shall follow the procedure below that best meets the criteria associated with the reason for modification:

1. If the change is due to a scope of work revision or non-routine quantity revision by CTDOT, the Contractor must notify CTDOT's OOC in writing or via electronic mail that their DBE participation on the project may be impacted as soon as they are aware of the change. In this case, a release of work from the DBE firm may not be required; however the Contractor must concurrently notify the DBE firm in writing, and copy the OOC for inclusion in the project DBE file. This does not relieve the Contractor of its obligation to meet the Contract specified DBE goal, or of any other responsibility found in this specification.

2. If the change is due to a factor other than a CTDOT directive, a request for approval in writing or via electronic mail of the modification from the OOC must be submitted, along with an explanation of the change(s), prior to the commencement of work. The Contractor must also obtain a letter of release from the originally named DBE indicating their concurrence with the change, and the reason(s) for their inability to perform the work. In the event a release cannot be obtained, the Contractor must document all efforts made to obtain it.

3. In the event a DBE firm that was listed in the pre-award documents is **unable** or **unwilling** to perform the work assigned, the Contractor shall:

    - Notify the OOC Division Chief immediately and make efforts to obtain a release of work from the firm.

    - Submit documentation that will provide a basis for the change to the OOC for review and approval prior to the implementation of the change.

    - Use the DBE Directory to identify and contact firms certified to perform the type of work that was assigned to the unable or unwilling DBE firm. The Contractor should also contact CTDOT's Office of Contract Compliance for assistance in locating additional DBE firms to the extent needed to meet the contract goal.

Should a DBE subcontractor be terminated or fail to complete work on the Contract for any reason, the Contractor must make a GFE to find another DBE subcontractor to substitute for the original

DBE. The DBE replacement shall be given every opportunity to perform at least the same amount of work under the Contract as the original DBE subcontractor.

If the Contractor is unable to find a DBE replacement:

- The Contractor should identify other contracting opportunities and solicit DBE firms in an effort to meet the Contract DBE goal requirement, if necessary, and provide documentation to support a GFE. (Refer to GFE in Section III.)

- The Contractor must demonstrate that the originally named DBE, who is unable or unwilling to perform the work assigned, is in default of its subcontract, or identify other issues that affected the DBE firm's ability to perform the assigned work. **The Contractor's ability to negotiate a more advantageous agreement with another subcontractor is not a valid basis for change.**

III. GOOD FAITH EFFORTS

The DBE goal is **NOT** reduced or waived for projects where the Contractor receives a Pre-Award GFE determination from the Office of Contract Compliance prior to the award of the Contract. It remains the responsibility of the Contractor to make a continuing GFE to achieve the specified Contract DBE goal. The Contractor shall pursue every available opportunity to obtain additional DBE firms and document all efforts made in such attempts.

At the completion of all Contract work, the Contractor shall submit a final report to CTDOT`s unit administering the Contract indicating the work done by and the dollars paid to DBEs. Only verified payments made to DBEs performing a CUF will be counted towards the Contract goal.

Goal attainment is based on the total Contract value, which includes all construction orders created during the Contract. If the Contractor does not achieve the specified Contract goal for DBE participation or has not provided the value of work to the DBE firms originally committed to in the pre-award submission, the Contractor shall submit documentation to CTDOT`s unit administering the Contract detailing the GFE made during the performance of the Contract to satisfy the goal.

A GFE should consist of the following, where applicable (CTDOT reserves the right to request additional information):

1. A detailed statement of the efforts made to replace an unable or unwilling DBE firm, and a description of any additional subcontracting opportunities that were identified and offered to DBE firms in order to increase the likelihood of achieving the stated goal.

2. A detailed statement, including documentation of the efforts made to contact and solicit bids from certified DBEs, including the names, addresses, and telephone numbers of each DBE firm contacted; the date of contact and a description of the information provided to each DBE

regarding the scope of services and anticipated time schedule of work items proposed to be subcontracted and the response from firms contacted.

3. Provide a detailed explanation for each DBE that submitted a subcontract proposal which the Contractor considered to be unacceptable stating the reason(s) for this conclusion.

4. Provide documentation, if any, to support contacts made with CTDOT requesting assistance in satisfying the specified Contract goal.

5. Provide documentation of all other efforts undertaken by the Contractor to meet the defined goal. Additional documentation of efforts made to obtain DBE firms may include but will not be limited to:

    - Negotiations held in good faith with interested DBE firms, not rejecting them without sound reasons.
    - Written notice provided to a reasonable number of specific DBE firms in sufficient time to allow effective participation.
    - Those portions of work that could be performed by readily available DBE firms.

In instances where the Contractor can adequately document or substantiate its GFE and compliance with other DBE Program requirements, the Contractor will have satisfied the DBE requirement and no administrative remedies will be imposed.

IV. PROJECT COMPLETION

At the completion of all Contract work, the Contractor shall:

1. Submit a final report to CTDOT`s unit administering the Contract indicating the work done by, and the dollars paid to DBEs.

2. Submit verified payments made to all DBE subcontractors for the work that was completed.

3. Submit documentation detailing any changes to the DBE pre-award subcontractors that have not met the original DBE pre-award commitment, including copies of the Department's approvals of those changes.

4. Retain all records for a period of three (3) years following acceptance by CTDOT of the Contract and those records shall be available at reasonable times and places for inspection by authorized representatives of CTDOT and Federal agencies. If any litigation, claim, or audit is started before the expiration of the three (3) year period, the records shall be retained until all litigation, claims, or audit findings involving the records are resolved.

If the Contractor does not achieve the specified Contract goal for DBE participation in addition to meeting the dollar value committed to the DBE subcontractors identified in the pre-award commitment, the Contractor shall submit documentation to CTDOT`s unit administering the Contract detailing the GFE made during the performance of the Contract to satisfy the goal.

V. SHORTFALLS

A. Failure to meet DBE goals

As specified in (II-A) above, attainment of the Contract DBE goal is based on the final Contract value. The Contractor is expected to achieve the amount of DBE participation originally committed to at the time of award; however, additional efforts must be made to provide opportunities to DBE firms in the event a Contract's original value is increased during the life of the Contract.

The Contractor is expected to utilize the DBE subcontractors originally committed in the DBE pre-award documentation for the work and dollar value that was originally assigned.

If a DBE is terminated or is unable or unwilling to complete its work on a Contract, the Contractor shall make a GFE to replace that DBE with another certified DBE to meet the Contract goal.

The Contractor shall immediately notify the OOC of the DBE's inability or unwillingness to perform, and provide reasonable documentation and make efforts to obtain a release of work from the firm.

If the Contractor is unable to find a DBE replacement, then the Contractor should identify other contracting opportunities and solicit DBE firms in an effort to meet the Contract DBE goal requirement, if necessary, and provide documentation to support a GFE.

When a DBE is unable or unwilling to perform, or is terminated for just cause, the Contractor shall make a GFE to find other DBE opportunities to increase DBE participation to the extent necessary to at least satisfy the Contract goal.

For any DBE pre-award subcontractor that has been released appropriately from the project, no remedy will be assessed, provided that the Contractor has met the criteria described in Section II-C.

B. Administrative Remedies for Non-Compliance:

In cases where the Contractor has failed to meet the Contract specified DBE goal or the DBE pre-award commitment, and where no GFE has been demonstrated, then one or more of the following administrative remedies will be applied:

1. A reduction in Contract payments to the Contractor as determined by CTDOT, not to exceed the shortfall amount of the **DBE goal**. The maximum shortfall will be calculated by multiplying the Contract DBE goal (adjusted by any applicable GFE) by the final Contract value, and subtracting any verified final payments made to DBE firms by the Contractor.

2. A reduction in Contract payments to the Contractor determined by CTDOT, not to exceed the shortfall amount of the **pre-award commitment**. The maximum shortfall will be calculated by subtracting any verified final payments made by the Contractor to each DBE subcontractor from the amount originally committed to that subcontractor in the pre-award commitment.

3. A reduction in Contract payments to the Contractor determined by CTDOT for any pre-award DBE subcontractor who has not obtained the dollar value of work identified in the DBE pre-award commitment and has not followed the requirements of Section II-C or for any DBE firm submitted for DBE credit that has not performed a CUF.

4. The Contractor being required to submit a written DBE Program Corrective Action Plan to CTDOT for review and approval, which is aimed at ensuring compliance on future projects.

5. The Contractor being required to attend a Non-Responsibility Meeting on the next contract where it is the apparent low bidder.

6. The Contractor being suspended from bidding on contracts for a period not to exceed six (6) months.

VI. CLASSIFICATIONS OTHER THAN SUBCONTRACTORS

A. Material Manufacturers

Credit for DBE manufacturers is 100% of the value of the manufactured product. A manufacturer is a firm that operates or maintains a factory or establishment that produces on the premises the materials or supplies obtained by the Contractor.
If the Contractor elects to utilize a DBE manufacturer to satisfy a portion of, or the entire specified DBE goal, the Contractor must provide the OOC with:

- Subcontractor Approval Form (CLA-12) indicating the firm designation,
- An executed “Affidavit for the Utilization of Material Suppliers or Manufacturers" (sample attached), and
- Substantiation of payments made to the supplier or manufacturer for materials used on the project.

B. Material Suppliers (Dealers)

Credit for DBE dealers/suppliers is limited to 60% of the value of the material to be supplied,

provided such material is obtained from an approved DBE dealer/supplier.

In order for a firm to be considered a regular dealer, the firm must own, operate, or maintain a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business. At least one of the following criteria must apply:

- To be a regular dealer, the firm must be an established, regular business that engages, as its principal business and under its own name, in the purchase and sale or lease of the products in question.
- A person may be a regular dealer in such bulk items as petroleum products, steel, cement, gravel, stone, or asphalt without owning, operating or maintaining a place of business if the person both owns and operates distribution equipment for the products. Any supplementing of the regular dealers' own distribution equipment shall be by long term lease agreement, and not on an ad hoc or contract to contract basis.
- Packagers, brokers, manufacturers' representatives, or other persons who arrange or expedite transactions are not regular dealers within the meaning of this paragraph.

If the Contractor elects to utilize a DBE supplier to satisfy a portion or the entire specified DBE goal, the Contractor must provide the OOC with:

- Subcontractor Approval Form (CLA-12) indicating the firm designation,
- An executed "Affidavit for the Utilization of Material Suppliers or Manufacturers" (sample attached), and
- Substantiation of payments made to the supplier or manufacturer for materials used on the project.

C. Brokering

- Brokering of work for DBE firms who have been listed by the Department as certified brokers is allowed. Credit for those firms shall be applied following the procedures in Section VI-D.

- Brokering of work by DBEs who have been approved to perform subcontract work with their own workforce and equipment is not allowed, and is a Contract violation.

- Firms involved in the brokering of work, whether they are DBEs and/or majority firms who engage in willful falsification, distortion or misrepresentation with respect to any facts related to the project shall be referred to the U.S. DOT, Office of the Inspector General for prosecution under Title 18, U.S. Code, Part I, Chapter 47, Section 1020.

D. Non-Manufacturing or Non-Supplier DBE Credit

Contractors may count towards their DBE goals the following expenditures with DBEs that are not manufacturers or suppliers:

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

- The fees charged only for delivery of materials and supplies required on a job site when the hauler, trucker, or delivery service is a DBE, and not the manufacturer, or regular dealer of the materials and supplies, and provided that the fees are determined by the OOC to be reasonable and not excessive as compared with fees customarily allowed for similar services.

- The fees or commissions charged for providing bonds or insurance specifically required for the performance of the Contract, provided that the fees or commissions are determined by CTDOT to be reasonable and not excessive as compared with fees customarily allowed for similar services.

E. Trucking

While technically still considered a subcontractor, the rules for counting credit for DBE trucking firms are as follows:

- The DBE must own and operate at least one fully licensed, insured, and operational truck used on the Contract.
- The DBE receives credit for the total value of the transportation services it provides on the Contract using trucks it owns, insures and operates using drivers it employs.
- The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the Contract.
- The DBE may lease trucks from a non-DBE firm; however the DBE may only receive credit for any fees or commissions received for arranging transportation services provided by the non-DBE firms. Additionally, the DBE firm must demonstrate that they are in full control of the trucking operation for which they are seeking credit.

VII. Suspected DBE Fraud

In appropriate cases, CTDOT will bring to the attention of the USDOT any appearance of false, fraudulent, or dishonest conduct in connection with the DBE program, so that USDOT can take the steps, e.g. referral to the Department of Justice for criminal prosecution, referral to USDOT Inspector General, action under suspension and debarment or Program Fraud and Civil Penalties rules provided in 49 CFR Part 31.

CONNECTICUT DEPARTMENT OF TRANSPORTATION
(OFFICE OF CONSTRUCTION)
BUREAU OF ENGINEERING AND CONSTRUCTION

This affidavit must be completed by the State Contractor's DBE notarized and attached to the contractor's request to utilize a DBE supplier or manufacturer as a credit towards its DBE contract requirements; failure to do so will result in not receiving credit towards the contract DBE requirement.

State Contract No.

Federal Aid Project No.

Description of Project

I, _____, acting in behalf of _____,
(Name of person signing Affidavit) (DBE person, firm, association or corporation)
of which I am the _____ certify and affirm that _____
(Title of Person) (DBE person, firm, association or corporation)
is a certified Connecticut Department of Transportation DBE. I further certify and affirm that I have read and understand 49 CFR, Sec. 26.55(e)(2), as the same may be revised.

I further certify and affirm that _____ will assume the actual and
(DBE person, firm, association or Corporation)
for the provision of the materials and/or supplies sought by _____.

If a manufacturer, I operate or maintain a factory or establishment that produces, on the premises, the materials, supplies, articles or equipment required under the contract an of the general character described by the specifications.

If a supplier, I perform a commercially useful function in the supply process. As a regular dealer, I, at a minimum, own and operate the distribution equipment for bulk items. Any supplementing of my distribution equipment shall be by long-term lease agreement, and not on an ad hoc or contract-by-contract basis.

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

(Name of Corporation or Firm)

(Signature & Title of Official making the Affidavit)

Subscribed and sworn to before me, this _____ day of _____ 20 _____.

Notary Public (Commissioner of the Superior Court)

My Commission Expires_____

CERTIFICATE OF CORPORATION

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

_____ _____
(Signature of Person Certifying) (Date)

ITEM #0101000A - ENVIRONMENTAL HEALTH AND SAFETY

Description

Under this Item, the Contractor shall establish protocols and provide procedures to protect the health and safety of its employees and subcontractors as related to the proposed intrusive construction activities performed within the Project Limits. Work under this Item consists of the development and implementation of a written Health and Safety Plan (HASP) that addresses the relative risk of exposure to potential hazards present within the Project Limits. The HASP shall establish health and safety protocols that address the relative risk of exposure to regulated substances in accordance with 29 CFR 1910.120 and 29 CFR 1926.65. Such protocols shall only address those concerns directly related to site conditions.

Note: The Engineer will prepare a site-specific HASP, which is compatible with the Contractor's HASP, and will be responsible for the health and safety of all of its Project Inspectors and Department employees.

Materials

The Contractor must provide chemical protective clothing (CPC) and personal protective equipment (PPE) as stipulated in the Contractor's HASP during the performance of work in areas identified as potentially posing a risk to worker health and safety for workers employed by the Contractor and all subcontractors.

Construction Methods

A. Existing Information

The Contractor shall utilize all available information and existing records and data pertaining to chemical and physical hazards associated with any of the regulated substances discussed in the "Notice to Contractor – Environmental Investigations" to develop the HASP.

B. General

The requirements set forth herein pertain to the provision of workers' health and safety as it relates to proposed Project activities when performed in the presence of hazardous or regulated materials or otherwise environmentally sensitive conditions. THE PROVISION OF WORKER HEALTH AND SAFETY PROTOCOLS, WHICH ADDRESS POTENTIAL AND/OR ACTUAL RISK OF EXPOSURE TO SITE-SPECIFIC HAZARDS POSED TO CONTRACTOR EMPLOYEES, IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.

The Contractor shall be responsible for the development, implementation and oversight of the HASP throughout the performance of intrusive work within the Project Limits, as identified in

the Contract Documents, and in other areas identified by the Engineer or by the HASP where site conditions may pose a risk to worker health and safety and/or the environment. **No physical aspects of the work within the Project Limits shall begin until the HASP is reviewed by the Engineer and is determined to meet the requirements of the specifications. However, the Contract time, in accordance with Article 1.03.08, will begin on the date stipulated in the Notice to Proceed.**

C. Regulatory Requirements

All construction related activities performed by the Contractor within the Project Limits where site conditions may pose a risk to worker health and safety and/or the environment shall be performed in conformance with 29 CFR 1926, Safety and Health Regulations for Construction and 29 CFR 1910, Safety and Health Regulations for General Industry. Conformance to 29 CFR 1910.120, Hazardous Waste Site Operations and Emergency Response (HAZWOPER) may also be required, where appropriate.

D. Submittals

An electronic copy of the HASP shall be submitted to the Engineer within four (4) weeks after the Award of Contract or four (4) weeks prior to the start of any intrusive work within the Project Limits, whichever is first, but not before the Award of the Contract.

The HASP shall be developed by a qualified person designated by the Contractor. This qualified person shall be a Certified Industrial Hygienist (CIH), Certified Hazardous Material Manager (CHMM), or a Certified Safety Professional (CSP). He/she shall have review and approval authority over the HASP and be identified as the Health and Safety Manager (HSM). The HASP shall bear the signature of said HSM indicating that the HASP meets the minimum requirements of 29 CFR 1910.120 and 29 CFR 1926.65.

The Engineer will review the HASP within four (4) weeks of submittal and provide written comments as to deficiencies in and/or exceptions to the plan, if any, to assure consistency with the specifications, applicable standards, policies and practices and appropriateness given potential or known site conditions. Items identified in the HASP which do not conform to the specifications will be brought to the attention of the Contractor, and the Contractor shall revise the HASP to correct the deficiencies and resubmit it to the Engineer for determination of compliance with this Item. The Contractor shall not be allowed to commence intrusive work activities within the Project Limits, as shown on the Plans, or where site conditions exist which may pose a risk to worker health and safety and/or the environment, until the HASP has been reviewed and determined to conform to the requirements of this specification by the Engineer. **No claim for delay in the progress of work will be considered for the Contractor's failure to submit a HASP that conforms to the requirements of the Contract.**

E. HASP Provisions

1. General Requirements

The Contractor shall prepare a HASP covering all Project site work regulated by 29 CFR 1910.120(b)/1926.65(b) to be performed by the Contractor and all subcontractors under this Contract. The HASP shall establish in detail, the protocols necessary for the recognition, evaluation, and control of all hazards associated with each task performed under this Contract. The HASP shall address site-specific safety and health hazards of each phase of site operation and include the requirements and procedures for employee protection. The level of detail provided in the HASP shall be tailored to the type of work, complexity of operations to be performed, and hazards anticipated. Details about some activities may not be available when the initial HASP is prepared and submitted. Therefore, the HASP shall address, in as much detail as possible, all anticipated tasks, their related hazards and anticipated control measures.

The HASP shall interface with the Contractor's Safety and Health Program. Any portions of the Safety and Health Program that are referenced in the HASP shall be included as appendices to the HASP. All topics regulated by the 29 CFR 1910.120(b) (4) and those listed below shall be addressed in the HASP. **Where the use of a specific topic is not applicable to the Project, the HASP shall include a statement to justify its omission or reduced level of detail and establish that adequate consideration was given to that topic.**

2. Elements

a. Site Description and Contamination Characterization

The Contractor shall provide a site description and contaminant characterization in the HASP that meets the requirements of 29 CFR 1910.120/1926.65.

b. Safety and Health Risk Analysis/Activity Hazard Analysis

The HASP shall address the safety and health hazards on this site for every operation to be performed. The Contractor shall review existing records and data to identify potential chemical and physical hazards associated with the site and shall evaluate their impact on field operations. Sources, concentrations (if known), potential exposure pathways, and other factors as noted in CFR 1910.120/126.65, paragraph (c)(7) employed to assess risk shall be described. The Contractor shall develop and justify action levels for implementation of engineering controls and personal protective equipment upgrades and downgrades for controlling worker exposure to the identified hazards. If there is no permissible exposure limit (PEL) or published exposure level for an identified hazard, available information from other published studies may be used as guidance. Any modification of an established PEL must be fully documented.

The HASP shall include a comprehensive section that discusses the tasks and objectives of the site operations and logistics and resources required to complete each task. The hazards associated with each task shall be identified. Hazard prevention techniques, procedures and/or equipment shall be identified to mitigate each of the hazards identified.

c. Staff Organization, Qualifications and Responsibilities

The HASP shall include a list of personnel expected to be engaged in site activities and certify that said personnel have completed the educational requirements stipulated in 29 CFR 1910.120 and 29 CFR 1926.65, are currently monitored under a medical surveillance program in compliance with those regulations, and that they are fit for work under "Level C" conditions.

The Contractor shall assign responsibilities for safety activities and procedures. An outline or flow chart of the safety chain of command shall be provided in the HASP. Qualifications, including education, experience, certifications, and training in safety and health for all personnel engaged in safety and health functions shall be documented in the HASP. Specific duties of each on-site team member should be identified.

The HASP shall also include the name and qualifications of the individual proposed to serve as Health and Safety Officer (HSO). The HSO shall have full authority to carry out and ensure compliance with the HASP. The Contractor shall provide a competent HSO on-site who is capable of identifying existing and potential hazards in the surroundings or working conditions which are unsanitary, hazardous or dangerous to employees and who has authorization to take prompt corrective measures to eliminate or control them. The qualifications of the HSO shall include completion of OSHA 40-hour HAZWOPER training, including current 8-hour refresher training, and OSHA 8-hour HAZWOPER Supervisor training; a minimum of one year of working experience with the regulated compounds that have been documented to exist within the Project Limits; a working knowledge of federal and state safety regulations; specialized training or documented experience (one year minimum) in personal and respiratory protective equipment program implementation; the proper use of air monitoring instruments, air sampling methods and procedures; and certification training in first aid and CPR by a recognized, approved organization such as the American Red Cross.

The primary duties of the HSO shall be those associated with worker health and safety. The Contractor's HSO responsibilities shall be detailed in the written HASP and shall include, but not be limited to, the following:

i. Directing and implementing the HASP;

ii. Ensuring that all Project personnel have been adequately trained in the recognition and avoidance of unsafe conditions, and the regulations applicable to the work environment to control or eliminate any hazards or other exposure to illness or

injury (29 CFR 1926.21). All personnel shall be adequately trained in procedures outlined in the Contractor's written HASP;

iii. Authorizing Stop Work Orders, which shall be executed upon the determination of an imminent health and safety concern;

iv. Contacting the Contractor's HSM and the Engineer immediately upon the issuance of a Stop Work order when the HSO has made the determination of an imminent health and safety concern;

v. Authorizing work to resume, upon approval from the Contractor's HSM;

vi. Directing activities, as defined in the Contractor's written HASP, during emergency situations; and

vii. Providing personal monitoring where applicable, and as identified in the HASP.

d. Employee Training Assignments

The Contractor shall develop a training program to inform employees, supplier's representatives, and official visitors of the special hazards and procedures (including PPE, its uses and inspections) to control these hazards during field operations. Official visitors include but are not limited to Federal Agency Representatives, State Agency Representatives, Municipal Agency Representatives, Contractors, subcontractors, etc. This program shall be consistent with the requirements of 29 CFR 1910.120 and 29 CFR 1926.65.

e. Personal Protective Equipment

The plan shall include the requirements and procedures for employee protection and should include a detailed section on respiratory protection. The Contractor shall describe in detail and provide appropriate PPE to ensure that workers are not exposed to levels greater than the action level for identified hazards for each operation stated for each work zone. The level of protection shall be specific for each operation and shall be in compliance with all requirements of 29 CFR 1910 and 29 CFR 1926. The Contractor shall provide, maintain, and properly dispose of all PPE.

f. Medical Surveillance Program

All on-site Contractor personnel engaged in 29 CFR 1910.120/1926.65 operations shall have medical examinations meeting the requirements of 29 CFR 1910.120(f) prior to commencement of work. The HASP shall include certification of medical evaluation and clearance by the physician for each employee engaged in 29 CFR 1910.120/1926.65 operations at the site.

g. Exposure Monitoring/Air Sampling Program

The Contractor shall submit an Air Monitoring Plan as part of the HASP, which is consistent with 29 CFR 1910.120, paragraphs (b)(4)(ii)(E), (c)(6), and (h). The Contractor shall identify specific air sampling equipment, locations, and frequencies in the air-monitoring plan. Air and exposure monitoring requirements shall be specified in the Contractor's HASP. The Contractor's CIH shall specify exposure monitoring/air sampling requirements after a careful review of the contaminants of concern and planned site activities.

h. Site Layout and Control

The HASP shall include a map, work zone delineation (support, contamination, reduction and exclusion), on/off-site communications, site access controls, and security (physical and procedural).

i. Communications

Written procedures for routine and emergency communications procedures shall be included in the Contractor's HASP.

j. Personal Hygiene, Personal Decontamination and Equipment Decontamination

Decontamination facilities and procedures for PPE, sampling equipment, and heavy equipment shall be discussed in detail in the HASP.

k. Emergency Equipment and First Aid Requirements

The Contractor shall provide appropriate emergency first aid kits and equipment suitable to treat exposure to the hazards identified, including chemical agents. The Contractor will provide personnel that have certified first aid/CPR training on-site at all times during site operations.

l. Emergency Response Plan and Spill Containment Program

The Contractor shall establish procedures in order to take emergency action in the event of immediate hazards (i.e., a chemical agent leak or spill, fire or personal injury). Personnel and facilities supplying support in emergency procedures will be identified. The emergency equipment to be present on-site and the Emergency Response Plan procedures, as required 29 CFR 1910.120, paragraph (1)(1)(ii), shall be specified in the Emergency Response Plan. The Emergency Response Plan shall be included as part of the HASP. This Emergency Response Plan shall include written directions to the closest hospital as well as a map showing the route to the hospital.

m. Logs, Reports and Record Keeping

The Contractor shall maintain safety inspections, logs, and reports, accident/incident reports, medical certifications, training logs, monitoring results, etc. All exposure and medical monitoring records are to be maintained according to 29 CFR 1910 and 29 CFR 1926. The format of these logs and reports shall be developed by the Contractor to include training logs, daily logs, weekly reports, safety meetings, medical surveillance records, and a phase-out report. These logs, records, and reports shall be maintained by the Contractor and be made available to the Engineer.

The Contractor shall immediately notify the Engineer of any accident/incident. Within two working days of any reportable accident, the Contractor shall complete and submit an accident report to the Engineer.

n. Confined Space Entry Procedures

Confined space entry procedures, both permit required and non-permit required, shall be discussed in detail.

o. Pre-Entry Briefings

The HASP shall provide for pre-entry briefings to be held prior to initiating any site activity and at such other times as necessary to ensure that employees are apprised of the HASP and that this plan is being followed.

p. Inspections/Audits

The HSM or HSO shall conduct inspections or audits to determine the effectiveness of the HASP. The Contractor shall correct any deficiencies in the effectiveness of the HASP.

F. HASP Implementation

The Contractor shall implement and maintain the HASP throughout the performance of work. In areas identified as having a potential risk to worker health and safety, and in any other areas deemed appropriate by the HSO, the Contractor shall be prepared to immediately implement the appropriate health and safety measures, including but not limited to the use of PPE, and engineering and administrative controls.

If the Engineer observes deficiencies in the Contractor's operations with respect to the HASP, they shall be assembled in a written field directive and given to the Contractor. The Contractor shall immediately correct the deficiencies and respond, in writing, as to how each was corrected. Failure to bring the work area(s) and implementation procedures into compliance will result in a Stop Work Order and a written directive to discuss appropriate resolution(s) to the matter. When the Contractor demonstrates compliance, the Engineer shall remove the Stop

Work Order. If a Stop Work Order has been issued for cause, no delay claims on the part of the Contractor will be honored.

Disposable CPC/PPE (i.e. disposable coveralls, gloves, etc.) that come in direct contact with hazardous or potentially hazardous material shall be placed into 55-gallon USDOT 17-H drums and disposed of in accordance with federal, state, and local regulations. The drums shall be temporarily staged and secured within a secure area of the Project, to be approved by the Engineer, for management by others.

G. HASP Revisions

The HASP shall be maintained on-site by the Contractor and shall be kept current with construction activities and site conditions under this Contract. The HASP shall be recognized as a flexible document which shall be subject to revisions and amendments, as required, in response to actual site conditions, changes in work methods, and/or alterations in the relative risk present. All changes and modifications shall be signed by the Contractor's HSM and shall require the review and acceptance by the Engineer prior to the implementation of such changes.

Should any unforeseen hazard become evident during the performance of the work, the HSO shall bring such hazard to the attention of the Contractor and the Engineer as soon as possible. In the interim, the Contractor shall take action, including Stop Work Orders and/or upgrading PPE as necessary, to re-establish and maintain safe working conditions and to safeguard on-site personnel, visitors, the public and the environment. The HASP shall then be revised/amended to reflect the changed condition.

Method of Measurement

A. Within thirty (30) calendar days of the award of the Contract, the Contractor shall submit to the Engineer for acceptance a breakdown of its lump sum bid price for this Item detailing:

1. The development costs associated with preparing the HASP in accordance with these Specifications.

2. The cost per month for the duration of the Project to implement the HASP and provide the services of the HSM and the HSO.

B. If the lump sum bid price breakdown is unacceptable to the Engineer, substantiation showing that the submitted costs are reasonable shall be required.

C. Upon acceptance of the payment schedule by the Engineer, payments for work performed will be made as follows:

1. The lump sum HASP development cost will be certified for payment.

2. The Contractor shall demonstrate to the Engineer monthly that the HASP has been kept current and is being implemented and the monthly cost will be certified for payment.

3. Any month where the HASP is found not to be current or is not being implemented, the monthly payment for the Environmental Health and Safety Item shall be deferred to the next monthly payment estimate. If the HASP is not current or being implemented for more than thirty calendar days, there will be no monthly payment.

4. Failure of the Contractor to implement the HASP in accordance with this Specification shall result in the withholding of all Contract payments.

Basis of Payment

This work shall be paid for at the Contract lump sum price for "ENVIRONMENTAL HEALTH AND SAFETY," which shall include all materials, tools, equipment and labor incidental to the completion of this Item for the duration of the Project to develop, maintain, revise, monitor and implement the HASP. Such costs include providing the services of the HSM and HSO, Contractor employee training, CPC, PPE, disposal of PPE and CPC, medical surveillance, decontamination facilities, engineering controls, monitoring and all other HASP protocols and procedures established to protect the Health and Safety for all on-site workers.

Pay Item	Pay Unit
Environmental Health and Safety	LS

ITEM #0101002A - CONFINED SPACE HEALTH AND SAFETY

Description:

The work required on the Rehabilitation of Bridge No. 06955, Glen St., will involve construction activities in areas that meet the definition of a "Confined Space" (CS) as defined in 29 CFR Part 1910.146. The types of activities as well as materials, products and procedures involved in this work will have the characteristics required to potentially create a hazardous atmosphere within the CS, thereby rendering the area a "Permit- Required Confined Space" (PRCS) work area as defined in 29 CFR 1910.146.

The Contractor shall prepare and administer a written program that protects the safety of its employees, subcontractors, the Engineer, and all other persons who may enter the PRCS work areas during the execution of the work. This program includes monitoring of air spaces in all PRCS work areas; providing proper training of all with access to the PRCS work area; and all required record keeping. The Contractor shall also furnish all required respiratory and other personal protective equipment (PPE) needed for its own employees and subcontractors including medical surveillance, testing, fit testing, and training of all individuals in its safe and proper usage.

The PRCS entry program that is developed and administered by the Contractor under this Item shall apply to ALL personnel who may have a need to access the PRCS work area as part of this Project. This includes all personnel directly or indirectly employed by the Contractor and the Engineer. The Contractor shall furnish all training required to implement the entry programs safely and effectively.

Applicable Regulations

At a minimum, the Contractor's work under this item shall comply with the following Federal Regulations:

1. 29 CFR Part 1910.1020 Access to Employee Exposure and Medical Records
2. 29 CFR Part 1910.134 Respiratory Protection
3. 29 CFR Part 1910.146 Permit-Required Confined Spaces
4. 29 CFR Part 1910.1000 Air Contaminants
5. 29 CFR Part 1926 Safety and Health Regulations for Construction
6. 29 CFR Part 1926.24 Fire Protection and Prevention
7. 29 CFR Part 1910, Subpart Q Welding, Cutting and Brazing

Construction Methods:

Within 30 calendar days of the award of this Contract, the Contractor shall submit to the Engineer a written Confined Space Health and Safety Plan (CS HASP) prepared by a Certified Industrial Hygienist (CIH) that fully describes the Contractor's proposed PRCS entry program required

under 29 CFR Part 1910.146. This document shall describe in detail all elements of the proposed entry program including the following:

1. Identification of potential hazards;
2. Measures to provide safe entrance and egress by authorized entrants;
3. Measures to prevent unauthorized entry;
4. Acceptable entry conditions;
5. Measures to isolate/restrict permit space;
6. Measures to provide ventilation required to eliminate or control atmospheric hazards;
7. Measures to monitor atmospheric conditions within the work space throughout construction;
8. Measures to monitor for flooding conditions within the culvert;
9. Measures to communicate with personnel working in the PRCS work area; provide description of how communication procedures will interface with hearing protection measures;
10. Description of method of work and equipment to be used for removal of soil/sediment and all other work inside the confined space, maintenance records of equipment shall also be furnished;
11. Required personal protective equipment;
12. Rescue and emergency equipment to be furnished;
13. Any other equipment to be furnished for safe entry into and rescue from PRCS work areas;
14. A description of how attendant(s) and entry supervisors will be deployed and their responsibilities, including a list of names and qualifications of all persons who are to have active roles as attendants, entry supervisors and air monitors;
15. Lighting equipment, including methods of grounding, to be furnished;
16. Measures for fire protection and prevention within the PRCS;
17. A description of any "Hot Work", i.e. welding, cutting or brazing to be performed within the PRCS, Hot Work Permit Requirements and safety measures to be taken;
18. Detailed procedures for:
    a. Furnishing or summoning rescue and emergency services, including the location of telephone number and directions to the nearest hospital,
        i. Contacting the local fire department and EMS service to determine their rescue capabilities that are available during those time periods when work in the PRCS will be taking place. Provide a written description of capabilities of outside rescue/emergency services that would be summoned in an emergency. Provide written concurrence from such fire department/EMS/outside rescue/emergency services that they will support any rescue operation in the PRCS.
        ii. In the event the local fire and EMS services are not equipped/trained to provide CS rescue, provide a description of the measures which will be used to perform CS rescue.

b. Rescuing entrants from PRCS, including non-entry rescue, retrieval systems or methods,
c. Providing necessary emergency services to rescued entrants,
d. Preventing unauthorized personnel from attempting a rescue.

19. Procedures for coordinating entry operations of all individuals who have reason to enter PRCS work areas, including employees of the Contractor, his subcontractor(s), the Engineer, and employees and agents of the Department;
20. Procedures for concluding the entry after entry operations are completed;
21. Procedures for reviewing the entry permit program and making revisions to correct deficiencies;
22. Proposed training programs(s) to be conducted by the Contractor that conform to 29 CFR Parts 19l0.l46(g) and 19l0.l34(k), provide current applicable certificates of training;
23. Proposed record keeping system.
24. The name and qualifications of the individual proposed to serve as Confined Space Health and Safety Officer (CSHSO). The CSHSO shall have full authority to carry out and ensure compliance with the CS HASP. The Contractor shall provide a competent CSHSO on-site who is capable of identifying existing and potential hazards in the surroundings or working conditions which are unsanitary, hazardous or dangerous to employees and who has authorization to take prompt corrective measures to eliminate or control them. The qualifications of the CSHSO shall include completion of OSHA 40-plan hour HAZWOPER training and 8-hour HAZWOPER supervisory training, completion of a Confined Space Entry Operations Program, a minimum of one year of working experience as a confined space entry supervisor, a working knowledge of Federal and State safety regulations; specialized training or documented experience (one year minimum) in personal and respiratory protective equipment program implementation; the proper use of air monitoring instruments, air sampling methods and procedures; and certification training in first aid and CPR by a recognized, approved organization such as the American Red Cross. Provide current certificates of training.

    The primary duties of the CSHSO shall be those associated with worker health and safety in a confined space. The Contractor's CSHSO responsibilities shall be detailed in the written CS HASP and shall include, but not be limited to the following:

    a. Directing and implementing the CS HASP;
    b. Ensuring that all project personnel have been adequately trained in the recognition and avoidance of unsafe conditions and the regulations applicable to the work environment to control or eliminate any hazards or other exposure to illness or injury. All personnel shall be adequately trained in procedures outlined in the Contractor's written CS HASP;
    c. Authorizing Stop Work Orders, which shall be executed upon the determination of an imminent health safety concern;
    d. Contacting the Contractor's CIH and the Engineer immediately upon the issuance of a Stop Work order when the CSHSO has made the determination of an imminent

health and safety concern;

e. Authorizing work to resume, upon approval from the Contractor's CIH;
f. Directing activities, as defined in the Contractor's written CS HASP, during emergency situations; and
g. Providing personal monitoring where applicable, as identified in the CS HASP.

The Engineer will review the Contractor's submittal within four weeks. If the Engineer requires any changes, the entire document shall be resubmitted with changes. All training shall be completed prior to commencing work within the PRCS work area.

No work shall be allowed within any area deemed by the Engineer to be a confined space until the Engineer has accepted the Contractor's written CS HASP.

Training

The Contractor shall be required to train all individuals who may have reason to enter a PRCS work area in all aspects of the permit entry program in a manner that complies with 29 CFR Part 1929.146 (g).

1. The duties and responsibilities of each individual;
2. Procedures to be followed when working the PRCS work areas, including anticipated hazards;
3. Air monitoring programs;
4. Proper communication procedures;
5. Early warning signs and symptoms;
6. Emergency rescue procedures, including basic first aid and cardiopulmonary resuscitation (CPR); and
7. Proper use of respiratory equipment (if required) including fit testing and medical surveillance, in accordance with the requirements of 29 CFR Part 1910.134.

The Contractor shall keep records of the date of each training session, the purpose of the session and a list of attendees.

Medical Monitoring

If in the event respirators are required, the Contractor shall have medical evaluations completed for all of its employees, including subcontractors, who may have reason to enter a PRCS work area in accordance with 1910.134(e) and any other applicable regulations prior to starting work in the PRCS.

Storage of Materials

The Contractor shall not store any raw materials, combustible materials or waste products within any confined space areas.

Method of Measurement:

Within thirty (30) calendar days of the award of the Contract, the Contractor shall submit to the Engineer for acceptance, a breakdown of the lump sum bid price for this item detailing:

1. The development costs associated with preparing the CS HASP in accordance with these Specifications;
2. The lump sum cost for employee training, including all Contractor employees, subcontractor employees, and up to ten (10) Department employees; and
3. The cost per month for the duration of the project to implement the CS HASP and provide services for the CIH and the CSHSO.

If the lump sum bid price breakdown is unacceptable to the Engineer, substantiation showing that the submitted costs are reasonable shall be required.

Upon acceptance of the payment schedule by the Engineer, payments for work performed will be made as follows:

1. The lump sum development cost will be certified for payment.
2. The lump sum cost for training will be certified for payment.
3. The Contractor shall demonstrate to the Engineer monthly that the CS HASP has been kept current and is being implemented and the monthly cost will be certified for payment.

Failure of the Contractor to implement the CS HASP in accordance with this Specification will result in the withholding of all Contract payments.

The Contractor shall submit a schedule of values for payment to the Department for review and Comment.

Basis of Payment:

This work will be paid for at the lump sum price for "Confined Space Health and Safety" which price shall include all materials, tools, equipment and labor incidental to the completion of this item for the duration of the project to develop, revise, monitor and implement the CS HASP. Such costs also include providing the services of the CIH and CSHSO; training; record keeping; atmospheric testing and monitoring; PPE and personal respiratory equipment; disposal of PPE; communication equipment; emergency medical and rescue equipment and personnel; medical surveillance; engineering controls; furnishing, operating and maintaining a ventilation system; and implementing all other CS HASP protocols and procedures established to protect the health and safety of on-site workers when working in the confined space.

Pay Item	Pay Unit
Confined Space Health and Safety	L.S.

ITEM #0202094A – EARTH EXCAVATION IN WETLANDS

Description: Work under this item shall include excavation of materials, as well as furnishing and installing free-draining material in accordance with details and limits shown on the plans.

Materials: Free-Draining Materials shall conform to Section M.02.07 of Standard Specifications.

Construction Methods: Material shall be removed by the contractor at locations shown on the plans in accordance with details shown on the plans, or as directed by the Engineer. Construction methods for excavation shall conform to Section 2.02 of Standard Specifications.

Method of Measurement: This work will be measured for payment by the cubic yards of material removed within the limits indicated on the plans and disposed of, complete and accepted. Free-Draining Material installed to replace the material removed shall be paid for under this item.

Basis of Payment: This work shall be paid for at the contract unit price per cubic yard for "Earth Excavation in Wetlands" complete, which shall include the excavation, grading, storing, delivering, hauling, and disposing of all materials, installation of free-draining material, and all equipment, materials, tools, labor, and work incidental thereto. There will be no additional payment for disposal of material.

Pay Item	Pay Unit
Earth Excavation in Wetlands	c.y.

ITEM #0202216A – EXCAVATION AND REUSE OF EXISTING CHANNEL BOTTOM MATERIAL

Description:

This work shall consist of excavating existing channel bottom material, herein referred to as natural streambed material, in areas where the channel bottom is to be disturbed and regraded to create a work area for a bridge, culvert, articulated concrete block placement, cofferdam installation, as shown on the plans or as directed by the Engineer. This item shall also include the stockpiling and protecting of the excavated material on-Site, subsequent placement, top dressing, or backfilling of the excavated stockpiled material within the watercourse, as shown on the plans or as directed by the Engineer.

Materials:

The material for this item shall consist of the existing naturally-formed rocks, cobbles, gravel, soils and clean natural sediments from within the channel.

Any material excavated from shale, ledge (bedrock) formations broken from larger boulders, or material with sharp acute edges will not be accepted. Broken concrete will not be accepted.

Geotextile: Geotextile shall be as specified in M.08.01-19 Geotextiles.

Construction Methods:

1. **Stockpiling of Material.** The Contractor shall submit for the Engineer's approval a proposed location for stockpiling material. The proposed location shall be upland where disruption to the stream channel or impact to wetland areas caused by moving the natural streambed material to and from the stockpile are minimized. The Contractor shall prepare the area approved by the Engineer, suitable in size and location for stockpiling the natural streambed material.

   The stockpile shall be located where it can remain undisturbed for the duration of the stream channel reconstruction or as shown on the plans and shall be protected using sedimentation control measures. The stockpile area shall be free of debris and cleaned adequately to prevent mixing with underlying soil or other materials, including the use of a separation barrier such as: Geotextile – (Separation Class 1), polyethylene sheeting, or similar. The stockpile area shall be adequately covered to protect the excavated natural streambed material from erosion by rain, wind, or other forces.

2. **Excavation of Natural Streambed Material.** The Contractor shall notify the Engineer 10 days in advance of excavation and placement of natural streambed material activities. The Engineer will identify the limits of the exposed natural streambed material during excavation under this item. The Engineer will identify the bottom limit of excavation, an amount up to but not exceeding 24 inches in depth, unless approved by the Engineer or their authorized delegate, based upon visual inspection of the natural streambed material. After the limits of excavation have been determined, the Contractor shall excavate the natural streambed material, separate from any other roadway, structure, channel or unsuitable material

excavation on Site. After the natural streambed material has been excavated, it shall be placed in the pre-approved stockpile area.

3. **Backfilling and Placement with Natural Streambed Material.** The stockpiled natural streambed material shall be placed as fill material as specified at the designated location(s) to the required thickness and elevation as shown on the plans or as directed by the Engineer or their authorized delegate. Placement methods likely to cause segregation of the various sizes of stone will not be permitted. Placement techniques shall prevent integration with non-natural streambed material and shall keep the natural streambed material relatively homogenous. The natural streambed material shall be placed in a manner that replicates the original condition of the channel prior to excavation and to the elevation as shown on the plans.

4. **Top Dressing with Natural Streambed Material.** The stockpiled natural streambed material shall be used as top dressing over riprap or other material as specified at the designated location(s) to the required thickness and elevation as shown on the plans or as directed by the Engineer or their authorized delegate. Placement techniques shall prevent integration with the non-natural streambed material and shall keep the natural streambed material relatively homogenous. The natural streambed material shall be placed in a manner that replicates the original condition of the channel prior to excavation and to the elevation as shown on the plans.

5. **Site Maintenance.** When backfilling, placing, or top dressing, the Contractor shall perform all containment, diversion, or other separation of the channel flow to minimize sediment transport downstream.

The disposal of any surplus and/or unsuitable material shall be in accordance with Article 1.09.04.

If the Engineer determines that there is an insufficient quantity of natural streambed material within the Project limits, the Contractor shall procure Supplemental Streambed Channel Material as specified under Item #0202217A.

If it is required for the Project to have washing-in of supplemental streambed material, the Contractor shall procure Washing-in Supplemental Streambed Material as specified under Item #0202218A.

The pre-approved stockpile areas shall be restored to the satisfaction of the Engineer. Work to restore/regrade stockpile areas will be paid for under the respective pay item(s).

Method of Measurement:

This work will be measured for payment by the number of cubic yards of natural streambed material excavated, stockpiled, maintained, installed, and accepted.

The Engineer will delineate the horizontal pay limit prior to the start of excavation. The vertical pay limit will be measured from the top of the existing channel bottom to the bottom of excavation required specifically for the stockpiling of channel bottom material.

Any material excavated beyond the approved horizontal pay limits or deeper than the depth of natural streambed material identified and approved by the Engineer will not be measured for payment under this item. Should such additional excavation be required to complete the Contract work, it will be measured for payment separately under the applicable pay item(s).

Basis of Payment:

Payment for this work will be made at the Contract unit price per cubic yard for "Excavation and Reuse of Existing Channel Bottom Material." The price shall include all materials, equipment, geotextile, tools, and labor incidental to the preparation of the stockpile area, excavation of natural streambed material, hauling of the material to the stockpile, and separation of any rock ledge or concrete debris, storing, and protecting (including sedimentation controls and covering) excavated material.

Payment for clearing and grubbing of the approved stockpile area will be included in the item "Clearing and Grubbing."

Payment for the removal and proper disposal of all surplus and/or unsuitable material will be in accordance with Article 1.09.04 – Extra and Cost-Plus Work.

Riprap or other specified material as shown on the plan will be paid for under the respective items.

Payment for supplemental streambed channel material will be included in the Item #0202217A "Supplemental Streambed Channel Material." If no item appears in the proposal, payment for the work will be in accordance with Article 1.09.04 – Extra and Cost-Plus Work.

Payment for washing in supplemental streambed channel material will be included in the Item #0202218A "Washing-in Supplemental Streambed Material." If no item appears in the proposal, payment for the work will be in accordance with Article 1.09.04 – Extra and Cost-Plus Work.

Payment for all containment, diversion or other separation of stream flow will be included in the item "Cofferdam and Dewatering" or special provision for "Handling Water."

Pay Item	**Pay Unit**
Excavation and Reuse of Existing Channel Bottom Material	c.y.

ITEM #0202218A – WASHING-IN SUPPLEMENTAL STREAMBED MATERIAL

Description:
This work shall consist of procuring, transporting, stockpiling, and washing in of supplemental streambed material, meeting the visual inspection requirements herein, along stream bank/channel improvement locations as shown on the plans or denoted on the Project's permit applications or as directed by the Engineer. This item shall also include any necessary temporary protection and stockpiling of the washing-in supplemental streambed material on–Site and subsequent washing in of supplemental streambed material for filling voids of riprap areas within the watercourse, as shown on the plans or as directed by the Engineer.

Materials:
When washing in of supplemental streambed material is required, the Contractor shall furnish the washing-in supplemental streambed material from an off-Site source. The supplemental streambed material for washing in must be visually inspected and accepted by the Engineer or their authorized delegate prior to being delivered to the Site. The Contractor shall notify the Engineer at least 10 working days in advance of the need for inspection of proposed off-Site material.

Geotextile: Geotextile shall be as specified in M.08.01-19 Geotextiles.

Construction Methods:

1. **Stockpiling of Material**. At the start of construction, the Contractor shall prepare an area, approved by the Engineer, suitable in size and location for stockpiling the supplemental streambed material for washing in. The Contractor shall select an upland location where disruption to the stream channel or impact to wetland areas caused by moving the supplemental streambed material to and from the stockpile are minimized during the placement of material. The stockpile shall be located where it can remain undisturbed for the duration of the stream channel construction and shall be protected using sedimentation control measures. The stockpile of streambed material for washing in shall be kept separate from other streambed material stockpile areas.

   The stockpile area shall be free of debris and cleaned adequately to prevent mixing with underlying soil or other materials, including the use of Geotextile – (Separation Class 1), or similar, if required. The stockpile area shall be adequately covered to protect the supplemental streambed material from erosion by rain or other forces. After supplemental streambed material for washing in has been placed in the stockpile area, no other excavated or off-Site material shall be placed in the stockpiles.

2. **Washing-in Supplemental Streambed Material.** If it is specified on the plans that washing-in supplemental streambed material for filling voids between riprap, or other material, is required, the Contractor must submit a Washing-In Supplemental Streambed Material Plan (SMP) for the Engineer's acceptance. The SMP shall include the following:

1) Provide a plan and section identifying the completed installation and preparation of riprap area to receive streambed material as shown on the plans or as directed by the Engineer or their authorized delegate.
2) Provide means and methods for washing in the supplemental streambed material. Means and methods shall include:
   a. Equipment used to place material.
   b. Washing in of material is to be done manually. Water from the watercourse shall be used to wash in the streambed material into the voided areas between the riprap or other material as specified on the plans. Washing in should be done carefully and at a controlled flow rate/velocity (approximately 4.0 gpm) to not cause erosion of adjacent erodible soils or cause turbid effluent to flow out of the riprap-filled area.
   c. Provide a Catalogue Cut of type and size of pump and hose proposed to be used.
   d. Measures to prevent turbidity from the work area. The Contractor may dewater the areas as defined under Article 2.04 Cofferdam and Dewatering or Item Handling Water.
3) Show calculations of estimated quantity of streambed material needed to wash in and fill riprap voids. The ratio of natural streambed material to riprap shall be approximately 1:3 (assuming 30% voids in the riprap).

Method for washing in supplemental streambed material:

Pre-blending riprap with the supplemental streambed material is prohibited. Placement and washing in of supplemental streambed material shall occur after all the riprap has been installed and shaped to final dimensions and grade as shown on the plans or as directed by the Engineer. Placement and washing in of supplemental streambed material must occur within a confined area.

1) Initially place approximately 12-inch lift of the washing-in streambed material over the riprap. Manually hand shovel/rake to assist with placing the streambed material into the riprap voids prior to washing in the streambed material.
2) Begin to manually wash the streambed material into the voids, slowly add more washing-in streambed material on top, in a manner to prevent turbid effluent flow from exiting the work area.
3) If turbidity is observed discharging from the confined work area, cease operations immediately and implement preventative measures as outlined in the approved SMP, until the water level subsides and naturally permeates. Continually observe the confined work area.
4) The Contractor may be allowed to move to different area(s) and continue the washing in process, as noted in Steps 1-3 above, if other locations need the water levels to subside and permeate. (It may be necessary to stop temporarily if the rate of water application exceeds the storage capacity and natural infiltration of the riprap area.)
5) The Contractor shall continue until all voids are filled with streambed material to the satisfaction of the Engineer or their authorized delegate. The ratio of streambed material to riprap shall be approximately 1:3 (assuming 30% voids in the riprap). This ratio should be considered as a guideline in deciding whether riprap voids are likely to be filled. If the

calculated volume of streambed material based on 30% void space has not been washed in, it should be assumed that the voids are not fully filled.

6) Partially remove water-handling-cofferdams or cofferdams to allow watercourse to flow through the area in a controlled manner. Observe watercourse over a period of time; should the water flow go under the surface through the recently created riprap area, reinstall water-handling-cofferdams and continue washing streambed material into riprap voids. Repeat this process as necessary until subsurface flow is no longer observed.

   The Contractor may propose alternative methods to meet the requirements noted above. The means and methods will be reviewed by the Engineer or their authorized delegate for acceptance.

3. **Site Maintenance.** When washing in supplemental streambed material, the Contractor shall perform all containment, diversion, or other separation of the channel flow to minimize sediment transport downstream.

The pre-approved stockpile areas shall be restored to the satisfaction of the Engineer. Work to restore the stockpile areas shall be paid for under the respective pay item.

Method of Measurement:
Work under this item shall be measured for payment as provided under Article 1.09.04 – Extra and Cost-Plus Work.

The sum of money shown on the estimate and in the itemized proposal as "Estimated Cost" for this work will be considered the price bid even though payment will be made only for actual work performed. The estimated cost figure is not to be altered in any manner by the bidder. Should the bidder alter the amount shown, the altered figures will be disregarded, and the original price will be used to determine the total amount bid for the Contract.

Basis of Payment:
The price shall include all materials, equipment, geotextile, pumps, hoses, tools, and labor incidental to the preparation of the stockpile area, hauling of the material to the stockpile, placement and washing-in supplemental streambed material to fill riprap voids, and separation of any rock ledge or concrete debris, storing, and protecting (including but not limited to sedimentation controls and covering of excavated material).

Payment for Washing-in Supplemental Streambed Material will be paid for under Article 1.09.04 – Extra and Cost-Plus Work.

Payment for clearing and grubbing of the approved stockpile area will be included in the Item "Clearing and Grubbing."

Payment for excavation and reuse of existing channel bottom material will be included in the ITEM #0202216A "Excavation and Reuse of Existing Channel Bottom Material."

Payment for supplemental streambed channel material, other than washing-in streambed material, will be included in the Item #0202217A “Supplemental Streambed Channel Material.”

Payment for all containment, diversion or other separation of stream flow will be included in the item “Cofferdam and Dewatering” or special provision for "Handling Water."

Pay Item	**Pay Unit**
Washing-in Supplemental Streambed Material	est.

ITEM #0202222A – BOULDER PLACEMENT IN RIVER

Description: Work under this item shall consist of furnishing and placing rounded boulders within an existing or proposed channel to redirect flow, reduce streambank erosion and improve or create aquatic habitat through the formation of scour pools. This item shall also include maintaining a stockpile of the material on the Site, placement of the stockpiled material in the channel, and the removal and proper disposal of all unused and unacceptable material.

Materials: The individual boulder type and size used shall be rounded boulder. The mineral composition and color of the boulders selected shall replicate to the extent possible the existing boulders on-site.

This material shall be rounded and conform to the following gradation:

Stone Size	% of the Weight
18 Inches	0
10 to 18 Inches	30-50
6 to 10 Inches	30-50
4 to 6 Inches	20-30
2 to 4 Inches	10-20
Less than 2 inches	0-10

Individual boulder material for this item shall be sound, durable, and free from decomposed stones or other defects impairing durability and shall be resistant to the action of air and water.

Material the Contractor proposes to use must be inspected and approved by the Engineer or their authorized delegate prior to the excavation of existing on-Site material within the Project Limits or hauling of material from an off-Site source. The Contractor shall provide the Engineer at least 10 workdays' notice for the inspection and approval of the individual boulders.

The following will **NOT** be accepted for rounded boulders:

- Individual boulders consisting of sandstone, shale, or other rock material prone to disintegration
- Boulders with visible cracks or spalling
- Rock excavated from ledge (bedrock) formations or broken from larger boulders
- Boulders with sharp corners, angular edges, or edges as a result of cutting or crushing operations
- Broken concrete

The bottom layer of rounded boulders within the culvert shall be set in +/- 1" grout. Grout shall

satisfy the requirements of Section M.03.05.

Construction Methods: The Contractor shall submit for the Engineer's approval a proposed location plan for stockpiling the rounded boulders. The proposed location shall be suitable in size and upland of the channel to minimize disruption to the channel or impact to wetland areas caused by moving the materials to and from the stockpile during placement of material. The stockpile area shall be prepared in accordance with the "Required Best Management Practices" in Article 1.10.03.

All disturbed areas, including the stockpile area, shall be permanently stabilized using approved erosion and sedimentation control measures and in accordance with the required "Erosion and Sedimentation Control Plan."

Grout shall be placed in a layer on the culvert bottom as shown on the plans and as directed by the Engineer.

Method of Measurement: This work under this item, being paid on a lump sum basis, will not be measured for payment.

The cost to furnish and place grout material shall be incidental to the cost of the boulder placement in river.

Basis of Payment: This work will be paid for at the Contract lump sum price for "Boulder Placement in River," completed and accepted. The price shall include all materials including grout, equipment, tools and labor incidental to the preparation of the stockpile area, excavation of channel bottom, hauling of the material to the stockpile, separation of any rock ledge or concrete debris, and storing and protecting (including sedimentation controls and covering) or excavated material.

Pay Item	Pay Unit
Boulder Placement in River	LS.

ITEM #0202315A - DISPOSAL OF CONTROLLED MATERIALS

Description:

Soil that has been generated from excavation activities within the Project Limits that has been deemed surplus or unsuitable for reuse will be managed as Controlled Materials. Work under this Item shall include preparation of an off-site temporary soil stockpile area, transportation to the stockpile area, stockpiling, covering, securing, and maintaining of the stockpiled Controlled Materials throughout the duration of the Project, as well as the loading, transportation, and final off-site treatment/recycling/disposal of the Controlled Materials. Discussion of potential levels of various contaminants of concern that may be encountered during construction is provided in the *Notice to Contractor – Environmental Investigations*. Actual levels found during construction may vary and such variations will not be considered a change in condition provided the material can still be disposed as non-hazardous at one or more of the disposal facilities listed herein.

The Contractor must use one or more of the following Department-approved treatment/ recycle/disposal facilities for the disposal of non-hazardous soils:

Allied Waste Niagara Falls Landfill, LLC 5600 Niagara Falls Blvd. Niagara, NY 14304 Attn: Ralph Larimore Phone: (716) 471-7071 (mobile) Email: rlarimore@republicservices.com	Clean Earth of Carteret 24 Middlesex Avenue Carteret, NJ 07008 Attn: Tejas Shah Phone: (201) 283-4227 (mobile) Email: trshah@harsco.com
Clean Earth Fort Edward (FKA ESMI) 304 Towpath Lane Fort Edward, NY 12828 Attn: Peter Hansen Phone: (518) 703-9319 (mobile) Email: phansen@harsco.com	Clean Earth New Hampshire (FKA ESMI) 67 International Drive Loudon, NH 03307 Attn: Marc Aubrey Phone: (603) 316-7210 (mobile) Email: maubrey@harsco.com
Clean Earth of Philadelphia, Inc. 3201 S. 61st Street Philadelphia, PA 19153 Attn: Joe Siravo Phone: (215) 428-1700) (mobile) Email: jsiravo@harsco.com	Clean Earth of Southeast Pennsylvania, Inc. (AKA CESP) 7 Steel Road Morrisville, PA 19067 Attn: Joe Siravo Phone: (215) 428-1700) (mobile) Email: jsiravo@harsco.com

Colonie Landfill (Waste Connections, Inc) 4 Arrowhead Lane Cohoes, NY 12047 Attn: Eric Morales Phone: (518) 783-2827 Email: Ericmo@wcnx.com	Coplay Aggregates Regulated Fill Site* (Material Solution Services-Brokerage Firm) 5101 Beekmantown Road Whitehall, PA 18052 Attn: Brian Hilliard Phone: (610) 509-7679 (mobile) Email: bhilliard@coplayagg.com
Cumberland County Landfill (aka Community Refuse Services - Managed by Waste Management PC) 135 Vaughn Road Shippensburg, PA 17257 Attn: Mike McIntyre Phone: (610) 551-1029 (mobile) Email: mmcinty2@wm.com	Greentree Landfill 635 Toby Road Kersey, PA 15846 Attn: Anthony (Tony) LaBenne Phone: (814) 590-9906 (mobile) Email: alabenne@nobleenviro.com
Manchester Landfill 311 Olcott Street Manchester, CT 06040 Attn: Ray Carr Phone: (860) 647-3179 Email: rcarr@manchesterct.gov	Marilyn's Landing / BFI Halifax Landfill 946 Plymouth Street Bridgewater, MA 02324 Attn: Marilyn MacDonald Phone: (508) 294-0173 (mobile) Email: marilyn@macdonald-industries.com
Ontario County Landfill (Managed by Casella Waste) 3555 Post Farm Road Stanley, NY 14561 Attn: Scott Sampson Phone: (603) 235-3597 Email: scott.sampson@casella.com	Red Technologies, LLC 232 Airline Avenue Portland, CT 06980 Attn: Mark Barnes Phone: (860) 342-1022 Email: mbarnes@redtechllc.com
Republic Services Conestoga Landfill* 420 Quarry Road Morgantown, PA 19543 Attn: James Kuhn Phone: (717) 246-4640 Email: jkuhn@republicservices.com	Soil Safe, Inc. 378 Route 130 Logan Township, NJ 08085 Attn: Billy Booth Phone: (410) 872-3990 Email: bbooth@gflenv.com

Ted Ondrick Company, LLC 58 Industrial Road Chicopee, MA 01020 Attn: David Costanzo Phone: (413) 592-2566 Email: DCostanzo@ondrickmr.com	Tunnel Hill Reclamation 2500 Township Road, 205 Route 2 New Lexington, OH 43764 Attn: Josh Rennicker Phone: (330) 432-3382 (mobile) Email: jrennicker@win-waste.com
Turnkey Landfill - Waste Management of New Hampshire P.O. Box 7065 90 Rochester Neck Road Rochester, NH 03839 Attn: Ellen Bellio or Joe Iannuzzi Phone: (603) 330-2170 (Ellen) Phone: (978) 730-9907 (Joe) Email: ebellio@wm.com jiannuz2@wm.com	Waste Management: Middleborough Sanitary Landfill 207 Plympton Street Middleborough, MA 02346 Attn: Patrick Milmoe Phone: (508) 962-3671 (mobile) Email: PMilmoe@WM.com
Waste Management: RCI Fitchburg Landfill Fitchburg Princeton Road Westminster, MA 01473 Attn: Frank Sepiol Phone: (413) 519-3916 mobile) Email: fsepiol@wm.com	Winchendon Landfill (W.L. French Excavating Corp.) 580 River Street Winchendon, MA Attn: Jarrett Everton Phone: (978) 375-1068 (mobile) Email: jeverton@wlfrench.com
Brixton Street Landfill 25 Brixton Street, West Hartford, CT 06107 Attn: John Sullivan (Loureiro Engineering) Associates, Inc. Phone: 860-41-3070 Email: Jtsullivan@loureiro.com	Former Stratford Army Engine Plant 550 Main Street, Stratford, CT 06615 Nicholas Mucci, Clean Earth, Inc. Phone: 781-367-5115 Email: Nmucci@cleanearthinc.com

* Please note that if this facility is to be used, each bin letter will require an additional 10-day (or more) waiting period in addition to the 15-day lab period designated in the Specifications to allow for Pennsylvania Department of Environmental Protection (PADEP) review.

The above list contains treatment/recycle/disposal facilities which can potentially accept the waste stream generated by the Project in quantities that may be limited by their permits and their operation's restrictions. It is the responsibility of the Contractor to verify that a facility will be available and capable of handling the volume as well as the chemical and physical characteristics

of the material generated by the Project. **The terms and conditions specified herein apply to all and any additional disposal facility that can accept Project soils deemed as Controlled Materials, that has been approved by the Department and Engineer at the request for use by the Contractor, without exception.**

Materials:

The required materials shall conform to the requirements of the Contract:

Anti-tracking pad shall be constructed with the placement of a non-woven geotextile fabric covered with two-inch stone having a minimum thickness of four inches.

Polyethylene sheeting for covering stockpiled excavated materials shall be a minimum thickness of six (6) mils, 20 feet wide by 100 feet long.

Runoff control barrier shall be constructed with hay bales (14 inches by 36 inches by 18 inches, typical).

Sandbags used to secure polyethylene covers shall be at least 30 pounds.

Sorbent boom shall be eight inches in diameter and 10 feet long and possess petrophilic and hydrophobic properties. Sorbent booms shall also have devices (e.g., clips, clasps, etc.) for connection to additional lengths of boom.

Construction Methods:

A. General

The Project temporary soil stockpile area shall be established prior to the initiation of construction activities generating Controlled Materials. The proposed location of the stockpile area is the Town of Berlin-owned parcel at 42 Patterson Way, Berlin, CT, approximately three (3) miles from the Project. The stockpile area shall include any necessary grading/clearing of the designated area, provision of erosion and sedimentation controls (e.g., silt fencing, hay bales, or other suitable means), anti-tracking pad installation, and stockpile coverage (as needed) to prevent fugitive dust emissions and minimize seepage of material or water from the stockpiled material.

The anti-tracking pad shall be constructed at the street entrance/exit to the Town parcel, having minimum dimensions of 10 feet in width by 20 feet in length, and four inches in thickness. The Contractor shall first remove the top four inches of the existing ground surface followed by the placement of a non-woven geotextile fabric and placement of the two-inch stone. The Contractor shall maintain the anti-tracking pad throughout the duration of the Project and restore the pad as appropriate when it has lost its ability to hold soil, or when otherwise directed by the Engineer.

When Controlled Materials are managed 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), and decontamination procedures.

Unless otherwise directed by the Engineer, at the time excavated materials are designated by the Engineer as unsuitable or surplus, that Controlled Materials shall be transported directly from their point of origin on the Project to the prepared temporary soil stockpile area. All Project stockpiled soil shall be fully encompassed by erosion/sedimentation controls. It is further recommended that the soil stockpiles be carefully monitored for potential fugitive dust emissions, and suitable control measures (e.g., covering with polyethylene sheeting, hydro-seeding, etc.) implemented if required. The Contractor shall plan excavation activities in consideration of the material testing and disposal requirements described herein and as dictated by the Contractor's selected treatment/recycle/ disposal facilities. No claims for delay shall be considered based on the Contractor's failure to coordinate excavation activities as specified herein.

B. Material Disposal

The Engineer will sample materials stored at the temporary soil stockpile area at the frequency established by the Contractor's selected treatment/recycling/disposal facility. The Contractor shall designate to the Engineer which facility it intends to use, as well as the facility acceptance criteria and sampling frequency, prior to samples being collected. 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 temporary stockpile area(s) is full and ready for sampling and ending with the Contractor's receipt of the laboratory analytical results. Any change of intended treatment/ recycling/disposal facility 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.**

It is solely the Contractor's responsibility to coordinate the disposal of Controlled Materials with its selected treatment/recycling/disposal facility(ies). The Contractor shall obtain and complete **all paperwork** necessary to arrange for material disposal (e.g., disposal facility waste profile sheets, Qualified Environmental Professional [QEP] certifications/letters, checklists, manifests/shipping papers/bills of lading, and/or any other supporting documentation, etc.). The Contractor shall retain the services of a QEP (i.e., CT Licensed Environmental Professional [LEP], MA Licensed Site Professional [LSP], Certified Hazardous Materials Manager [CHMM], etc.), as necessary, to facilitate the completion of such documents as required by the Contractor's selected disposal facility. Prior to submission to the receiving facility, the Contractor shall provide all disposal documents to the Engineer for review and Generator signature(s), as applicable.

Upon receipt of the final approval from the facility, the Contractor shall arrange for the loading, transport and treatment/recycling/disposal of the materials in accordance with all applicable Federal and State regulations. **No claim will be considered based on the failure of the**

Contractor's selected disposal facility(ies) 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 (including but not limited to the 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 shall be completed by the Contractor prior to the material leaving the Project. 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.

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.

C. 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:

1. Transported Controlled Materials are to be covered sufficiently to preclude the loss of material during transport prior to leaving the Project temporary soil stockpile area and are to remain covered until their arrival at the selected treatment/recycling/disposal facility.

2. 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.

3. 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.

D. Temporary Soil Stockpile Area Maintenance

The Contractor shall provide all necessary materials, equipment, tools, and labor for anticipated activities within the temporary soil stockpile area. Such activities include, but are not limited to, handling and management of stockpiles; uncovering and recovering stockpiles; maintenance of the stockpile area; replacement of damaged components (e.g., sandbags, polyethylene sheeting, anti-

tracking pad, etc.); and waste inventory record management. The Contractor shall manage all soil and other materials handled in the stockpile area in such a way as to minimize tracking of potential contaminated materials out of the stockpile area and off-site, and minimize dust generation.

Where fugitive dust issues are identified, each stockpile shall be securely covered when not in active use, with a cover of sufficient size to prevent generation of dust. The polyethylene sheeting shall be secured with sandbags to prevent wind erosion.

The Contractor shall manage/stage stockpiled material as necessary, or otherwise directed by the Engineer, to ensure efficient use of stockpile space and enable effective maintenance of stockpile covers, when implemented. The staged stockpiles shall be inspected at least daily by the Contractor to ensure that the cover and containment have not been damaged and that fugitive dust issues are not apparent.

Following the removal of all stockpiled Controlled Materials, any residuals shall be removed from the stockpile area as directed by the Engineer. Residuals shall be disposed of as Controlled Materials.

E. 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 designated by the Engineer and shall be required prior to equipment and supplies leaving the Project, and between different 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.

F. 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 other handling operations associated with Controlled Materials. It shall

be the Contractor's responsibility to supervise fugitive dust control measures and to monitor airborne particulate matter.

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 treatment/recycling/disposal facility. Such determinations shall be made by measuring each hauling vehicle on the certified permanent scales at the treatment/recycling/disposal facility. 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, 2.06, 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.

Temporary soil stockpile area preparation and maintenance, transportation of Controlled Materials to the soil stockpile area, unloading, stockpiling and staging (as necessary) of Controlled Materials in the soil stockpile area, covering/securing/management of stockpiled material, equipment decontamination, dust control, collection of residuals, and the collection and disposal of liquids generated during equipment decontamination activities, will not be measured separately for payment.

In addition, any material processing required by the Contractor-selected disposal facility(ies), including the proper disposal of all removed materials, will not be measured separately for payment.

Basis of Payment:

This work will be paid for at the Contract unit price, which shall include the preparation of **all** related waste profile and shipping paperwork; the loading and transportation of Controlled Materials from the Project soil stockpile area to the treatment/recycling/disposal facility(ies); the fees paid to the facility(ies) for treatment/recycling/disposal; and all equipment, materials, tools, labor and fees incidental to this work. **This unit price will be applicable to <u>all</u> of the listed disposal facilities and any additional Department-approved facilities added at the request of the Contractor and will not change for the duration of the Project.**

This price shall also include preparation and maintenance of the soil stockpile area; transportation of Controlled Materials to the soil stockpile area; unloading, stockpiling and staging (as necessary) of Controlled Materials in the soil stockpile area; covering/securing/management of stockpiled material; equipment decontamination, dust control, collection of residuals; the collection and disposal of residuals and liquids generated during equipment decontamination activities.

<u>Pay Item</u>	<u>Pay Unit</u>
Disposal of Controlled Materials	TON

ITEM #0202452A – TEST PIT

Description:
The work covered under this item includes furnishing all labor, equipment, materials, and incidentals necessary to perform all operations in connection with excavating and backfilling by machine and/or by hand exploratory test pits at locations indicated or directed by the Engineer. The purpose of the test pits is for locating utilities.

Construction Methods:
Test pit excavations shall have neat, clean-cut, and vertical sides; hand-digging shall be employed when required by the Engineer. Sawcut shall be performed where necessary and as directed by the Engineer.

It shall be agreed that the Contractor entered into this contract with full knowledge that in any work involving excavation, operation in public highways or adjacent to other developments, obstacles, difficulties, unforeseen soil or groundwater conditions, etc., may be encountered, and that the Contractor has included in the bid and contract obligations the assumptions of the risks and costs to which such obstacles, etc., may be present. Contractor shall "Call Before You Dig" before any excavation work.

Perform all work in conformance with local, state, and federal codes.

Dig test pits so as to ensure that underground utilities or structures are not damaged. It shall be the Contractor's sole responsibility for any damages incurred during excavation operations. Any damages shall be repaired or replaced by the Contractor to the satisfaction as directed by the Engineer at the Contractor's own expense.

Contractor shall notify the Engineer of any revealed conflicts which may require design revisions, relocations, and/or adjustments as early as possible to avoid unnecessary delays. The Engineer shall be allowed sufficient time to perform all necessary design revisions. No work shall be started within areas of conflict until so authorized.

Protect each pit with steel plates, other coverings, fences, barriers, or other appropriate materials as deemed necessary. Do not backfill pits until authorized. Compact backfill materials 95% to the sub-grade elevation or as otherwise directed.

The surface of test pit areas shall be restored to a condition equal or better than original as approved by the Engineer. Materials to be used for backfilling test pits shall consist of materials similar to the bedding material and Additional Backfill Material as specified in these specifications. When test pits are performed in areas that require pavement restoration, the subbase, base and surface courses must conform to the requirements for Temporary Pavement and/or Permanent Pavement as specified elsewhere in these specifications.

Test pits throughout the project area are to be completed prior to beginning actual construction activities.

Method of Measurement:
Test pits will be measured for payment by the number of each test pit dug within the limits and to the depths as ordered and approved by the Engineer. Test Pits shall include the cost of excavating and backfilling the test pit.

Basis of Payment:
The cost of the sawcut, excavation, removal of pavement, restoration of the surface of the test pit areas, and associated construction work will be included in the test pit cost. No separate payment will be made for bedding or backfill material furnished and installed but will be included in the cost per each test pit performed.

Pay Item	**Pay Unit**
Test Pit	EA

ITEM #0202911A – CONDITION SURVEY (SITE NO. 1)

Description: Work under this item consists of performing condition surveys and monitoring of existing structures at 215 Robindale Drive and 85 Glen Street.

Work shall include, but not necessarily be limited to:

1. Conducting pre- and post-construction condition surveys.
2. Laying out, furnishing, installing, protecting, maintaining, monitoring, and preparing reports for all monitoring instrumentation: Crack Monitors, Deformation Monitoring Points, and Vibration Monitors.
3. Replacement of failed, damaged, or stolen instrumentation.
4. Notifying the Engineer and taking immediate remedial action to prevent the limiting values from being reached. Meeting with the Engineer to review current field conditions to determine further steps to be taken, before exceeding the limiting values.
5. Making adjustments to construction operations in order to not exceed the limiting values.
6. Removal of all monitoring instruments (Crack Monitors, Deformation Monitoring Points, and Vibration Monitors) as specified herein, or as directed by the Engineer, at the completion of construction activities.

Materials:

Crack Monitors: Crack monitors shall be two-piece acrylic plate type monitors with crosshairs on one piece and fine grid on the other, mounted on each side of the crack with appropriate screws or quick setting epoxy as manufactured by Avongard Products, U.S.A., Ltd., Preservation Resource Group, Inc. (PRG) or approved equal.

Deformation Monitoring Points (DMPs): These are to be used as targets in monitoring by conventional survey methods. The target shall be the head of a stainless or galvanized steel bolt drilled and grouted into the structure or other devices approved by the Engineer that will allow repeatable and reproducible elevation readings when measured with conventional survey equipment.

Vibration Monitors: Provide three-component seismographs or vibration monitors, capable of measuring and recording particle velocity data and frequency in three mutually perpendicular directions. The Contractor's vibration specialist shall install, maintain, and calibrate the vibration monitoring instruments in accordance with the instrument manufacturer's recommendations. Any instrument showing indication of damage, malfunction, or erratic functioning shall be immediately replaced with a calibrated, functioning instrument. The Contractor's vibration specialist shall have a minimum of 5 years of experience with implementing a vibration monitoring program on similar projects.

Construction Methods:

Pre- and Post-Conditions Surveys and Crack Monitoring:

The Contractor shall engage the services of a qualified, independent professional, acceptable to the Engineer to conduct pre- and post- construction surveys of the main structure. Work under this item included furnishing all necessary labor, equipment and materials to perform the condition urveys and monitor cracks. Work also includes contacting the owner by certified letter to obtain permission for entry required for the work.

A pre-construction condition survey shall be completed, and 5 copies of the survey and initial monitoring measurements submitted at least 10 days prior to the start of ground improvement or at an earlier stage of construction if requested by the Engineer. Initial crack monitoring measurements are to be included in this report.

The pre-construction condition survey shall consist of a visual inspection, photograph and video documentation, and written description of existing structures. Descriptions shall identify any existing cracks, damage, or other defects and shall include such information to make it possible to determine the effect, if any, of the construction operations on the defect. Where significant cracks or damage exists, or for defects too complicated to describe in words, photographs shall be taken and made part of the record. In addition, the significant cracks shall, with consent of the owner, be instrumented with crack monitors to record any movement of the crack. Where crack monitors are not installed, crack width measurements shall be made with suitable measuring devices. Initial crack monitoring measurements shall be recorded in the presence of Engineer and Owner's representative. All parties shall sign the record copy of the form used to record the initial readings.

The initial record of each property examined shall be signed by the representatives present and, if practicable, by the Owners of the property, whether or not they are present at the examinations.

A post-construction condition survey will be conducted upon completion of construction activities, or at a later date if requested by the Engineer.

The post-construction condition survey shall repeat the process used in the preconstruction survey, paying particular attention to any areas where complaints of damage have been received or damage claims have been filed. Notice shall be given to all interested parties so that they may be present during the post-construction condition survey. A form shall be provided to all representatives attending the post-construction survey showing the initial crack reading measurements and shall provide a location to record the final measurements. Crack monitors shall be read during the final examination and can be removed if no change is noted from the initial readings. If a change is noted, the crack gauge shall remain in place until approval is given by the Engineer to remove the crack monitor. Mounting hardware or adhesives shall be removed and the surface restored when the crack gauges are removed. Representatives present shall sign the record copy of the monitoring form used to record the final readings. Crack monitors shall not be

removed until the Owner or Owner's representative signs the record copy of the form recording the final crack monitoring readings.

The final record of the examined structures shall be signed by the representatives present and, if practicable, by the Owner, whether or not they are present at the examinations.

The Contractor shall submit 5 copies of the pre- and post-construction condition surveys including all documentation to the Engineer within 10 days of the completion of the post- construction condition survey.

Monitoring Requirements:

A. Monitoring Instrumentation Installation:

1. Install the DMPs and Vibration Monitors at the locations as directed by the Engineer. A minimum of two DMP locations and one Vibration Monitor locations shall be established.

2. Crack Monitor locations will be determined and installed as part of the pre-construction condition survey.

3. All DMPs and Crack Monitors shall be installed in the presence of the Engineer.

4. Contractor to coordinate uninterrupted access, power supply (if applicable), and wireless signal (if applicable).

5. All DMPs and Crack Monitors shall be securely fixed at the approved locations and position, so that the instruments are capable of resisting disturbance from vandalism. Establish the initial elevation and location of DMPs to an eighth of an inch precision.

6. DMP benchmarks shall be selected by the contractor and protected from damage for the duration of the work.

7. The Engineer reserves the right to modify the DMP and Vibration Monitor layout as is deemed necessary to monitor the impact of the Contractor's proposed method of construction. The DMPs shall be arranged so that monitoring can continue until completion without interruption. Adequate access for maintenance and reading of the DMPs shall be provided.

B. Monitoring Schedule and Submittal:

1. All DMPs and Crack Monitors / crack measurement points shall be installed and initial readings completed with the pre-construction condition survey as noted above.

2. In addition to the initial readings, DMPs and Crack Monitors / crack measurement points shall be monitored:

- Prior to the start of and then at least daily during bedrock removal to accommodate foundation subgrade preparations

- One week after completion of foundation subgrade preparations, and then weekly until there is no change in readings.

  The Engineer may increase the frequency of monitoring at no additional cost should there be any changes in the measurements or other indications of movement. Measurements shall the Engineer by the morning after the day the readings were taken. A typed and signed form shall be submitted on a weekly basis during periods requiring monitoring, unless the Engineer approves submittal less frequently.

3. The Contractor's vibration specialist shall maintain a log of all vibration producing activities for which ground vibrations were monitored. The vibration monitoring log shall include the recorded maximum peak particle velocity and the associated frequency and the date and time for each event recorded and the type and location of the vibration producing activity, location of monitoring instruments, and the closest distance from the vibration producing activity to the monitoring instrument. In addition to immediate verbal and email notifications of significant vibrations, the vibration specialist shall submit weekly reports of vibration monitoring to the Engineer during periods when such monitoring is required. The monitoring reports shall include the vibration monitoring record data, a location plan showing areas of construction activity and monitoring locations, and a written narrative summarizing the vibration monitoring performed and the results.

C. The Contractor shall respond to the monitored readings from instrumentation as follows:

1. Implement remedial action if readings approach the Limiting Values of ½" for DMPs, 1/8" for Crack Monitors / crack measurement points, and a peak particle velocity (i.e. ground vibrations) of 0.5 inch per second. The term "peak particle velocity" shall be considered to mean the resultant vector sum of particle velocities in three mutually perpendicular directions at any instant in time.

2. Take all necessary steps so that the limiting values are not exceeded. The Contractor may be directed to suspend activities in the affected area with the exception of those actions necessary to avoid exceeding the limiting value.

3. If any readings exceed 50 percent of the limiting values, the Contractor shall:

   a) Halt operations that are causing the instrument response values to reach 50 percent of the limiting value.

   b) Meet with the Engineer to discuss response actions.

   c) Implement the reviewed plan of action, which includes modifications to the Contractor means and methods necessary to reduce the potentially damaging effects of the construction activities such that the limiting values are not reached.

D. Damage to Instrumentation:

The Contractor shall protect all DMPs, Crack Monitors, and Vibration Monitors from damage due to construction operations, weather, and vandalism. If an instrument is damaged or unusable, the Contractor's instrumentation personnel shall replace the damaged DMP or Crack Monitor within 72 hours, at no additional cost to the State. The Engineer will be the sole judge of work stoppage in the vicinity of the damaged or unusable instrument until it is again operational, at no additional cost to the State.

E. Removal of Instruments:

Prior to completion of the Contract, the Contractor shall remove all DMPs and restore the surface to the Engineer's satisfaction. All instruments or portions thereof removed by the Contractor shall become the property of the Contractor.

Method of Measurement:

Within sixty (60) calendar days of the award of the Contract, the Contractor shall submit to the Engineer for approval a cost breakdown of the lump sum bid prices for these items. The submission must include substantiation showing that the cost breakdowns submitted are reasonable based on the Contractor's lump sum bids. The cost breakdown shall be in accordance with the following payment schedule:

Pre-Construction Surveys: The cost to develop and perform pre-construction surveys meeting site requirements. The cost shall not exceed 20 percent of the lump sum value.

Furnishing and Installation of Monitoring Devices: The cost to procure and install all required devices at each site. The cost shall not exceed 20 percent of the lump sum value.

Monitoring and Maintenance of Devices: The number of months and monthly cost to perform the required monitoring and prepare documentation at each site. The cost shall be a minimum of 40 percent of the lump sum value.

Post-Construction Surveys and Removal of Monitoring Devices: The cost to perform the post-construction surveys and remove monitoring devices at each site. The cost shall be a minimum of 5 percent of the lump sum value.

Basis of Payment: This work will be paid for at the contract lump sum price for "Condition Survey (Site No. 1)" which price shall include all materials, tools, equipment and labor for the required work at each site including: the services of an independent professional to perform the pre- and post-construction surveys; furnishing, installation, monitoring, and removal of DMPs; preparation of reports; notification of the Engineer of any readings which reach 50 percent of the limiting values; and adjusting the means and methods in order not to exceed the limiting values.

Pay Item	Pay Unit
Condition Survey (Site No. 1)	LS

ITEM #0204111A – COFFERDAM AND DEWATERING

Work under this item shall conform to Section 2.04 – Cofferdam and Dewatering, amended as follows:

2.04.01 – Description:

Work under this item shall consist of the design, construction, maintenance and removal of a cofferdam, the support/retainage of existing facilities, and necessary dewatering within the cofferdam, as shown on the plans. If designated on the plans, the installed cofferdam material shall be left in place. For the purposes of this specification, cofferdam shall be understood to mean a structure, the type of which the Contractor elects to build, to fully enclose, confine, and support an area to be pumped dry to enable construction to be carried out.

ITEM #0204151A - HANDLING WATER

Description:

Work under this item shall consist of designing, furnishing, installing, maintaining, and removing of a temporary water handling system. This may include water- handling-cofferdams, bypass pipes, bypass pumps/hoses, temporary energy dissipation, sump pumps, drainage channels, water handling for ancillary drainage, and dewatering.

A temporary water handling system redirects water beyond, through, or around the limits of construction to allow work to be done in the dry.

Materials:

The materials required for this work shall be as shown on the plans, on the accepted Contractor's Working Drawing submittal, or as ordered by the Engineer.

Construction Methods:

The Contractor shall prepare and submit written procedures for handling water. Working Drawings, in accordance with Article 1.05.02, shall also be prepared and submitted.

The Contractor shall consider stream conditions, water elevations, expected weather, and risks associated with the Site to determine the type of temporary water handling system required to redirect water away from work being performed. The system shall be designed to comply with the Temporary Hydraulic Table in the Contract plans and be compatible with the stage of construction and Maintenance and Protection of Traffic scheme, as indicated in the Contract, and shall conform to Section 1.10.

The Contractor shall be responsible to maintain and repair the water handling system throughout the duration of the Contract. If the system becomes damaged, displaced, or not functioning properly due to construction activities, stream conditions or storm events, the Contractor shall be responsible to remediate the system back to working order per plan or as required at the direction of the Engineer.

Unless otherwise directed by the Engineer, all temporary water handling system components shall be removed in an acceptable manner when no longer required.

Bypass Pumping: The bypass pump system shall be designed by the Contractor to comply with the Temporary Hydraulic Table in the Contract plans.

When incorporating a bypass pump/hose system, the Contractor shall provide a means to maintain continuous flow to the downstream channel to protect resources, unless otherwise noted in the Contract plans or as accepted by the Engineer. The Contractor shall provide for both maintaining

continuous flow and accommodating temporary design flows using appropriate pump size for each case, valving, metering, or adjusting the flow during construction.

A pump screen shall be provided on the intake with maximum 0.5 inch diameter openings.

Method of Measurement:

The work under this item, being paid on a lump sum basis, will not be measured for payment.

Basis of Payment:

This work will be paid for at the Contract lump sum price for "Handling Water" completed and accepted, which price shall include designing (including submittals and

Working Drawings), furnishing, installing, maintaining, and removing of all temporary water handling system components as are necessary for completion of the work. This price shall include all materials, equipment, tools, labor and work incidental thereto.

A schedule of values for payment shall be submitted to the Engineer for review and comment.

Pay Item	**Pay Unit**
Handling Water	LS

ITEM #0219011A – SEDIMENT CONTROL SYSTEM AT CATCH BASIN

Description: Work under this item shall consist of furnishing, installing, maintaining, replacing, and removing sediment control system at catch basins, herein referred to as Silt Sack, at the locations as shown on plans or as directed by the Engineer. The work shall also include removal of accumulated sediment, and disposal of accumulated sediment,

Materials: The Silt Sack must be commercially produced and marketed for the specific application(s) on the Project. All Silt Sack must be manufactured from a specially designed woven polypropylene geotextile sewn material. The Silt Sack must be able to handle flows of at least 180 gallons per minute per square foot, fit any sized catch basin or drop inlet, and be UV resistant.

The Silt Sack product shall be one of the following or an approved equal:

1. Siltsack®
2. Dandy Sack®
3. FleXstorm Catch-It™
4. PIG®Sediment-Drain Filter
5. ACF Environmental Silt Sack

The Sediment Control System at Catch Basin must have the following features: two dump straps attached at the bottom to facilitate the emptying of the Silt Sack and lifting straps to be used to lift the Silt Sack from the catch basin or drop inlet. The Silt Sack shall have a restraint cord approximately halfway up to keep the sides away from the catch basin or drop inlet walls. When required, a curb deflector shall be installed as directed by the Engineer.

Product Data for the Silt Sack to be used by the Contractor must be submitted for review and acceptance by the Engineer or their authorized delegate prior to the installation on-Site.

Construction Methods: The Contractor shall install the Silk Sack per the manufacturer's instructions and recommendations at each catch basin or drop inlet as shown on the plans or as directed by the Engineer to provide inlet protection to prevent silt, sediment, or debris from entering the stormwater drainage system.

When the Silt Sack becomes 1/2 full of accumulated sediment, the Contractor shall empty, clean, and replace the Silt Sack back into the catch basin or drop inlet. Sediment emptied shall be considered unsuitable material and disposed of at an off-Site approved upland facility per federal, State, and local environmental laws and regulations.

At the completion of the Project, the Contractor shall remove all Silt Sacks within the Project limits. Any spilled sediment material during removal operations shall be removed by the Contractor at no cost to the State.

Method of Measurement: Sediment Control System at Catch Basin will be measured as each installed, maintained, accepted, and removed. There will be no separate measurement for maintenance or replacement associated with this item.

Basis of Payment: The item "Sediment Control System at Catch Basin" will be paid at the Contract unit price for each completed system in place and accepted, which price shall include installing, maintaining, replacing, removal of material, off-Site disposal of accumulated material, materials, equipment, tools, and labor incidental thereto.

The cost of installing hay bales, geotextile, check dam, or fiber roll for inlet protection shall be paid for under their respective Contract item or special provision.

Pay Item	**Pay Unit**
Sediment Control System at Catch Basin	ea.

ITEM #0406999A – ASPHALT ADJUSTMENT COST

Description:

The Asphalt Adjustment Cost will be based on the variance in price for the performance-graded binder component of the following:

I. Hot Mix Asphalt (HMA) and Polymer Modified Asphalt (PMA),
II. Ultra-Thin Bonded HMA (UTB-HMA) and Ultra-Thin Bonded PMA (UTB-PMA),
III. Thin Friction Wearing Course (TFWC),
IV. Binder Rich Intermediate Courses (BRIC) and Stone Matrix Asphalt (SMA), and
V. Asphalt Rubber Chip Seal (ARCS) treatments completed and accepted during the Contract.

The Asphalt Price is available on the Department of Transportation website at:
http://www.ct.gov/dot/asphaltadjustment

Construction Methods:

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

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

II. For UTB-HMA and UTB-PMA mixtures:
   a. The UTB-HMA or UTB-PMA mixture for which the adjustment would be applied is listed as a Contract item.
   b. The total quantity for the UTB-HMA or UTB-PMA mixture in the Contract exceeds:
      i. 800 tons if the UTB-HMA or UTB-PMA item has a pay unit of tons,
      ii. 30,000 square yards if the UTB-HMA or UTB-PMA item has a pay unit of square yards, or
      iii. the Project duration is greater than 6 months.

   Note: The quantity of UTB-HMA or UTB-PMA measured in tons shall be determined from the material documentation requirements set forth in the UTB-HMA or UTB-PMA item specification.

   c. The difference between the posted *Asphalt Base Price* and *Asphalt Period Price* varies by more than $5.00 per ton.

d. No Asphalt Adjustment Cost will be applied to the liquid emulsion that is specified as part of the UTB-HMA or UTB-PMA mixture system.

III. For Asphalt Rubber Chip Seal (ARCS) treatments:

a. The ARCS treatment for which the adjustment would be applied is listed as a Contract item.

b. **The total quantity for the ARCS treatment in the Contract exceeds 30,000 square yards or the Project duration is greater than 6 months.**

Note: The quantity of asphalt binder measured in tons used for the Asphalt Rubber Chip Seal treatment shall be determined from the material documentation requirements set forth in the ARCS item specification. The Asphalt Adjustment Cost will also be applied to the asphalt binder used to pre-coat the cover aggregate as part of the ARCS and will be considered as a portion of the total tons of binder for the treatment. The additional quantity of binder measured in tons will be determined based on a percentage of the cover aggregate weight per the requirements set forth in the ARCS item specification.

c. The difference between the posted *Asphalt Base Price* and *Asphalt Period Price* varies by more than $5.00 per ton.

Regardless of the binder used in all mixtures or treatments, the Asphalt Adjustment Cost will be based on PG 64-22.

The Connecticut Department of Transportation (CTDOT) will post on its website, the average per ton selling price (asphalt price) of the performance-graded binder. The average is based on the high and low selling price published in the most recent available issue of the **Asphalt Weekly Monitor®** furnished by Poten & Partners, Inc. under the "East Coast Market – New England, New Haven, Connecticut area," F.O.B. manufacturer's terminal.

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

Method of Measurement:

A.

Formula A: HMA x [PG%/100] x [(*Period Price - Base Price*)] = $ ____

Where:

- **HMA:**

1. For HMA, PMA, UTB-HMA, UTB-PMA, TFWC, BRIC, and SMA mixtures with pay units of tons:

The quantity in tons of accepted HMA, PMA, UTB-HMA, UTB-PMA, TFWC, BRIC, or SMA mixture measured and accepted for payment.

2. For UTB-HMA and UTB-PMA mixtures with pay units of square yards:

The quantity of UTB-HMA and UTB-PMA mixture delivered, placed, and accepted for payment, calculated in tons as reported according to the Material Documentation provision of the UTB-HMA and UTB-PMA specification.

- **Asphalt Base Price**: The asphalt price posted on the CTDOT website 28 days before the actual bid opening posted.
- **Asphalt Period Price**: The asphalt price posted on the CTDOT website during the period the HMA, PMA, UTB-HMA, UTB-PMA, TFWC, BRIC, or SMA mixture was placed.
- **PG%** (Performance-Graded Binder percentage):
  1. For HMA or PMA mixes:
     - PG% = 4.5 for HMA S1 and PMA S1
     - PG% = 5.0 for HMA S0.5 and PMA S0.5
     - PG% = 6.0 for HMA S0.375, PMA S0.375, HMA S0.25 and PMA S0.25
  2. For UTB-HMA, UTB-PMA, TFWC, BRIC, and SMA mixes:
     - PG% = Design % PGB (Performance Graded Binder) in the approved job mix formula, expressed as a percentage to the tenth place (e.g. 5.1%)

B. For Asphalt Rubber Chip Seal:

Formula B: Total Tons x [(*Period Price - Base Price*)] = $ ____

Where:

- **Total tons:** The tons of asphalt binder for each lot of asphalt rubber produced, as reported according to the Testing and Certification article of the specification for Asphalt Rubber Chip Seal, and the tonnage of binder used to coat the cover aggregate calculated as follows: 0.6% x tons of cover aggregate.
- **Asphalt Base Price**: The asphalt price posted on the CTDOT website 28 days before the actual bid opening posted.
- **Asphalt Period Price**: The asphalt price posted on the CTDOT website during the period the Asphalt Rubber Chip Seal mixture was placed.

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

Basis of Payment:

The "Asphalt Adjustment Cost" will be calculated using the applicable formula(s) indicated above. A payment will be made for an increase in costs. A deduction from monies due the Contractor will be made for a decrease in costs.

The sum of money shown on the Estimate and in the itemized proposal as "Estimated Cost" for this item will be considered the bid price although the adjustment will be made as described above. The estimated cost figure is not to be altered in any manner by the bidder. If the bidder should alter the amount shown, the altered figure will be disregarded and the original cost figure will be used to determine the amount of the bid for the Contract.

Pay Item	**Pay Unit**
Asphalt Adjustment Cost	est.

ITEM #0503866A - REMOVAL OF EXISTING CULVERT (SITE NO. 1)

Work under this item shall meet the requirements of Section 5.03- Removal of Superstructure of the Standard Specifications as amended and supplemented herein.

5.03.01 - Description: *Replace the first sentence with the following:*

This work shall consist of the removal and satisfactory disposal of portions of the existing culverts, headwalls and wingwalls in stages as shown on the plans or as directed by the Engineer. Items to be removed and disposed shall include, asphalt coated corrugated metal and concrete box culverts, concrete sections adjacent to the existing culvert at the inlet and/or at the outlet and other items that may be attached thereto.

5.03.03 - Construction Methods: *Supplement with the following:*

1. **Submittals**: *Add the following:*

   The Contractor shall include computations to supplement the working drawings for the methods of removal. The submittal shall also address the precautionary measures required for the protection of environmentally sensitive areas and the adjoining properties.

2. **Removal:** *Add the following:*

   Removal of culvert shall be in accordance with the methods proposed by the Contractor and approved by the Engineer.

   The Contractor shall consider the environmental sensitivity of the brook and surrounding wetlands during the removal process.

4. **Damage Mitigation:** *Add the following:*

   The Contractor shall take necessary precautions to prevent debris from dropping into the river. Culvert removal shall not result in damage to any permanent construction (new or existing) or the brook area. If damage does occur, it shall be repaired at the Contractor's expense and approved by the Engineer. Portions of existing culvert will remain in temporary service for use in water handling operations. The Contractor's removal sequence and methods shall consider this need and restore to operation if necessary.

5.03.04 - Method of Measurement: *Delete the entire article and replace with the following:*

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

5.03.05 - Basis of Payment: *Replace the second and third paragraphs with the following:*

This work will be paid for at the Contract lump sum price for "Removal of Existing Culvert (Site No. 1)" which shall include all materials, equipment, tools, labor, and all work incidental to the removal of the existing culvert and headwall, and wingwalls, and disposal of waste materials.

Pay Item	Pay Unit
Removal of Existing Culvert (Site No. 1)	l.s.

ITEM #0514718A – PRECAST CONCRETE WALLS

Description: Work under this item consists of fabrication, furnishing, transporting and installing Precast Concrete headwalls and Precast Concrete cutoff and return walls at the inlet and outlet of the proposed box culverts of Bridge 06955 as shown on the plans and as ordered by the Engineer. This item also includes all reinforcing steel as shown on the plans and the work to install rail post anchorages and utility hanger anchorages. This item shall also include the development of an Assembly Plan for the erection of the precast elements. The use of cast-in-place concrete will be considered for substitution at no additional cost to the Town.

Materials:

- The concrete mix design shall meet the requirements of M.14.01, Class PRC05060, and shall be submitted to the Engineer.
- All reinforcing steel shall be galvanized and shall meet the requirements of M.06.01.
- All lifting fixtures and miscellaneous hardware cast into precast concrete components shall be galvanized in accordance with ASTM A153 or ASTM B695 Grade 50. All portions of the lifting and seating devices shall be recessed from the finished concrete surface.
- Non-shrink grout shall meet the requirements of M.03.05 and be suitable for submerged applications.

Construction Methods:

1. Submittals: All submittals shall include a title sheet with the following:

- Project number, town, and crossing.
- Bridge number, when shown on the plans.
- Design code, as applicable.
- Contact information for fabricator – contact information shall include name and address of the fabricator and the name of contact person with phone number and email address.

(a) Shop Drawings - Precast Concrete Components: Prior to fabrication, the Contractor shall submit an individually packaged set of Shop Drawings for the precast concrete components for each location to the Engineer for review, in accordance with the plans and 1.05.02. Each Shop Drawing package shall include details necessary for fabrication of each unique component, handling, and installation of the precast concrete components, supporting documents for all materials incorporated into the precast concrete components and for other materials provided by the fabricator.

(b) Working Drawings - Lifting and Seating Devices: Prior to fabrication, the Contractor shall submit Working Drawings and supporting computations for the embedded lifting and seating devices required for the handling and installation of the precast concrete components at each precast concrete location to the Engineer for review in accordance with 1.05.02. Prior to applying load to the embedded devices, the concrete shall attain the minimum concrete compressive strength associated with the safe working load of the device.

(c) Working Drawings - Installation of Precast Concrete Components: Prior to installation of the precast concrete components, the Contractor shall submit Working Drawings and supporting computations for the lifting and placement of the precast concrete components to the Engineer for review in accordance with 1.05.02. Cranes shall be operated in accordance with the Connecticut Department of Public Safety regulations. The Contractor shall be responsible for verifying the weight of each lift. The Working Drawing submittal shall include the following:

- Plan of the work area showing all structures, roads, Federal and State regulated areas as depicted on the plans, overhead and subsurface utilities, property lines, or any other information relative to erection. No picks shall be allowed over vehicular or pedestrian traffic.
- A detailed narrative describing the lifting and installation sequence.
- Manufacturer's data sheet for the crane(s) including the load/capacity chart. The capacity of the crane shall be adequate for the total lift/pick load including rigging, spreaders, and other materials.
- Manufacturer's data sheets and product data sheets for all rigging (slings, spreader bars, blocks, etc.), lifting devices, and other connecting equipment and hardware listing the number, type, size, arrangement, and capacity of each.
- Location of each crane for each pick.
- Crane support measures, including any support beneath the outriggers such as bearing pads, crane mats, planking or special decking, or other means to transfer the crane's total weight (including the lifted load) into the earth or structure beneath it.
- Delivery location of each component.
- Boom length and the lift and setting radius for each pick (or maximum lift radius).
- Pick point location(s) on each component.
- Lifting weight of each component including rigging (clamps, spreader beams, etc.)

(d) Product Data – Field Installed Materials: Prior to installation of the precast concrete components, the Contractor shall submit product data for field installed materials, such as non-shrink grout, joint seal, etc., not addressed in other submissions to the Engineer for review in accordance with 1.05.02.

2. Fabrication and Manufacture: The fabrication and manufacture of the precast concrete components shall meet the requirements of M.08.02-4 as supplemented by the following:

(a) Reinforcing Steel: Reinforcing steel shall be fabricated and installed in accordance with Articles 6.02.03-2 through 6.02.03-5. The welding of reinforcement is not permitted.

(b) Test Cylinders: During the casting of the components, the Contractor shall cast a minimum of four 4 inch × 8-inch test cylinders in accordance with AASHTO T23 during each production run. Cylinders shall be cured under the requirements of ASTM C31 and shall be used to confirm that the concrete meets the requirements of M.03.02.

(c) Placing Concrete: Concrete shall not be deposited in the forms until the Contractor has inspected the reinforcing steel, including all other embedded components, and has documented such inspection.

Concrete shall not be deposited into the forms when the ambient temperature is below 40°F or above 100°F unless adequate heating or cooling procedures have been previously approved by the Engineer. The concrete temperature shall be 60°F to 90°F at the time of placement.

Truck-mixed or transit-mixed concrete will not be allowed.

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 the casting operation and the product.

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

The concrete shall be vibrated internally, or externally, or both, as needed to provide adequate flow and consolidation of the concrete. The vibration shall be provided in such a manner as to avoid displacement of reinforcing steel, forms, or other components. There shall be no interruption in the placement of concrete. Concrete shall be placed and vibrated sufficiently to produce a surface free from imperfections such as honeycombing, segregation, cracking, or checking.

Any deficiencies noted in the components may be cause for rejection.

(d) Finishing: All fins, runs, or mortar shall be removed from the concrete surfaces which will remain exposed. Form marks on exposed surfaces shall be smoothed by grinding. All exposed, outside concrete surfaces shall be given a grout clean-down finish in accordance with 6.01.03-II-10.

(e) Handling and Storage: Any precast concrete components damaged during storage, transportation or handling shall be repaired or replaced by the Contractor, at no additional cost to the State, as directed by the Engineer.

(f) Repairs: The Contractor shall submit to the Engineer, for review, any proposed methods or materials to be used in the repair of precast concrete components or defective surfaces. Precast concrete components with defective area greater than 10% as determined by the Engineer will be rejected.

3. Fabrication Tolerances: Tolerances of forming precast concrete headwall sections shall be as follows:

(a) Height of Headwall: The height of a headwall shall not vary from the designed height by more than 1 inch in any headwall.

(b) Headwall Thickness: The headwall thickness shall be within 1/4 inch of the thicknesses shown in the design.

(c) Length of Headwall: The length of a headwall shall not vary from the designed length by more than 1/2 inch in any headwall.

4. Pre-assembly of Headwalls: Headwalls shall conform to all dimensions within tolerances specified herein. Headwalls shall be pre-assembled onto precast arch sections, complete with fasteners, except for grout, to confirm alignment. The Department shall be given at least 2 working days' notice to inspect and evaluate the headwalls prior to shipping.

5. Installation: The installation of the precast concrete headwalls and components shall be in accordance with the plans and the following:

(a) The installation of the precast concrete headwalls shall proceed as required by the sequence of construction, stage construction plans, and the special provisions entitled "Prosecution and Progress" and "Maintenance and Protection of Traffic."

(b) After its installation, any headwall, as determined by the Engineer, not acceptable in vertical or horizontal alignment for any reason, including displacement, excess camber, or misfit, shall be removed by the Contractor and correctly installed, as directed by the Engineer and at the Contractor's expense.

(c) All portions of the lifting and seating devices that extend to or beyond the finished concrete surface shall be removed. All fixtures or holes cast into the sections for lifting or seating shall be completely filled with non-shrink grout and finished smooth and flush with the adjacent concrete surface.

The surface preparation, mixing, placing, curing, and finishing of the non-shrink grout shall follow the written instructions provided by the manufacturer of the grout. The Contractor shall furnish the Engineer with copies of the instructions.

(d) Joint seal shall be placed along the headwall and arch section interface as shown on the plans.

Method of Measurement: The work for Precast Concrete Walls will be measured for payment by the cubic yards of precast concrete headwalls, cut-off walls, and return walls as dimensioned on the plans, completed, and accepted.

Galvanized reinforcement will not be measured for payment.

Basis of Payment: The work will be paid for at the Contract unit price per cubic yard for "Precast

Concrete Walls," completed in place and accepted, which price shall include all equipment, materials, tools and labor incidental to the manufacture, shipping, repair, and installation of the precast concrete headwalls, cut-off walls, and return walls of the specified size(s) at the locations shown on the plans.

Pay Item	Pay Unit
Precast Concrete Walls	c.y.

ITEM #0601087A – ARCHITECTURAL FORM LINERS

Description: The work shall include the architectural finish, by use of a form liner, of colored formed concrete surfaces using simulated stone form liners, and a color stain system designed to closely duplicate the appearance of natural stone as described herein. Patterning of simulated stone masonry shall appear natural and non-repeating. Form liner will be used on wingwalls and outside face of parapets as indicated. This item shall include the following:

1) Furnishing, installing, and removing architectural form liner that will be used to produce a simulated stone facing on exposed surfaces of wingwalls and headwalls, and to the limits shown on the plans.

2) Grouting, patching and hand or tool finishing work after the forms are removed as necessary to remove lines and irregularities on the finished facing that are not in keeping with the intended "look" of the simulated stone facing.

3) Color staining of the concrete surfaces, as may be required by the style of simulated stone facing used, including test panels to establish colors and patterns of staining before initiating this portion of the work.

4) Preparation, submittal and approval of pattern layout drawings, maximizing re-use and minimizing cutting of form liners, for each wingwall and headwall, or other surface where form liners are to be used.

Materials: Form Liners shall be reusable, made of high-strength urethane, easily attachable to forms. Form liners shall not compress more than ¼ inch when concrete is poured at a rate of 9 vertical feet per hour. Form liners shall be removable without causing deterioration of the form liner and without causing damage to the surface of the underlying concrete.

Acceptable concrete form liner manufacturers and form liner patterns are:

- Custom Rock Formliners, as manufactured by Custom Rock International, Inc., St. Paul, MN 55116, (800) 637-2447. Pattern: No. 2209 – New England Drystack
- Concrete Rock Surfaces, as manufactured by Concrete Rock Surfaces, LLC, 17B Trowbridge Drive Bethel, Connecticut 06801 (203) 743-3693. Pattern CRS 1352 – New England Drystack
- Fitzgerald Formliners, as manufactured by Fitzgerald Formliners, 1500 East Chestnut Street, Santa Ana CA 92701, (800) 547-7760. Pattern: No. 17033 – Sierra Drystack
- An equal form liner approved by the Engineer, which conforms to the parameters and is of similar appearance to the patterns of the above.

Release Agent - The release agent shall be compatible with the form liners, simulated stone masonry and with the color stain system, as recommended by the manufacturer.

Form Ties: Will be made of either metal or fiberglass. Metal ties which result in a portion of the tie permanently embedded in the concrete shall be designed to separate at least one inch back from finished surface leaving only a neat hole that can be plugged with patching material. Contractor shall submit the type of form ties for approval prior to this work.

Grout – A grout suitable for the application of finishing concrete and correcting irregularities in the finished facing shall be selected by the Contractor and submitted for approval by the Engineer prior to use.

Construction Methods: In accordance with Section 6.01.03 and as indicated.
The Contractor or Subcontractor who installs the form liners and performs the work shall demonstrate at least three (3) years of experience placing vertically formed architectural concrete and custom color staining, including training in the manufacturer's special techniques as may be required in achieving realistic surfaces. Evidence and color pictures of projects constructed over the last three (3) years shall be submitted prior to approval.

An authorized representative from both the form liner manufacturer and the color stain manufacturer (if color stain is used) shall be present at the site for installation of the facing test panel and during placing of all structural concrete utilizing form liners.

Prior to initiating any work, a meeting shall be scheduled by the Contractor to assure full understanding of the work by all parties involved and to coordinate the work. Included for attendance shall be the manufacturer's authorized representatives, the Contractor, the Subcontractor (installer), and the Engineer.

The Contractor shall submit the following for approval by the Engineer prior to beginning the form operations:

Photographs - Color photographs of at least three (3) similar projects recently performed by the Contractor (or his Subcontractor) and at least three (3) similar projects recently produced by the manufacturer.

Form Tie Sample - A sample, description, and demonstration of the form tie the Contractor proposes to use.

Pattern Layout Drawings (3 copies) - Layout drawings shall be the plan, elevation, and details showing the overall pattern, joint locations, form tie locations, weephole locations, drainage and other protrusions, and any other special considerations. These drawings shall maximize re-use of form liners and minimize cutting of form liners and shall be approved prior to installation of the form liners.

Concrete Facing Test Panel - At least 30 days prior to placing structural concrete requiring form liners, a concrete test panel shall be built on-site, using the same materials and methods of work

force that will be used for the project. Location of the test panel shall be approved by the Engineer, and the concrete test panel shall conform to the following:

1. The size of the test panel shall be 6' by 9', or larger if needed to adequately illustrate the pattern selected.
2. The test pattern shall contain an area demonstrating simulated stone masonry butt joint, the continuation of the pattern through an expansion joint and an outside corner.
3. The test panel shall include staining as may be required for the selected pattern.
4. The test panel shall be removed when it is no longer needed, to the satisfaction of the engineer.

All work associated with the process of form lining, texturing and color staining of the hardened concrete shall be performed in strict accordance with the manufacturer's recommendations and as approved by the Engineer. The Contractor shall:

- Provide, cut and install the form liners in accordance with the approved pattern drawings for each structural component
- Provide and apply manufacturer's release agent
- Hand carve top exposed texture surfaces (as applicable)
- Remove form liner after concrete is sufficiently set to avoid damage
- Patch, grind or brush hammer form liner seams as required
- Power wash hardened concrete just prior to staining
- Power wash and patch form liners as may be required before re-use

Form Liners: Design and pattern of the form lined concrete surfaces shall follow the manufacturer's standard drawing and the approved pattern layout drawings. The completed color and formed concrete surfaces shall match the pattern, color and texture of the approved test panel and shall accurately simulate the appearance of real stone, demonstrating the colors that may be apparent due to aging, rusting, and staining from oxidation, soil and/or vegetation.

All form liners shall be placed with less than ¼" separation between form liners. Form liners shall be securely attached to the forms with wood or sheet metal screws, securely bolted through the forms with bolts secured into threaded inserts in the back of the form liners, or securely bolted through the form liner and forming system with flat head bolts inserted in a pattern joint, all according to manufacturer's recommendations for the pattern and form liner used.

Construction adhesives may be used but not on re-usable form liners.

Release of Form Liners: Only manufacturer recommended form release agents shall be utilized and shall be applied to the form liners before the concrete is placed. Release agents shall be applied in strict accordance with release agent manufacturer recommendations. Hand-charged sprayers will only be allowed if a thin uniform coating of release agent is obtained on the form liner.

Form liners shall be removed from the wall within 24 hours of placing the concrete. The form liners may be detached from the forms and then removed from the concrete, or they may remain attached to the forms and the entire forming system removed from the concrete. Remove the form liners from the top, down. Curing of concrete may be accomplished with form liners and forms placed back against the wall after the initial detachment. Curing compounds shall not be used, as they are incompatible with the color staining material.

Care & Cleaning of Form Liners: Form liners shall be cleaned the same day they are removed from the wall with a power wash and mild detergent. Synthetic brushes with stiff bristles may be used on stubborn areas. Mild acid washes may also be used. Solvents shall not be used. If necessary, patching of holes shall be performed with 100% clear silicone caulk. Form liners shall be stored inside or under a protective, non-transparent cover, in a vertical position.

Wall Patching and Preparation: After form liners are removed from the hardened concrete, the textured uncolored surface shall be prepared for color staining. All holes larger than 3/8” in greatest principal dimension shall be filled with concrete patching material as approved by the Engineer. All honeycombed areas shall be filled and textured to match surrounding areas. Seam lines and other unnatural protrusions shall be ground do wn to match adjacent areas with a hand- held power grinder using discs made for concrete. Grinding of seams shall be performed immediately after removal of the form liners. Perform final bush hammering to blend defects and ground areas into the final rock texture. In particular, the process of wall patching and preparation shall be subject to approval of the manufacturer and Engineer.

Color Staining: All color staining shall be performed by the manufacturer, or their authorized representative, and the hardened concrete shall be a minimum of 30 days old before color staining is applied. The Contractor shall power wash the wall to free it from latent, dirt, oil and other objectionable materials. After the wall has dried, the color staining process is applied using colors approved by the Engineer. Color staining shall be applied in such a way that the stones shall have individual colorations from one to the other. Water-based stains shall be used in air temperatures ranging from 50 degrees F to 100 degrees F. Solvent-based stains shall be used in air temperatures of 50 degrees F and below, but in no case when the temperature of the hardened concrete is 40 degrees F and falling.

All staining work shall be scheduled after backfilling is completed to avoid contaminating or damaging of the surfaces. After staining is complete and approved, and topsoil shall be placed in a way that does not damage the finished surfaces.

Method of Measurement: The portion of the work covered under this special provision and associated with construction of textured and colored formed concrete surfaces using simulated stone form liners and a color stain system, shall be measured for payment by the actual number of square yards of concrete patterned on cast-in-place concrete surfaces, within the pay limits shown on the drawings or as approved by the Engineer.

Basis of Payment: This item will be paid for at the Contract unit price per square yard of "Architectural Form Liners," complete and accepted in place, which price shall include submittals, Pre-Work Meeting, all surface preparation, furnishing, storing and applying the system, technical representative and Quality Control testing, and any necessary repairs and remediation work as well as all materials, equipment, tools, labor incidental to this work.

Pay Item	Pay Unit
Architectural Form Liners	s.y.

ITEM #0601131A – 20’ X 8’-0” PRECAST CONCRETE BOX CULVERT

ITEM #0601142A – 20’ X 5’-6” PRECAST CONCRETE BOX CULVERT

Description: Work under this item consists of furnishing and installing a precast concrete box culvert(s) as shown on the plans and as ordered by the Engineer. This item also includes all hardware, inserts, dowels for connections, reinforcing steel and joint materials as shown on the plans.

Materials:

- The concrete mix design shall meet the requirements of M.14.01, Class PRC05060, and shall be submitted to the Engineer.
- All reinforcing steel, including dowel bar mechanical connectors, shall be galvanized and shall meet the requirements of M.06.01.
- All threaded concrete inserts, lifting fixtures, and miscellaneous hardware cast into precast concrete components shall be galvanized in accordance with ASTM A153 or ASTM B695 Grade 50. All portions of the lifting and seating devices shall be recessed from the finished concrete surface.
- Non-shrink grout shall meet the requirements of M.03.05 and be suitable for submerged applications.
- Gaskets shall meet the requirements of ASTM D1056, C1677 or C990.
- Geotextiles shall be the “Separation – Class 1” type and shall be selected from the Department’s Qualified Product List.

Construction Methods:

1. **Submittals:** All submittals shall include a title sheet with the following:
   - Project number, town, and crossing.
   - Bridge number, when shown on the plans.
   - Design code, as applicable.
   - Contact information for fabricator – contact information shall include name and address of the fabricator and the name of contact person with phone number and email address.

   (a) Shop Drawings - Precast Concrete Components: Prior to fabrication, the Contractor shall submit an individually packaged set of shop drawings for the precast concrete components for each precast box culvert location to the Engineer for review, in accordance with the plans and 1.05.02. Each shop drawing package shall include details necessary for fabrication of each unique component, handling, and installation of the precast concrete components, supporting documents for all materials incorporated into the precast concrete components and for other materials provided by the fabricator.

   (b) Working Drawings - Lifting and Seating Devices: Prior to fabrication, the Contractor shall submit working drawings and supporting computations for the embedded lifting and seating devices required for the handling and installation of the precast concrete components at each box culvert location to the Engineer for review in accordance with 1.05.02. Prior to applying load to the embedded devices, the concrete shall attain the

minimum concrete compressive strength associated with the safe working load of the device.

(c) Working Drawings - Installation of Precast Concrete Components: Prior to installation of the precast concrete components, the Contractor shall submit working drawings and supporting computations for the lifting and placement of the precast concrete components, to the Engineer for review in accordance with 1.05.02. Cranes shall be operated in accordance with the Connecticut Department of Public Safety regulations. The Contractor shall be responsible for verifying the weight of each lift. The working drawing submittal shall include, but not be limited to the following:

- Plan of the work area showing all structures, roads, railroad tracks, Federal and State regulated areas as depicted on the plans, overhead and subsurface utilities, property lines, or any other information relative to erection. No picks shall be allowed over vehicular, pedestrian, railway or vessel traffic.
- A detailed narrative describing the lifting and installation sequence.
- Manufacture's data sheet for the crane(s) including the load/capacity chart. The capacity of the crane shall be adequate for the total lift/pick load including rigging, spreaders and other materials. In the area of railroads and navigable waterways, the capacity shall be as required by the regulatory authorities.
- Manufacturer's data sheets and product data sheets for all rigging (slings, spreader bars, blocks, etc.), lifting devices, and other connecting equipment and hardware listing the number, type, size, arrangement, and capacity of each.
- Location of each crane for each pick.
- Crane support measures, including any support beneath the outriggers such as bearing pads, crane mats, planking or special decking, or other means to transfer the crane's total weight (including the lifted load) into the earth or structure beneath it.
- Delivery location of each component.
- Boom length and the lift and setting radius for each pick (or maximum lift radius).
- Pick point location(s) on each component.
- Lifting weight of each component including rigging (clamps, spreader beams, etc.)

(d) Product Data – Field Installed Materials: Prior to installation of the precast concrete components, the Contractor shall submit product data for field installed materials, such as non-shrink grout, geotextile, etc., not addressed in other submissions to the Engineer for review in accordance with 1.05.02.

2. Fabrication and Manufacture: The fabrication and manufacture of the precast concrete components shall meet the requirements of M.08.02-4 as supplemented by the following:

(a) Reinforcing Steel: Reinforcing steel shall be fabricated and installed in accordance with Articles 6.02.03-2 through 6.02.03-5. The welding of reinforcement is not permitted.

(b) Test Cylinders: During the casting of the components, the Contractor shall cast a minimum of four 4-inch × 6-inch test cylinders in accordance with AASHTO T23 during each production run. Cylinders shall be cured under the requirements of ASTM C31 and shall be used to confirm that the concrete meets the requirements of M.03.02.

(c) Placing Concrete: Concrete shall not be deposited in the forms until the Contractor has inspected the reinforcing steel, including all other embedded components, and has documented such inspection.

Concrete shall not be deposited into the forms when the ambient temperature is below 40°F or above 100°F unless adequate heating or cooling procedures have been previously approved by the Engineer. The concrete temperature shall be 60°F to 90°F at the time of placement.

Truck-mixed or transit-mixed concrete will not be allowed.

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 the casting operation and the product.

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

The concrete shall be vibrated internally, or externally, or both, as needed to provide adequate flow and consolidation of the concrete. The vibration shall be provided in such a manner as to avoid displacement of reinforcing steel, forms, or other components. There shall be no interruption in the placement of concrete. Concrete shall be placed and vibrated sufficiently to produce a surface free from imperfections such as honeycombing, segregation, cracking, or checking.

Any deficiencies noted in the components may be cause for rejection.

(d) Finishing: All fins, runs, or mortar shall be removed from the concrete surfaces which will remain exposed. Form marks on exposed surfaces shall be smoothed by grinding. All exposed, outside concrete surfaces shall be given a grout clean-down finish in accordance with 6.01.03-10.

(e) Handling and Storage: Any precast concrete components damaged during storage, transportation or handling shall be repaired or replaced by the Contractor, at its own expense, as directed by the Engineer.

(f) Repairs: The Contractor shall submit to the Engineer, for review, any proposed methods or materials to be used in the repair of precast concrete components or defective surfaces. Precast concrete components with defective area greater than 10% as determined by the Engineer will be rejected.

3. Fabrication Tolerances: Tolerances of forming precast concrete box sections shall be as follows:

(a) Internal Dimensions: The internal dimensions shall be within 1% of the design dimensions or within 1 1/2 inches, whichever is less.

(b) Roof, Floor and Wall Thickness: The roof, floor and wall thickness shall be within 1/4 inch of the thicknesses shown in the design.

(c) Laying Length of Opposite Surfaces: Variations in laying lengths of two opposite surfaces of the box section shall be less than 1/8 inch/foot of internal span up to 3/4 inch maximum.

(d) Length of Section: The length of a section shall not vary from the designed length by more than 1/2 inch in any box section.

4. **Pre-assembly of Box Sections:** Box sections shall conform to all dimensions within tolerances specified herein. Adjacent sections shall be assembled without a gasket at the manufacturing plant to ensure that all tolerances are met prior to shipping. All sections that will be joined with mechanical connectors shall be pre-assembled, complete with fasteners, to confirm alignment. The Department shall be given at least 2 working days' notice to inspect and evaluate the sections prior to shipping.

5. **Installation:** The installation of the precast concrete box sections and components shall be in accordance with the plans and the following:
   (a) The installation of the precast concrete box sections shall proceed as required by the sequence of construction, stage construction plans, and the special provisions entitled "Prosecution and Progress" and "Maintenance and Protection of Traffic."
   (b) Prior to installing the inlet and outlet end box culvert sections, a bed of non-shrink grout shall be placed on the cut-off walls. The end box culvert sections shall be connected to the cut-off wall using galvanized dowels installed in cast or drilled holes and bonded with non-shrink grout.
   (c) All box culvert lap joints shall be sealed with rubber gaskets and must provide a silt-tight fit. A positive means, through the use of seating devices, shall be used for pulling each section against the adjacent section to assure a silt-tight joint. The gasket shall be uniformly compressed to a minimum of 1/2 of its uncompressed width. The joint opening between adjacent seated sections on all interior surfaces of the culvert shall be uniform and match the width shown on the plans. The interior surfaces on either side of the lap joints of the adjacent seated sections shall form a smooth and continuous plane, free from irregularities.
   (d) After its installation, any box section, as determined by the Engineer, not acceptable in vertical or horizontal alignment for any reason, including but not limited to settlement, displacement, excess camber or misfit, shall be removed by the Contractor and correctly installed, as directed by the Engineer and at the Contractor's expense.
   (e) The lap joints on the exterior of the roof and the interior of the floor and the lap joints on the interior and exterior of the walls (full height on each side) shall be filled with non-shrink grout after seating the sections. The exposed portions of the lap joints within the haunches or fillets on the interior of the culvert sections shall also be filled with non-shrink grout. The non-shrink grout shall be finished smooth and flush with the adjacent concrete surface.

   All portions of the lifting and seating devices that extend to or beyond the finished concrete surface shall be removed. All fixtures or holes cast into the sections for lifting or seating shall be completely filled with non-shrink grout and finished smooth and flush with the adjacent concrete surface.

   The surface preparation, mixing, placing, curing, and finishing of the non-shrink grout shall follow the written instructions provided by the manufacturer of the grout. The Contractor shall furnish the Engineer with copies of the instructions.

Prior to the passage of flowing water over the with non-shrink grout, the non-shrink grout shall attain a minimum compressive strength of 3,000 psi.

(f) Geotextile shall be placed on the exterior surface of the roof and walls of the culvert over the lap joints between the culvert sections. The geotextile shall extend 12 inches to each side of the joint and shall be attached to the culvert with silicone caulk.

6. **Erection Tolerances:** The Contractor shall be responsible for ensuring the overall length of the box culvert meets the layout requirements on the plans within all acceptable tolerances as specified in the contract.

Method of Measurement: The work for the precast concrete box culvert will not be measured for payment but will be paid for by the linear foot of precast concrete box culvert as dimensioned on the plans along each box culvert cell, completed and accepted.

Basis of Payment: The work for the precast concrete box culvert will be paid for at the Contract unit price per linear foot for "(Size) Precast Concrete Box Culvert," completed in place and accepted, which price shall include all equipment, materials, tools and labor incidental to the manufacture, shipping, repair and installation of the precast concrete box culvert of the specified size(s) at the locations shown on the plans.

Pay Item	Pay Unit
20' x 8'-0" Precast Concrete Box Culvert	l.f.
20' x 5'-6" Precast Concrete Box Culvert	l.f.

ITEM #0603474A - METALLIZING STRUCTURAL STEEL (SITE NO. 1)

Description: Work under this item shall consist of the surface preparation, shop application of a thermal spray (metallizing) coating, shop application of a sealer and topcoat, and field painting and touch-up painting operations of new structural steel, as shown on the plans, or as directed by the Engineer.

Metallizing under Site No. 1 shall include all utility support related structural steel, metal bridge rail metal bridge approach rail and related appurtenances.

Materials: Only one metallizing supplier and one sealer and topcoat manufacturer may be used for the Project including material supplied for field painting and touch-up painting operations.

Abrasives:
Abrasives shall conform to the following:

1. SSPC AB 1 for mineral slag abrasives
2. SSPC AB 2 for recycled ferrous metal abrasives
3. SSPC AB 3 for new steel abrasives

Thermal Spray Coating (TSC) Materials: The thermal spray coating (TSC) wire feedstock material used for metallizing must be 85%/15% (Zn/Al alloy) and meet the Chemical Composition requirements stated in Table 2 of AWS C2.25, classification W-ZnAl-2. The Contractor shall provide a Certified Test Report (CTR) in accordance with 1.06.07 for the feedstock from the feedstock supplier.

Sealer and Topcoat: The Contractor shall select one of the following semi-gloss topcoats of the color shown on the plans from the list below:

AkzoNobel: *International Interthane 870UHS*
Carboline: *Carbothane 133 LV*
Sherwin Williams: *Hi-Solids Polyurethane 250*
or approved equal

The Contractor shall select a sealer compatible with the topcoat chosen. The sealer shall be capable of penetrating into the body of the TSC to seal the interconnected surface porosity as defined in AWS C2.18-93R.

The sealer and topcoats shall be packaged and sealed, in the original container with labeling bearing the manufacturer's name, type of material, brand name, shelf life, batch number, and instructions for mixing and thinning. The topcoat shall meet the color and gloss retention performance criteria of SSPC Paint 36, Level 3, for accelerated weathering. The Contractor shall provide Materials Certificates in accordance with 1.06.07.

Caulking Materials: Caulking shall be as recommended by the coating manufacturer.

Construction Methods: The Contractor shall implement procedures that comply with this specification. If a state or local regulation is more restrictive than the requirements of this specification, the more restrictive requirements shall prevail. The Contractor must comply with all local OSHA and EPA standards and regulations, even if the regulation or standard is not specifically referenced herein.

The complete coating system shall be shop-applied except for surfaces that are otherwise listed on the plans or otherwise noted in this specification. Such surfaces shall be coated only after all members are erected, bolts are fully tensioned, and temporary deck formwork is removed. The tops of bridge girder top flanges shall be primer coated only and shall not be metallized or sealed.

Metallizing Contractor Worker Qualifications: The Metallizing Contractor shall be certified by the SSPC Painting Contractor Certification Program QP-6, entitled "Thermal Spray (Metallizing) Contractor Certification Program" in the *enclosed shop* category or be certified in the American Institute of Steel Construction (AISC) Sophisticated Paint Endorsement (SPE) category – *enclosed shop* P1 or *covered shop* P2. A list of approved contractors can be found on the AISC website at www.AISC.org.

The Metallizing Contractor shall be fully certified, including endorsements, for the duration of the time they are doing the surface preparation and coating application. The certification(s) must be kept current for the duration of the Project work. If a Contractor's, subcontractor's or any craft-worker's certification expires, the firm will not be allowed to do any work on this item until the certification is reissued. Requests for extension of time for any delay to the completion of the Project due to an inactive certification will not be considered, and liquidated damages will apply.

Each person applying a metallized coating shall be qualified according to ANSI/AWS C2.18-93R.

The Metallizing Contractor shall have a certified NACE Coatings Inspector Program (CIP) Level 3 inspector, or approved equal, on staff for the duration of the project and actively engaged in the metallizing activities before during and after the coating application.

The Metallizing Contractor and subcontractors are required to have at least one (1) **Coating Application Specialist (CAS) (SSPC ACS/NACE No. 13)** – certified (Level II-Interim Status Minimal) craft-worker. CAS-certified (Level II-Interim Status-Minimal) craft-worker(s) are required for all crews/craft-workers up to four (4) crew members. For each crew larger than four (4), an additional CAS-certified (Level II-Interim Status-Minimal) craft-worker shall be present on each painting/blasting crew during blast cleaning and spray application (Atmospheric and Immersion Service) operations. A crew-member is a person who is on the job performing hand-held nozzle blast cleaning and/or spray application of protective coatings on a steel structure. The certification(s) must be kept current for the duration of the Project work. If a Contractor's, subcontractor's or any craft-worker's certification expires, the firm will not be allowed to do any work on this item until the certification is reissued.

Submittals: The Contractor shall submit the following to the Division of Materials Testing, the Designer of Record and the Project Engineer, for review a minimum of thirty (30) days prior to metallizing.

Metallizing Quality Control (QC) Plan, including:

A. Written procedures for the preparation of surfaces and the application of the metallizing, the sealer, and topcoat in the shop; and procedures for the repair and touch up of any damage that occurs to the newly applied metallizing or coatings. Shop and field repair procedures must be clearly identified.
B. Hold points for surface preparation, metallizing application, adhesion testing of metallizing application and top coating thickness measurements.
C. Identification of the metallizing and coating materials to be applied, including manufacturer's name, product names, and product numbers.
D. Product Data Sheets, VOC levels for liquid coatings, MSD sheets, and written application instructions including mixing requirements, proposed thinners, and manufacturer's recommended thinner amounts for liquid coatings.
E. Identification of the type and brand name of the abrasive proposed for use.
F. Metallizing Manufacturer's Slip Critical Class B Certificate of Compliance.
G. Copies of qualification records along with continuity logs for all thermal spray operators.
H. Copies of NACE CIP Level 3 certifications, or approved equal, for all staff required to possess same. Copies of CAS (SSPC ACS/NACE No. 13) certifications, for all staff required to possess same.
I. Identification of the thermal spray equipment.
J. A work schedule that includes timelines for surface preparation, metallizing, sealing and top coating.

Notification: Contact the Division of Materials Testing at DOT.Steel@ct.gov a minimum of two (2) weeks prior to the start of work.

Surface Preparation:

A. Weld Spatter, Sharp Edges, and Holes: All slag, flux deposits, and weld spatter and steel irregularities such as fins, tears and slivers shall be removed from the surfaces to be metallized. Any resulting burrs from such removal shall be ground smooth, including burrs around holes. All corners and edges shall be rounded to a 0.0625-inch radius or chamfered to a 0.0625-inch chamfer.
B. Cleaning of Steel: All visible contaminants shall be removed from surfaces in accordance with SSPC-SP 1 using only solvents or detergents.
C. Compressed Air Cleanliness: The cleanliness of the compressed air shall be confirmed in accordance with ASTM D4285 at least once per shift for each compressor system.
D. Surface Requirements: The required surface preparation shall meet SSPC SP 5. Surface preparation shall not be performed under damp environmental conditions or when the surface temperature of the steel is less than 5°F above the dewpoint temperature as determined by a surface thermometer and an electric or sling psychrometer.

E. Abrasives/Profile:
   1. The Contractor shall use abrasives that are free of oil, soluble salts and other similar substances that could contaminate the surface.
   2. A uniform sharp angular profile with a profile of 3.0 to 6.0 mils shall be provided in accordance with ASTM D4417, Method B or C.

F. Acceptance Prior to Metallizing: The cleaned surface shall be accepted by the Engineer before application of metallizing. Failure of the Contractor to prepare and clean the surfaces to be metallized in accordance with these specifications shall be cause for rejection by the Engineer. All surfaces that are rejected shall be re-cleaned to the satisfaction of the Engineer at no additional cost to the State.

G. Pre-Production Test Section and Bend Tests:
   1. The Contractor shall blast clean and metallize at least 9 square feet of steel surface prior to initiating the full-scale metallizing operation using the same metallizing equipment, set up, materials, and calibration and operating procedures in the test section(s) that shall be used for the production operations.
   2. Spray parameters shall be validated by passing a bend test as follows:
      a. Five (5) steel coupons 2 × 8 × 0.05 inches shall be fabricated of the same steel grade proposed as the member being coated.
      b. The coupons shall receive the same surface preparation, and metallizing as the actual member.
      c. The coupons may be fastened to larger pieces of stock during the blast cleaning and metallizing operations.
      d. Bend coupons 180 degrees around a 0.5 inch diameter mandrel.
      e. The bend test passes if there is no cracking or only minor cracking visually observed on the bend radius.
      f. The bend test fails if the coating cracks and lifts from the substrate.

      Additional coupons and testing may be required by the Engineer to establish the suitability of the surface preparation and the thermal spray coating. Full-scale metallizing shall not commence until the Engineer has inspected and approved the Test Section and coupons.

Metallizing Application:

A. Quality of Surface Preparation: The Contractor shall verify that the surface meets the specified SSPC-SP 5 surface requirements immediately prior to application of the metallized coating.

B. Surface Cleanliness: Subsequent coats shall not be applied until overspray, spent abrasive, dirt, dust, and other contaminants have been removed in accordance with SSPC-SP 1.

C. Ambient Conditions: Metallizing shall be applied when the relative humidity is less than 80%. Metallizing shall not be applied under damp environmental conditions or when the surface temperature of the steel is less than 5°F above the dewpoint temperature as determined by a surface thermometer and an electric or sling psychrometer.

D. Metallizing: The coating shall be applied by thermal spray employing multiple passes to achieve a uniform thickness of 0.008 to 0.012 inches (8-12 mils) unless otherwise specified. No single pass shall deposit more than 0.004 inches.

E. Metallizing Adhesion: Adhesion strength of the metallizing shall be 700 psi minimum as measured with approved equipment per ASTM D4541, Annex A4. Measurements shall be

taken on companion coupons 4 × 6 × 0.25 inches of the same steel grade as the member being coated and processed concurrently. If adhesion is less than 700 psi but greater than 560 psi, four (4) additional adhesion tests shall be made. If any of the additional adhesion tests are less than 700 psi, the coating shall be removed and re-applied. Any single adhesion test result less than 560 psi, will be justification for the Engineer to have the Contractor remove the entire coating. All corrective action will be at the Contractor's expense.

F. Quality Control of Metallizing Operation:
   1. The Metallizing Contractor shall verify proper spray equipment set up, calibration, and operating procedures by performing a bend test at the beginning of each work shift that metallizing is to be applied in accordance with requirements described in the Pre-Production Test Section.
   2. In addition to the bend test, a cut test shall be performed on the companion coupons, one during the production day and one at the end of each shift, to confirm that metallizing is being properly applied. The cut test consists of a single cut 1.5 inches long through the thermal spray coating to the substrate without severely cutting the substrate. A cut shall be made with a hammer and sharp chisel. The chisel cut shall be made at a shallow angle. The bond of the metallizing is considered unsatisfactory if any part of the metallizing lifts from the substrate along the cut.
   3. The Engineer shall be notified immediately of any unsatisfactory tests.

G. Bolted Connections and Other Areas:
   1. The Contractor shall state in writing to the Engineer a list of areas they believe are inaccessible prior to the start of work. The Engineer will have the final determination as to the accessibility of those areas.
   2. Bolted connections shall be processed in a manner that achieves the required Slip Critical Classification detailed on the approved steel shop drawings.
   3. Thickness in bolted, Class B, connection areas shall not exceed those listed on the Metallizing Manufacturer's Class B Slip Critical Certificate of Compliance. Under no circumstance shall any thickness reading exceed 16 mils.
   4. All connection points shall be appropriately masked off either before or after metalizing and prior to the application of seal coat.
   5. After members have been erected in the field, all previously masked areas that remain exposed shall be thoroughly cleaned and lightly sanded by hand to receive a brush-applied coat of the same sealer and topcoat used in the shop.
   6. Areas such as bolt holes, backs of snipes and other similar areas where the standard application of a metallized coating cannot be performed shall be cleaned and free of dirt and any loose overspray, and shall receive a brush applied coating of the approved coating system.
   7. The top of the top flange shall NOT be metallized but shall be coated with an inorganic zinc-rich primer from the NEPCOAT Qualified Products List. No sealer shall be applied over the zinc-rich primer.
   8. Metallized coating applied to surfaces not required to be coated may remain if found to be tightly adhered, as determined by the Engineer.

Sealer and Topcoat Application:

A. The sealer shall be applied in a single mist coat followed by a full topcoat.

1. The Metallizing Contractor shall apply the sealer in accordance with the manufacturer's recommendations, unless otherwise specified.

2. The sealer shall be applied no more than 8 hours after application of the metallizing, and in no case shall the sealer be applied over dust, rust that may have bled through (if there was not enough thickness), loose oxides or other visible contaminants that would interfere with the sealer.

3. When conventional spray equipment is used, the Contractor shall verify that the compressed air supply is clean and dry as determined by the blotter test (ASTM D4285).

4. The topcoat shall be applied to achieve a 4 to 6 mils dry film thickness and shall be applied after the seal coat has been allowed to dry as required by the recoat time in the manufacturer's written instructions, but in no case shall a coat remain exposed for longer than ten (10) calendar days prior to overcoating.

B. Coverage and Continuity: All surfaces shall be completely coated and free of voids, runs, sags or other defects. Special attention shall be given to hard-to-reach or inaccessible areas and irregular surfaces. Some configurations may require spraying from multiple directions to assure complete coverage.

C. Sealer and Topcoat Adhesion to Metallized Surfaces:
1. The Metallizing Contractor shall apply the sealer and topcoat in such a manner to assure adherence to the underlying surface. Any lifting of an underlying coat, or poor adhesion between coats or to the substrate, will require removal of the coating in the affected area to adjacent intact, adherent, coating, and reapplication of the material.
2. Topcoat adhesion shall be verified using adhesion tests in accordance with ASTM D4541 as directed by the Engineer.

D. Coating Thickness
1. Wet Film Thickness: The Contractor shall verify and document the thickness of each liquid coat at the time of application using wet film thickness gages in accordance with ASTM D4414.
2. Dry Film Thickness: The dry film thicknesses of the completed coating shall be:

Metallizing	8 to 12 mils
Topcoat	4 to 6 mils
TOTAL SYSTEM	12 to 18 mils

The Contractor shall measure the thickness of each coat using nondestructive magnetic dry film thickness gages. The procedure shall comply with SSPC-PA2 for the calibration and use of the gages, and the frequency of thickness measurements. Spot readings both 20% above and 20% below the thicknesses shown above are permitted, provided the average thicknesses are within the specified tolerances.

Field Required Coating Operations: Any areas requiring sealer or topcoat after erection shall be done in accordance with the previously submitted and approved field coating procedures and shall be in accordance with the manufacturer's recommendations.

Repair of Film Discontinuities and Damage to Coating System after Erection: A repair procedure shall be submitted for concurrence by the Engineer prior to the start of repair work.

Shipping and Storage: All materials shall be shipped and stored in a manner to prevent damage from all physical and environmental factors.
Date of Completion: The words "METALLIZED AND TOPCOATED" followed by the month and year the coating of the structure is completed along with the CTDOT Project Number and the manufacturer's abbreviations, shall be stenciled on the inside of a fascia girder at mid-depth of the girder in three (3) inch high block letters located near the abutment, so as to be clearly visible from the ground below. Paint for stenciling information shall be of a contrasting color and be compatible with the topcoat and shall be approved by the Engineer prior to application of the stenciled information.

Method of Measurement: The work under this item, being paid on a lump sum basis, will not be measured for payment.

Basis of Payment: The coating of structural steel, incorporated in the completed and accepted structure, will be paid for at the Contract lump sum price for "Metallizing Structural Steel (Site No. 1)." The lump sum price shall include all materials, equipment, tools, transportation, repairs, corrective actions, inspection access, and labor incidental thereto.

A schedule of values shall be submitted to the Engineer for review and comment prior to application of the metallizing coating.

Pay Item	Pay Unit
Metallizing Structural Steel (Site No. 1)	l.s.

ITEM #0603591A – STRUCTURAL STEEL - MISCELLANEOUS

Description: Work under this item shall consist of furnishing and installing all necessary support members, connection plates, and necessary hardware for the support of the sewer main and water line crossing Bridge 06955. This work shall be in conformance with Section 06.03 and supplemented as follows:

Materials: Steel plates and rolled shapes shall be AASHTO M270, GRADE 50 steel. All structural steel plates and shapes shall be metallized in accordance with Item# 0603474A Metalizing Structural Steel (Site No. 1). Bolts shall be ASTM A325, Type 1.

Construction Methods: Support members shall be fabricated to the dimensions shown on the plans and securely bolted into place prior to placing other components of the support system.

Method of Measurement: This work, will be measured for payment by the hundredweight (cwt.) of utility support framing installed.

Basis of Payment: This work will be paid for at the Contract unit price per hundredweight (cwt.) for Structural Steel - Miscellaneous, complete and accepted, which price shall include all furnishing, fabricating, transporting, storing and all materials, equipment, tools, and labor incidental thereto.

The cost of metalizing shall be included in Item# 0603474A Metalizing Structural Steel (Site No. 1).

Pay Item	Pay Unit
Structural Steel - Miscellaneous Bridge (Sanitary Sewer)	CWT.

ITEM #0703031A - ROCK WEIR

Description: Work under this item shall consist of furnishing and placing boulders to create a rock weir within an existing or proposed channel to redirect flow, reduce streambank erosion and improve or create aquatic habitat through the formation of scour pools. This item shall also include maintaining a stockpile of the material on the Site, placement of the stockpiled material in the channel, and the removal and proper disposal of all unused and unacceptable material.

Materials: The individual boulder type and size used shall be as noted on the plans or as directed by the Engineer. The mineral composition and color of the boulders selected shall replicate to the extent possible the existing boulders on-Site.

Individual boulder material for this item shall be sound, durable and free from decomposed stones or other defects impairing durability and shall be resistant to the action of air and water.

Material the Contractor proposes to use must be inspected and approved by the Engineer or their authorized delegate prior to the excavation of existing on-Site material within the Project limits or hauling of material from an off-Site source. The Contractor shall provide the Engineer at least 10 work days' notice for the inspection and approval of the individual boulders.

The following will **NOT** be accepted for vortex boulders/top layer of the weir:

- individual boulders consisting of sandstone, shale, or other rock material prone to disintegration
- boulders with visible cracks or spalling
- rock excavated from ledge (bedrock) formations or broken from larger boulders
- boulders with sharp corners, angular edges, or edges as a result of cutting or crushing operations
- broken concrete.

Footer rocks shall serve as the foundation of the weir. The footer rocks shall have reasonable flat tops and bottoms to enable better placement of the top layer of the weir. Rock excavated from ledge (bedrock) and boulders with sharp corners, angular edges as a result of cutting (quarried stone) are acceptable to use for footer rocks.

The following will **NOT** be accepted for footer rocks:

- individual boulders consisting of sandstone, shale, or other rock material prone to disintegration
- boulders with visible cracks or spalling
- broken concrete

The bottom layer of rounded boulders within the culvert shall be set in +/- 1" grout. Grout shall satisfy the requirements of Section M.03.05.

Construction Methods: The Contractor shall submit for the Engineer's approval a proposed location plan for stockpiling the boulders. The proposed location shall be suitable in size and upland of the channel to minimize disruption to the channel or impact to wetland areas caused by moving the materials to and from the stockpile during the placement of material. The stockpile area shall be prepared in accordance with the "Required Best Management Practices" in Article 1.10.03.

Prior to installation, the Contractor shall stake out the location of the rock weir by indicating each end and the apex, and the Contractor shall notify the Engineer for a field review. The final location will be at the discretion of the Engineer or their authorized delegate.

The Contractor shall provide the Engineer at least 10 work days' notice prior to initiating the placement of the individual boulders to create a rock weir. The work and placement of the boulders shall be in accordance with the plans or as directed by the Engineer or their authorized delegate. No work on the rock weir will be allowed on-Site without presence of the Engineer or their authorized delegate in order to oversee the construction activities.

Equipment: When placing and maneuvering the individual boulders within the channel or embedding boulders into the streambank, the Contractor shall use an excavator with a bucket and thumb. Any other equipment proposed to be used shall be reviewed and approved in advance by the Engineer or their authorized delegate.

All disturbed areas, including the stockpile area, shall be permanently stabilized using approved erosion and sedimentation control measures and in accordance with the required "Erosion and Sedimentation Control Plan."

Grout shall be placed in a layer on the culvert bottom as shown on the plans and as directed by the Engineer.

Method of Measurement: This work will be measured for payment by the number of each rock weir installed and accepted, including disposal of unacceptable and surplus materials.

The cost to furnish and place grout material shall be incidental to the cost of the boulder placement in river.

Basis of Payment: This work will be paid for at the Contract unit price each for "Rock Weir," completed and accepted. The price shall include all materials, equipment, tools and labor incidental to the preparation of the stockpile area, excavation of channel bottom, hauling of the material to the stockpile, separation of any rock ledge or concrete debris, storing and protecting (including sedimentation controls and covering) of excavated material and grout.

Pay Item	Pay Unit
Rock Weir	ea.

ITEM #0707009A - MEMBRANE WATERPROOFING (COLD LIQUID ELASTOMERIC)

Description:
Work under this item consists of furnishing and installing a seamless elastomeric waterproofing membrane system applied to a concrete or steel surface as shown on the plans, and as directed by the Engineer. Work shall also include conditioning of the surface to be coated, and all submittals and quality-control testing noted herein.

The completed membrane system shall be comprised of a primer coat, reinforcing material as specified or directed, membrane coating (minimum total thickness of 80 mil and maximum total thickness not to exceed 120 mil), an additional 40 mil membrane layer with aggregate broadcast into the material while still wet, and an application of tack coat.

Materials:
The Contractor shall select a waterproofing membrane system from the Department's Qualified Products List (QPL) for Spray-Applied Membrane Waterproofing System. All materials incorporated in the work shall meet the Manufacturer's specification for the chosen system. A Manufacturer is the original source of supply as defined in Article 1.06.01 of CTDOT's Standard Specifications. The Engineer will reject any system that is not on the QPL.

Reinforcing material (to bridge gaps, joints and cracks) shall be as recommended by the manufacturer.

Aggregate: The aggregate shall be a nonfriable, durable #8 aggregate stone with no more than one-half percent (0.5%) passing the #200 sieve by weight.

Concrete Deck Repair Material: Depressions greater than ½ inch that are required to be filled before application of the membrane shall be repaired with a neat repair mortar as approved by the Engineer. If the repair includes engagement of reinforcing steel, the repair shall be performed under separate, appropriate Contract items.

Construction Methods:

1. Submittals:
   At least 30 days prior to installation of the membrane system, the Contractor shall submit to the Engineer the following:
   a) A Site-specific Installation Plan that includes, but is not limited to, the manufacturer's recommended equipment, materials and procedure for:
      1) Authorization by Manufacturer of applicator
      2) Safety precautions, SDS documents
      3) On site storage of material
      4) preparation of the deck surface and recommended surface moisture content at time of priming
      5) Pre-treatment or preparation procedure at cracks and gaps, treatment at curbs, vertical surfaces or discontinuities

6) Overspray protections (masking and shielding)
7) Method and equipment for taking/calculating onsite temperatures and dewpoint temperatures as well as listing of acceptable temperature and dewpoint ranges for application of primer and/or membrane
8) Method and equipment for application of the primer and membrane
9) Treatment of already primed areas when delays occur; include allowable time frame for covering already placed primer or treatment if the primed surface is compromised
10) Treatment at overlap areas
11) Method for placement of the aggregated coat
12) All Quality Control (QC Plan) tests and procedures to be performed prior to and during the membrane system's installation
13) Recommended repair methods for system non-compliant issues identified during application

b) Materials Certificate for the primer, membrane and aggregate in accordance with the requirements of Article 1.06.07.

c) Concrete Mix Design: At least two weeks before installation, the Contractor shall submit the concrete mix design to the Engineer for acceptance. For RSCP material, NTPEP lab test data shall be submitted that demonstrates that the concrete mix matches the mix that was tested by NTPEP and meets the pre-qualification criteria in the QPL. This test data shall be submitted with a Materials Certificate and a Certified Test Report in accordance with Article 1.06.07.

Automated mechanical applicators will be considered for approval for use, provided there is a trial installation area to demonstrate that the required thickness can be consistently achieved. The Installation Plan shall identify and differentiate between areas using automated applicators and areas where hand application will be used, such as on vertical surfaces and at areas prior to installation of reinforcing material.

2. A technical representative, in the employ of the manufacturer, shall be present on-Site immediately prior to and during application of the membrane. The technical representative shall not be an employee of the installation contractor but is on Site solely to perform QC. The technical representative shall review environmental conditions for proper application, inspect and approve the surface prior to priming, provide guidance on the handling, mixing and addition of components, observe application of the primer and membrane. The technical representative is required to notify the Engineer immediately when conditions are not within acceptable parameters and any further installation will be analyzed by the Engineer under Article 1.06.04. The technical representative shall be qualified and shall perform all required QC testing and remain on the Project site until the membrane has fully cured.

All QC testing, including verbal direction or observations at the time of installation, shall be recorded and submitted to the Engineer for inclusion in the Project records. The QC testing data shall be received by the Department's Project personnel prior to any paving over the finished membrane, or within 24 hours following completion of any staged portion

of the work.

3. Applicator Approval: The Contractor's membrane Applicator shall be fully trained and authorized by the membrane manufacturer and shall have successfully completed at least six spray membrane projects in the past two years. The Contractor shall furnish references from those projects, including names of contact persons and the names, addresses and phone numbers of persons who supervised the projects. This information shall be submitted to the Engineer prior to the submittal of the Installation Plan. The Engineer shall have sole authority to determine the adequacy and compliance of the submitted information. Inadequate proof of ability to perform the work will be grounds to reject proposed applicators.

4. Job Conditions:
   a) Environmental Requirements: Air and substrate temperatures shall be between 40°F and 104°F and the substrate shall be above the dew point. Outside of this range, the Manufacturer shall be consulted.

      The Applicator shall be provided with adequate disposal facilities for nonhazardous waste generated during installation of the membrane system. The applicator shall follow safety instructions regarding respirators and safety equipment.

      Extra care shall be taken to prevent the introduction of moisture onto the area to be membraned including, but not limited to, locating water rest break areas/devices away from the works, prevent vehicles from accessing the prepared areas that may have AC units that drip water. If there is any potential for moisture to impact application, operations shall cease until conditions warrant proper adherence to specification requirements.

   b) Safety Requirements: All open flames and spark producing equipment shall be removed from the work area prior to commencement of application.

      Personnel not involved in membrane application or inspection duties shall be kept out of the work area.

5. Delivery, Storage and Handling:
   a) Packaging and Shipping: All components of the membrane system shall be delivered to the Site in the Manufacturer's packaging, clearly identified with the product type, lot and batch number, manufactured date and expiry or “Best-used-by Date.”

   b) Storage and Protection: The Applicator shall be provided with a storage area for all components. The area shall be cool, dry and out of direct sunlight and shall be in accordance with the Manufacturer's recommendations and relevant health and safety regulations.

      Copies of Safety Data Sheets (SDS) for all components shall be kept on Site for review

by the Engineer or other personnel.

c) Shelf Life - Membrane Components: Packaging of all membrane components shall include a shelf-life date sealed by the Manufacturer. No membrane components whose original shelf life has expired shall be used.

6. Pre-application Meeting: A minimum one week prior to beginning any membrane waterproofing work, an on-site Pre-application meeting shall be scheduled to review all requirements of the approved Installation Plan. This meeting shall include representatives from the membrane system's Manufacturer and from the Installer as well as the Prime Contractor.

7. Surface Preparation:
   a) Protection: The Contractor shall be responsible for the protection of equipment, adjacent areas, and affected pedestrians/traffic from over spray or other contamination. Permanent highway features adjacent to the work such as, but not limited to, curbs, parapets, sidewalks and bridge joints shall be masked prior to application of the materials.

   b) Surface Preparation: Surfaces shall be free of oil, grease, curing compounds, loose particles, moss, algae, growth, laitance, friable matter, dirt, bituminous products, previous waterproofing materials or any material that will affect the proper bonding/adhesion of the membrane to the surface receiving the membrane application. If required, degreasing shall be done by detergent washing in accordance with ASTM D4258.

      Sharp peaks and discontinuities within the areas to be coated shall be ground smooth. Any peak greater than ¼ inch above the surface profile of the prepared substrate shall be ground to the surrounding elevation and voids and holes greater than ½" in the surface patched with appropriate material. The surface shall be abrasively cleaned, in accordance with ASTM D4259, to provide a sound substrate free from laitance and shall achieve a Concrete Surface Profile (CSP) as defined by the International Concrete Repair Institute (ICRI) of between 4 and 6. The QC representative shall have on their person and available for use by Department Engineers, a full CSP Chip Set to confirm concrete surface meets above profile requirement. Areas not falling within the noted range shall be re-addressed as needed.

      Steel components to receive membrane waterproofing shall be blast cleaned in accordance with the Society of Steel Protective Coatings' SSPC-SP6, Commercial Blast Cleaning, and shall be coated with the membrane waterproofing system within the same work shift.

8. Inspection and Testing: Prior to priming of the surface, the Engineer, the Applicator and Manufacturer's technical representative shall inspect and approve the prepared substrate.
   a) Random tests for deck moisture content shall be conducted on the substrate by the

Contractor at the Site using a "Sovereign Portable Electronic Moisture Master Meter,"

"Tramex CMEXpertII Concrete Moisture Meter" or approved equal. The minimum frequency shall be one test per 1000 s.f. but not less than three tests per shift for each contiguous section worked on during that shift. Additional tests may be required if atmospheric conditions change and retesting of the substrate moisture content is warranted.

The membrane system shall not be installed on substrate with a moisture content greater than 6%, or at a moisture content above the amount recommended by the written submittal installation documentation from the system's Manufacturer.

b) The ambient air temperature and dew point temperature readings shall be taken immediately prior to starting any primer or membrane application and continuously throughout the installation process. No primer or membrane application shall be allowed if the difference between the two is 5° deg or less, or is not within the recommended air and dew point temperature ranges noted in the submitted Installation Plan from the system's Manufacturer.

c) Random tests for adequate tensile bond strength shall be conducted by the Contractor on the substrate using an adhesion tester in accordance with the requirements of ASTM D7234 for concrete substrate or ASTM D4541 for steel substrate. The minimum frequency shall be one test per 5,000 s.f. but not less than three adhesion tests per shift for each contiguous section worked on during that shift. The locations of the pull tests shall be at least a distance from each other equal to or greater than 1/3 of the width or length (whichever is greater) of the area being worked in that section. The location of the pull tests shall be located in accordance with ASTM D3665 or a statistically based procedure of stratified random sampling approved by the Engineer.

Adequate surface preparation will be indicated by tensile bond strengths of the substrate greater than or equal to 150 psi or failure in a concrete surface and greater than or equal to 300 psi for steel surfaces.

If the tensile bond strength is lower than the minimum specified, the Engineer may request additional substrate preparation.

d) Grouted joints, materials that the membrane cannot bond to, and cracks or discontinuities that cannot be bridged over by the membrane material shall be covered by a reinforcing material recommended by the membrane system's Manufacturer prior to application of membrane layers as approved or directed by the Engineer.

9. Application:
   a) The System shall be applied in the following distinct steps as follows:
      1) Substrate preparation,
      2) Priming,
      3) Reinforcing material application over grouted joints, cracks, etc., embedded in

wet membrane bonding layer,
4) Membrane application,
5) Membrane with aggregate.

b) Immediately prior to the application of any components of the System, the surface shall be adequately dry (see Section 8(a) of this specification) and any remaining dust or loose particles shall be removed using clean, dry, oil-free compressed air or industrial vacuum.

c) Where the area to be treated is bound by a vertical surface (e.g. curb or wall), the membrane system shall be continued up the vertical, if shown on the plans or directed by the Engineer.

d) The handling, mixing and addition of components shall be performed in a safe manner to achieve the desired results, in accordance with the Manufacturer's recommendations or as approved or directed by the Engineer. All components shall be used from its original packaging (barrels) or be discarded – no mixing of like materials from different batches shall be allowed.

e) A neat finish with well-defined boundaries and straight edges shall be provided by the Applicator.

f) Primer: The primer shall consist of one coat with an overall coverage rate of 125 to 175 s.f./gal unless otherwise recommended in the Manufacturer's written instructions. All components shall be measured and mixed in accordance with the Manufacturer's recommendations.

The primer shall be spray applied using a single component spray system approved for use by the Manufacturer. If required by Site conditions and allowed by the manufacturer brush, squeegee or roller application will be allowed.

The primer shall be allowed to cure tack-free for a minimum of 30 minutes or as required by the Manufacturer's instructions, whichever time is greater, prior to application of the first lift of waterproofing membrane.

Porous concrete (brick) may require a second coat of primer should the first coat be absorbed.

Bond Strength: Random tests for adequate adhesion capacity shall be conducted on the primed substrate in accordance with the requirements of ASTM D7234 for concrete or ASTM D4541 for steel substrate. The minimum frequency shall be one test per 5,000 s.f. but not less than three adhesion tests per shift for each contiguous section worked on during that shift. The locations of the pull tests shall be at least a distance from each other equal to or greater than 1/3 of the width or length (whichever is greater) of the area being worked in that section. The location of the pull tests shall

be located in accordance with ASTM D3665 or a statistically based procedure of stratified random sampling approved by the Engineer.

Adequate adhesion will be indicated by tensile bond strengths of primer to the substrate greater than or equal to 150 psi or failure in a concrete surface and greater than or equal to 300 psi for steel surfaces.

Any primer not adequately applied shall be removed and new primer applied at the Contractor's expense, as directed by Engineer.

Delays to the membrane installation following installation of the primer may necessitate remedial measures. Re-application of the primer or any work required due to, but not limited to, precipitation, ambient or dew point temperatures falling out of allowable zone, materials dropped on the surface, shall be accomplished as outlined in the Installation Plan.

g) Membrane and Reinforcing Material: Application of the membrane on the primed surface shall not commence until the primer is cured and adequate adhesion capacity achieved as described in Section 9(f) of this specification.

The waterproofing membrane shall consist of two equal 40 mil coats for a total dry film thickness of a minimum 80 mils but not to exceed 120 mils. successive coats shall be of a contrasting color to aid in Quality Assurance and inspection.

Hand sprayer application of a single layer at 80 mils may be allowed after demonstration on a test section of not less than 100 sq. feet, of the applicator's ability to meet specified tolerances has been reviewed and found acceptable to the Engineer.

Use of an automated mechanical applicator to achieve the required thicknesses in either one or two equal layers, may be allowed after demonstration on a test section of not less than 100 sq. feet, of the applicator's ability to meet specified tolerances has been reviewed and found acceptable to the Engineer.

Reinforcing material, if required, shall be applied as described in the Installation Plan. The substrate shall be coated in a methodical manner.

Thickness checks: For each layer, checks for wet film thickness using a gauge pin or standard comb-type thickness gauge shall be carried out once every 100 s.f. Where rapid set time of the membrane does not allow for wet film thickness checks, ultrasonic testing (steel surfaces only), calibrated point-penetrating (destructive) testing, in-situ sampling (cutout of small sections for measuring thicknesses), or other methods approved by the Engineer shall be employed for determination of dry film thickness.

The measured thickness of each and every individual test of the membrane shall be

greater than or equal to the required thickness.

Bond Strength: Random tests for adequate adhesion shall be conducted on the membrane in accordance with the requirements of ASTM D7234 for concrete substrate or ASTM D4541 for steel substrate. The minimum test frequency shall be one test per 5,000 s.f. but no less than three adhesion tests per bridge. Adequate adhesion will be indicated by tensile bond strengths of the membrane to the substrate of greater than or equal to 150 psi or failure in a concrete surface, and greater than or equal to 300 psi for steel surfaces.

Repair the membrane system following destructive testing and correct any deficiencies in the membrane system or substrate noted during QC testing in accordance with the Manufacturer's recommendations to the satisfaction of the Engineer at no additional cost to the State.

h) Repairs: For areas left untreated or where the membrane hasn't bonded or becomes damaged, a patch repair shall be carried out to restore the integrity of the system. The damaged areas shall be cut back to sound materials, abraded and wiped with solvent (e.g. acetone or other manufacturer-recommended material) up to a width of at least six inches on the periphery, removing any contaminants unless otherwise recommended by the Manufacturer. The substrate shall be primed as necessary and tested for adhesion before the membrane layer(s) are applied. A continuous layer shall be obtained over the substrate with a six-inch overlap onto any adjacent existing membrane. The repaired area shall be tested for adhesion, with a minimum of one test per repair area.

i) Overlapped areas: Where the membrane is to be joined to existing cured material, the overlapped area shall be cut back to sound material if necessary, abraded and wiped with solvent (e.g. acetone or other manufacturer-recommended material) or cleaned in accordance with the Installation Plan, up to a width of at least six inches prior to application of the overlapping membrane material. A continuous layer shall be obtained over the substrate with a six-inch overlap onto existing membrane. The overlapped section shall be tested for adhesion, with a minimum of one test per 200 lineal feet.

j) Aggregated Finish:
   1) Apply an additional 40 mil thick layer of the membrane material immediately followed by an aggregate coating, before the membrane cures, at a rate to fully cover the coated area to a point where no membrane material is visible. The membrane and aggregate shall be fully integrated after the aggregate has been applied and the membrane cured.
   2) Using motorized mechanical sweepers followed by a vacuum or motorized blower apparatus, remove all loose and excess aggregate and fines from the surface, to the satisfaction of the Engineer, and dispose of properly prior to application of tack coat and overlay.

3) Traffic shall not be allowed to travel on the completed membrane system without prior approval of Engineer upon consultation with Manufacturers technical representative.
4) Localized areas not fully coated following removal of loose aggregate, defined as being at least 90% covered with well-adhered aggregate within any one square foot area, shall be touched-up with additional membrane and aggregate as needed. These areas shall then be swept and/or vacuumed or blown again prior to application of tack coat and overlay.
5) Tack coat: a Tack Coat Emulsion shall be applied to the aggregated finish prior to covering with a bituminous concrete mat. Material shall be applied in two coats of 0.06 - 0.08 gal/s.y. allowing it to break in between coats. This work shall be done as part of the paving operation and paid under separate, applicable Contract items.

10. Final Review: The Engineer and the Applicator shall jointly review the area(s) over which the completed system has been installed. Any irregularities or other criteria that do not meet the requirements of the Engineer shall be addressed at this time.

Method of Measurement: This item will be measured by the number of square yards of waterproofed surface completed and accepted.

Basis of Payment: This item will be paid for at the Contract unit price per square yard of "Membrane Waterproofing (Cold Liquid Elastomeric)," complete and accepted in place, which price shall include submittals, Pre-Work Meeting, all surface preparation, furnishing, storing and applying the system, technical representative and Quality Control testing, and any necessary repairs and remediation work as well as all materials, equipment, tools, labor incidental to this work.

The asphalt emulsion (tack coat) will be paid separately.

Pay Item	Pay Unit
Membrane Waterproofing (Cold Liquid Elastomeric)	s.y

ITEM #0904947A – METAL BRIDGE APPROACH RAIL

ITEM #0904990A – METAL BRIDGE RAIL

Description: Work under this item shall consist of fabricating, metallizing, transporting, and erecting a NHDOT T3 curb mounted bridge rail and approach rail system comprised of anchorages, concrete inserts, plates, posts, rails, fasteners and bearing pads in accordance with the plans.

Materials: Structural steel posts, shapes and plates for bridge and approach rails shall meet the requirements of ASTM A572, Grade 50. Hollow structural sections for bridge and approach rail shall meet the requirements ASTM A500, Grade B. Rail tubing shall meet the longitudinal Charpy V-Notch requirements of 15 FT-LBS at 0°F. For ASTM A500, GRADE B, the test samples shall be taken after forming the tubes. Charpy V-Notch is not required for splice tubes. Certified Test Reports and Materials Certificates shall be submitted in accordance with Article 1.06.07. The Certified Test Reports shall address that the steel meets the requirements of Article 1.06.01, Buy America.

All exposed steel shapes, plates and hollow structural sections shall have a controlled content of silicon within the range 0.0% to 0.4% or 0.15% to 0.25%. Before metallizing, mill test certificates verifying silicon content shall be submitted to the Engineer and the metallizer.

Detail A Bolts shall be ASTM A325 OR A449. All other bolts and nuts shall conform to ASTM A307 and ASTM 563 Grade A respectively or better, except that ASTM A307 nuts may be used on the bottom of anchor assembly. Washers shall be hardened steel commercial Type A Plain Wide washers and shall meet the dimensional requirements of A.N.S.I. B18.22. Anchor rods shall conform to ASTM A449.

The bolts, anchor rods, nuts and washers shall be galvanized in accordance with ASTM F2329 or ASTM B695, Class 55.

Preformed bearing pads (1/8" thick) at bridge rail posts shall conform to AASHTO M251

All steel shapes, posts, plates and hollow structural sections for bridge rail and steel shapes, posts, rails and plates for approach rail, including exposed hardware, shall be metallized in accordance with Item #0603474A – Metallizing Structural Steel (Site No. 1). A sample of the color shall be provided to the Engineer and Town for approval prior to fabrication.

Synthetic Offset Blocks: Offset blocks shall be made with a minimum of 50% recyclable polyethylene plastic comprised of low-density and high-density polyethylene with a specific gravity less than or equal to 1.0 in accordance with ASTM D792 and be recyclable. They shall also have a minimum compressive stress of 450 psi in accordance with ASTM D695, meet the dimensions indicated on the plans, and be a shade of gray or black. Offset blocks must have been crash-tested and have approval in writing by the FHWA in compliance with MASH, Test Level 3 requirements. Each offset block shall be stamped at the factory with the manufacture's identification and lot number. The Contractor

shall furnish to the Engineer prior to construction a Certified Test Report and a Materials Certificate for the offset blocks in conformance with 1.06.07 or 1.20-1.06.07.

Thrie Beam and W-Beam Approach Rail sections shall be in accordance with Article M.10.02-3.

Construction Methods:

A. Submittals: Prior to fabrication, the Contractor shall submit shop drawings for the bridge and approach rail at each location in accordance with Article 1.05.02 and welding procedures in accordance with Article 1.05.17.

B. Fabrication Requirements: The steel fabricator shall meet the requirements of the AISC Certification Program for Manufacturers of Bridge and Highway Components (CPT).

Shop fabrication of the bridge rail shall meet the requirements of Article 6.03.03-3.

C. Installation Requirements:

Bridge Rail

The anchor rods shall be securely bolted to anchor plates to create anchorage assemblies. The anchorage assemblies shall be accurately positioned and restrained to prevent movement during field placement of the concrete.

Field installation of the rail components shall be as shown on the plans.

High-strength bolts, including nuts and washers, shall be installed and tensioned in accordance with Subarticle 6.03.03-5(f).

A 1/8" bearing pad shall be placed between the concrete curb and the baseplate at all post locations. The concrete and steel surfaces that will be in contact with the bearing pad shall be dry, clean and free of all loose concrete and contaminants. The metalized surface of the baseplate shall not be abrasively cleaned.

Prior to placing the bearing pad, the curb concrete shall have obtained the compressive strength shown on the plans.

Approach Rail

Steel posts shall be driven. The Contractor shall use suitable driving caps and equipment to prevent damage to the posts during driving. Where rock, boulders or debris are encountered while driving the posts, the obstruction shall be removed to make each hole large enough to permit driving of the posts. Each hole shall then be backfilled with suitable material and thoroughly compacted before driving the posts. Any surplus or unsuitable material remaining after the completed installation shall be removed and disposed of by the Contractor.

The Contractor is cautioned that underground utilities, which may be energized, may be present within the Project limits.

The posts shall be located as shown on the plans, set plumb and in alignment with the rail or rail treatments. Where required, the offset block, brackets, rubrails, back-up rails and rail elements shall then be erected to produce a smooth continuous rail as shown on the plans. The terminal connectors, rubrails, and rail elements shall be lapped in the direction of traffic.

Whenever metal beam rail or rail treatments are being constructed adjacent to areas open to traffic, the Contractor shall complete the installation up to and including the designated terminal treatment at the close of each day's work.

On long runs or other locations when it is not practical to complete the installation up to and including the designated terminal treatment by the end of the workday, the Contractor shall use temporary methods to terminate the metal beam rail.

Prior to any rail installations, the Contractor shall submit to the Engineer for review its proposed methods for temporarily terminating the end section.

The Contractor shall furnish posts of sufficient length where field conditions warrant to obtain the depth in the ground shown on the plans.

Rail attachment to concrete bridge parapets, barriers, or other fixed objects shall be made using through bolts as shown on the plans. When anchor bolts for rail attachments are shown on the plans to be installed into existing concrete, drilling and bonding shall be as specified in 6.10.03. A minimum of 3 anchors, or 5% of the total number of anchors, whichever is greater, shall be tested in accordance with 6.10.03-C.

General

During installation of the rail and any component parts, the Contractor shall take necessary precautions to prevent any injury or property damage from any falling materials.

All work shall proceed in accordance with the special provisions "Maintenance and Protection of Traffic" and "Prosecution and Progress."

Method of Measurement: This work will be measured for payment by the number of linear feet of Metal Bridge Rail and Metal Bridge Approach Rail installed, completed and accepted, measured within the pay limits shown on the plans.

Basis of Payment: This work to install NHDOT T3 rail will be paid for at the Contract unit price per linear foot for "Metal Bridge Rail," complete and accepted in place, which price shall include all materials, equipment, tools, and labor incidental thereto.

This work to install NHDOT T3 Approach rail will be paid for at the Contract unit price per linear foot for "Metal Bridge Approach Rail," complete and accepted in place, which price shall include all materials, equipment, tools, and labor incidental thereto.

Metallizing, sealing, and top coating of Metal Bridge Rail and Metal Bridge Approach Rail and top coating of the hardware shall be paid for under Item #0603474A – Metallizing Structural Steel (Site No. 1).

Pay Item	Pay Unit
Metal Bridge Rail	l.f.
Metal Bridge Approach Rail	l.f.

ITEM #0913952A - PROTECTIVE FENCE (5' HIGH)

Description: Work under this item consists of furnishing and installing chain link fencing in accordance with the details shown on the plans and with these specifications.

Materials: Materials for this work shall be as follows:

1. **Chain Link Fabric:** The fabric shall be a black Poly Vinyl Chloride (PVC) - coated steel chain link type, conforming to the specifications of ASTM F668, Class 2B, thermally fused and bonded. The #9 gage core wire shall be galvanized, PVC-coated, then woven to create a continuous fabric having a two inch mesh, knuckled at both top and bottom. The PVC coating shall be the color black as described in ASTM F934.

2. **Posts and Rails:** The material used to manufacture framework for color chain link fencing systems shall be galvanized sheet steel, in coils, meeting the general requirements of ASTM A924 and the specific product requirements of ASTM A653, quality level HSLA (high strength, low alloy), Type I, Grade 50 (50,000 psi minimum yield strength), coating designation Z600 (2.0 oz./ft^2) applied by the hot-dip process. The framework shall be manufactured in accordance with commercial standards to meet the requirements of ASTM F1043, Group IC, electrical resistance welded round steel pipe. All burrs and sharp edges shall be removed and smoothed before galvanizing.

3. The manufactured framework shall be subjected to a complete thermal stratification coating process (multi-stage, high temperature, multi-layer) including a pretreatment wash with zinc phosphate, an electrostatic spray application of an epoxy base, and a separate electrostatic spray application of a polyester finish. The color of the finish coat shall be black.

4. The material used for the base coat shall be a zinc-rich thermosetting epoxy. The minimum thickness of the base coat shall be 2 mils. The material used for the finish coat shall be a thermosetting "no mar" TriGlycidyl IsoCyanurate (TGIC) polyester powder. The minimum thickness of the finish coat shall be 2-3 mils.

5. The coated framework shall demonstrate the ability to endure a salt spray resistance test conducted in accordance with ASTM B117 without loss of adhesion for a minimum exposure time of 3,500 hours. Additionally, the coated framework shall demonstrate the ability to withstand exposure in a weatherometer apparatus for 1,000 hours without failure in accordance with Practice D1499 and to show satisfactory adhesion when subjected to the cross-hatch test in accordance with ASTM D3359. The polyester finish coat shall not fade, crack, blister or split under normal use.

6. **Fence Fittings:** All materials and coating requirements shall conform to the specifications of ASTM F626. All fittings shall receive the same coating system as the posts and rails. The ties used to fasten the fabric to the post and rails shall not be less than #6 and #9 gage respectively.

7. **Galvanizing Compound:** Galvanizing compound shall conform to the requirements of ASTM A780.

8. **Non-shrink Grout**: Grout used to anchor fence posts in preformed holes shall be non-shrink and non-staining and shall conform to the requirements of Article M.03.05.

9. **Silicone Joint Seal:** Joint seal placed around the base of the posts to seal the interface between the post and the non-shrink grout shall conform to the requirements of the special provision "Section 6.01 - Concrete for Structures."

All components of the chain link fence shall be the color black as described in ASTM F934. Coating which exhibits peeling or chipping will be cause for rejection of the shipment.

Materials Certification and Testing: The Contractor shall furnish a Materials Certificate in accordance with Article 1.06.07 for the fabric, posts, rails, and all fittings. A sample of PVC-coated fabric shall be submitted to the Department for testing the bond of the coating in accordance with the requirements of ASTM F668, Class 2b.

***Shop Drawings*:** Before fabricating any materials, the Contractor shall submit shop drawings to the Engineer for approval in accordance with Article 1.05.02. These drawings shall include but not be limited to the following information: a layout plan showing all post and rail spacing, all fence and anchorage details, material lists and material designations and the name and telephone number of a person to contact who can answer questions about the shop drawings.

Construction Methods: The protective fence shall be accurately fabricated and installed in accordance with the plans and as directed by the Engineer.

All rails shall be erected to produce a smooth, continuous appearance with posts placed vertically and with all rails parallel to the grade of the walls. The fabric shall be stretched tightly between end posts and securely fastened with stretcher bar bands. The fabric shall be attached to the rails and line posts as shown on the plans. Dome caps shall be installed on top of all posts.

Coated fabric, fence posts, rails and fittings shall be handled with care so the coating is not damaged. Damage to the galvanized coating below the finish coating shall be repaired in accordance with ASTM A780 with two coats of galvanizing compound before repairing the finish coat. The final dry film thickness of the galvanizing compound shall be a minimum of 2 to 3 mils. Damage to coating shall be repaired as directed by the manufacturer.

Method of Measurement: This work will be measured for payment by the number of linear feet of completed and accepted fence, measured horizontally from centerline to centerline of posts.

Basis of Payment: This work will be paid for at the contract unit price per linear foot for "Protective Fence (5' High)", complete and accepted in place, which price includes all materials, equipment, tools and work incidental thereto.

Pay Item	Pay Unit
Protective Fence (5' High)	l.f.

ITEM #0950019A – TURF ESTABLISHMENT - LAWN

Description: The work included in this item shall consist of providing an accepted stand of grass by furnishing and placing seed as shown on the plans or as directed by the Engineer.

Materials: The materials for this work shall conform to the requirements of Section 9.50 of Standard Specification Form 819. The following mix shall be used for this item:

Turf Seed Mix:
In order to preserve and enhance the diversity, the source for seed mixtures shall be locally obtained within the Northeast USA including New England, New York, Pennsylvania, New Jersey, Delaware, or Maryland. All seed mixtures msut be submitted for approval by the Landscape Design Office and include the name of the Varieties for each species, in similar percentages. Product certifications shall include the minimum germination rates as follows: 75% for Bluegrass, and 85% for both fescues and Ryegrass species.

Proportion (Percent)	Species Common name	Scientific name
20	Kentucky Bluegrass Improved varieties	Poa pratensis
45	Red Fescue Improved varieties	Festuca rubra
35	Perennial Ryegrass Improved varieties	Lolium perenne

Construction Methods: Construction Methods shall be those established as agronomically acceptable and feasible and that are approved by the Engineer. Rate of application shall be field determined in Pure Live Seed (PLS) based on the minimum purity and minimum germination of the seed obtained. Calculate the PLS for each seed species in the mix. Adjust the seeding rate for the above composite mix, based on 250 lbs. per acre. The seed shall be mulched in accordance with Article 9.50.03.

Method of Measurement: This work will be measured for payment by the number of square yards of surface area of accepted established grasses as specified or by the number of square yards of surface area of seeding actually covered and as specified.

Basis of Payment: This work will be paid for at the contract unit price per square yard for "Turf Establishment - Lawn" which price shall include all materials maintenance, equipment, tools, labor, and work incidental thereto. Partial payment of up to 60% may be made for work

completed, but not accepted. Final acceptance requires the visual inspection of a minimum of 60% total coverage of healthy green vegetation per square foot of area.

Pay Item	**Pay Unit**
Turf Establishment - Lawn	S.Y.

ITEM #0950040A – CONSERVATION SEEDING FOR SLOPES

Description:

The work included in this item shall consist of providing an accepted uniform stand of established conservation seed mixture by furnishing and placing seed and cover crop as shown on the plans, permits, or as directed by the Engineer within the wetland mitigation Sites(s) or other areas when required.

Materials:

All conservation seed mixture sources shall be obtained within the New England States, New York, Pennsylvania, New Jersey, Delaware, Virginia or Maryland to preserve and enhance the diversity of native conservation grass and plant species.

Four qualified conservation seed mixtures are detailed below:

1. **New England Conservation/Wildlife Mix**, New England Wetland Plants, Inc. 820 West Street Amherst, MA 01002, or equal. Rate shall be 25 lbs. PLS per acre (1 lb. PLS per 1,750 sq. ft.)

2. **Mesic to Dry Native Pollinator Mix,** Ernst Conservation Seeds, Inc. 8884 Mercer Pike, Meadville, PA 16335, or equal. Rate shall be 20 lbs. PLS per acre (1 lb. PLS per 2,178 sq. ft.)

3. **Vermont Conservation and Wildlife**, Vermont Wetland Plant Supply, LLC, P.O. Box 153, Orwell, VT 05760, or equal. Rate shall be 20 lbs. PLS per acre (1 lb. PLS per 2,178 sq. ft.)

4. **Upland Partial Shade to Full Sun Mixture**, Chesapeake Valley Seed, 8869 Greenwood Place, Suite C, Savage, MD 20763, or equal. Rate shall be 25 lbs. PLS per acre (1 lb. PLS per 1,750 sq. ft.)

The Contractor must apply 30 lbs. of cover crop per acre in conjunction with the qualified conservation seed mixture selected. The 30 lbs. of cover crop shall consist of grain oats when seeding between March 15 to June 30 or grain rye when seeding between August 15 to October 31.

Fertilizer, if required, shall meet the requirements of Article M.13.03.

Mulch shall meet the requirements of Article M.13.05.

Erosion control matting shall be bio-degradable and meet the requirements of Article M.13.09.

The Contractor shall submit the selected qualified conservation seed mixture or equal including cover crop seed mixture information to the Engineer for review and acceptance in advance of purchase and prior to application.

The Materials Certificate for all seed mixtures shall have a statement that certifies that the seed mixture does not include any invasive species pursuant to Connecticut General Statutes Sec. 22a-381d or any State Threatened or State Endangered species pursuant to Connecticut General Statutes Sec. 26-303. The seed tags from the bags are to be removed by the Engineer upon delivery and attached to the Materials Certificate. Seeding shall not occur if these requirements are not met.

All approved seed mixtures shall be obtained in sufficient quantities to meet the pure live seed (PLS) application rates as determined by the seed analysis of the mixture.

Construction Methods:

Construction methods shall be those established as agronomically acceptable and feasible and shall be accepted by the Engineer. The methods described in Article 9.50.03 shall be amended as follows:

Preparation of Seedbed Areas:

a. Level Areas, Median Areas, Interchanges and Lawns: These areas shall be made friable and receptive for seeding by discing or by other accepted methods to the satisfaction of the Engineer. The final prepared surface which has been seeded shall meet the lines and grades for such surface areas as shown on the plans, permits or as directed by the Engineer. In no event, will seeding be permitted on hard or crusted soil surface.

b. Slope and Embankment Areas: These areas shall be made friable and receptive to seeding by accepted methods which will not disrupt the line and grade of the slope surface. In no event, will seeding be permitted on hard or crusted soil surface.

All areas to be seeded shall be reasonably free from weeds taller than 3 inches. Level Areas, Median Areas, Interchanges and Lawns: Seeding shall not be permitted until substantial weed growth is removed and accepted by the Engineer. Slope and Embankment Areas: Removal of weed growth shall be those methods which do not rut or scar the slope surface or cause excessive damage of the slope line or grade as accepted by the Engineer.

Conservation seeding for slopes for wetland mitigation Site(s): Seeding shall occur during the fall season immediately following construction of the wetland mitigation Site(s). Seeding for wetland mitigation Site(s) must occur from August 15 to October 31.

For non-wetland mitigation Site(s), seeding shall occur during the dates specified in Article 9.50.03-2.

If seed is purchased in bulk rather than by PLS, the rate of application must be adjusted to meet the required PLS seeding rate. This seeding rate shall be increased by the appropriate percentage as determined by the following formula based off the information provided on the seed tags at delivery.

(Germination Percentage X Purity Percentage)/ 100 = Percentage PLS

The Engineer will verify that the seed is applied at a rate that will allow for 100 percent PLS.

Mowing will not be allowed within areas that are seeded with conservation seed mix, unless authorized by the Engineer.

Method of Measurement:

This work will be measured for payment by the number of square yards of surface area of accepted established conservation grasses as specified.

Basis of Payment:

This work will be paid for at the Contract unit price per square yard for "Conservation Seeding for Slopes," which price shall include all materials, maintenance, equipment, tools, labor, and work incidental thereto. Partial payment of up to 50% may be made for work completed, but not accepted. Full payment shall not be made until the area has been accepted by the Engineer.

Pay Item	Pay Unit
Conservation Seeding for Slopes	s.y.

ITEM #0952051A - CONTROL AND REMOVAL OF INVASIVE VEGETATION

Description:

This work shall include the development and implementation of an Invasive Vegetation Removal Plan (IVRP) to outline the identification and treatment methods for the control of invasive vegetation, including trees if present, as directed by the Engineer or their authorized delegate. This work will also include the removal and off-Site disposal of invasive vegetation from within the Project limits in accordance with the accepted IVRP.

The list of invasive vegetation to be controlled, removed, and disposed off-Site under this item can be found on the following websites:

- Connecticut Invasive Plant Working Group (CIPWG) Invasive Plants Council (http://cipwg.uconn.edu/invasive_plant_list/)
- US Army Corps of Engineers (ACOE) New England District Compensatory Mitigation Guidance Appendix K (http://www.nae.usace.army.mil/portals/74/docs/regulatory/Mitigation/2016_New_England_Compensatory_Mitigation_Guidance.pdf)

Materials:

The herbicide shall be formulated as applicable for target-species foliar treatment or a flush cut/stump treatment. All herbicide applications shall be in accordance with Product label rates and in conjunction with Sections 22a-46 to 22a-66z of the Connecticut General Statutes (CGS).

Flagging tape, if used, shall be fluorescent, 'All-Weather' type, resistant to UV and water damage.

Stakes shall be survey-grade, as specified under Article 9.80.02.

Construction Methods: The Contractor shall be responsible to identify invasive vegetation at all times of the year and to prepare a plan for its control, removal, and off-Site disposal without assistance.

1. **IVRP:** Prior to any ground disturbance within the Project limits, the Contractor shall submit a proposed IVRP to the Engineer or their authorized delegate for review and comment. The Contractor shall address any comments to the satisfaction of the Engineer and resubmit their revised IVRP for review and acceptance.

   The IVRP shall include the following information:

   1) Proposed dates for the initial walk through of the invasive vegetated areas to be controlled and removed for off-Site disposal.
   2) Schedule identifying specific dates when herbicide treatment or mechanical excavation or removal of invasive species is to occur for the life of the Contract, including the 1-year warranty period that begins at Substantial Completion. The

treatment schedule shall coincide with the Contractor's schedule.

3) Plan sheets identifying the species of invasive vegetation and trees within the Project limits showing the total square yards proposed to be controlled and removed for off-Site disposal. For each species of invasive vegetation present on-Site, the following shall be described:
   a. Types and concentrations of any herbicides to be used to control the identified species for the life of the Contract, including any adjuvants, SDS sheets, types of tools, equipment, or machinery to be used.
   b. Mechanical excavation and removal methods including the type of machinery to be used.
4) Provide proof of DEEP Pesticide Application Business registration pursuant to CGS Section 22a-66b, and certifications for each supervisor and operational commercial applicator on- Site or as required under CGS Sections 22a-54 to 22a-58. All Contractors physically applying pesticides on Department construction Projects to treat invasive vegetation in the State highway right-of-way must ensure that the "6 Rights-of-Way Pest Control" certification is held by at least one Commercial Supervisory Pesticide Applicator employed at the Pesticide Application Business. If the applicator does not have a commercial supervisory certificate, then the applicator must have a junior operator certificate in "6 Rights-of-Way Pest Control" and operate under the written or in-person directions of the supervisor who is certified in "6 Rights-of-Way Pest Control." More information on DEEP certifications and permits for applying pesticides is available at the Pesticide Management Program page website. The Department reserves the right to require additional DEEP certifications based on Project Site specific requirements.
5) A description of safety equipment required.
6) Procedures for handling chemical spills.
7) Proposed disposal methods:
   a. Procedures for off-Site removal of invasive vegetation including trees.
   b. Provide address of disposal location, current permits / letters from the town authorizing such activity and a Site map (showing regulated areas).

Invasive vegetation shall not be buried on-Site.

If changes are required to the accepted IVRP during the life of the Contract (including registration/certification changes for the personnel applying pesticides or new invasive species not previously identified in the original IVRP submission) or additional invasive vegetation control and/or removal are ordered by the Engineer, these changes shall be documented by the Contractor and resubmitted to the Engineer or their authorized delegate for review and acceptance. Only those changes recommended by the appropriately licensed supervisor/ applicator will be considered. At no time shall the Contractor direct or advise workforces on the pesticide treatment. All direction must be generated from the licensed Pesticide Application Business and approved by the Engineer.

The IVRP or any amended version must be accepted by the Engineer or their authorized delegate prior to beginning of any mechanical excavation or herbicide treatment in the areas which require invasive species control, removal and off-Site disposal as identified

Contractor's marked up plan sheets. The accepted methods must be capable of total control and removal of all identified invasive species in the identified areas throughout the life of the Contract and the 1-year warranty period.

2. **Special Handling of Invasive Species Vegetation:** The Contractor will be allowed to mechanically excavate invasive vegetation and underlying soils using the accepted methods in the IVRP. The accepted methods must be capable of the removal of all soil to a depth where invasive plant material and root system is no longer evident, to the satisfaction of the Engineer or their authorized delegate. Suitable material shall be provided and placed to final grade as shown on the plans or as directed by the Engineer.

   All excavated invasive vegetation and underlying soils shall be considered an unsuitable material and must be removed separately from clearing and grubbing operations and disposed of off-Site at an approved location as described in the Contractor's IVRP.

   Whether the Contractor's method of removal is by flush cutting/stump treatment or spraying of herbicides, invasive species, including trees identified as invasive in the above websites or IVRP, must be removed separately from clearing and grubbing operations and disposed of at an approved location as described in the Contractor's IVRP.

   The Contractor will not be allowed to strip/cut topsoil from any location and reuse this material within the Project limits identified within the IVRP as an area requiring treatment. The stripped/cut material is considered unsuitable material and is to be taken off-Site to an approved disposal facility as described in the Contractor's IVRP.

   Wood chips from invasive species are not allowed to be stockpiled or reused on-Site. Wood chipping on-Site may be allowed to remain on-Site if temporarily stored in a properly contained enclosure and removed off-Site at the end of the treatment cycle, to the satisfaction of the Engineer or their authorized delegate.

   No equipment or vehicles other than those required to complete the work as described in the Contractor's IVRP will be permitted in the areas designated for invasive vegetation removal. Any equipment used to process invasive vegetation, such as chippers and transport vehicles, must be cleaned prior to further use.

3. **Site Maintenance:** Broadcast or uncontrolled spray application will not be permitted, and care must be taken to avoid contacting non-target native species. If any non-target native species to remain within the Project limits are inadvertently treated with herbicide and perish, they shall be replaced with in-kind species at the Contractor's expense.

   Vines shall be cut from the ground to the tree canopy. Twining vines within a tree canopy shall be removed to the greatest extent possible without damaging the existing tree to remain. Should branches be damaged, the Contractor shall prune damaged limbs at their expense. All corrective pruning shall meet the requirements of the National Arborists Association Pruning Standards. Note: Use of aerial equipment is encouraged; use of a pole saw to cut vines leaving

unsightly debris hanging from the trees will not be allowed.

Flush cutting/stump treatment of brush and trees shall not be more than 2 inches above the ground line.

Any invasive species control and removal work performed throughout the duration of the Contract that causes damage or soil disturbance shall be repaired at the Contractor's expense within 7 days. Disturbed areas shall be vegetatively stabilized with the appropriate seed mix and protected with hay mulch, cellulous fiber mulch, or erosion control matting.

Limits for control and removal of invasive vegetation shall be maintained for the life of the Contract. Should stakes or flagging be damaged during the course of construction, the Contractor shall re-establish limits. Use of reference staking is permissible.

4. Field Meetings: The Contractor's IVRP must receive acceptance from the Engineer, or their authorized delegate and have the Site surveyed, staked, and flagged prior to any field meeting.

The Contractor shall provide at least 10 working days' notice to the Engineer for any scheduled field meeting(s) as described in the IVRP. During the meeting, the Contractor's IVRP shall be reviewed to verify the identified invasive species and to review the square yardage on the marked- up plan sheet(s). At this time, the Engineer or their authorized delegate may identify additional invasive species or designate additional areas for removal that are not included within the Contractor's submitted IVRP.

Additional field meetings may be warranted at any time, as directed by the Engineer or their authorized delegate, to ensure the Contractor is compliant with the IVRP or amended versions.

5. Treatment: The treatment schedule as identified in the IVRP may be modified based on changes to the Contractor's construction schedule or based on existing field conditions. The Contractor shall provide at least 10 working days' notice to the Engineer or their authorized delegate prior to proceeding with each treatment.

Treatment of invasive species will not be permitted without notifying the Engineer or their authorized delegate prior to activity and such personnel shall be on-Site to observe the work, unless specifically authorized otherwise. Treatment shall not be permitted outside of normal working hours, unless specifically authorized.

Prior to any herbicide treatment on-Site, the Contractor shall provide proof of DEEP Pesticide registration/certification, as specified above in **1. IVRP**. The Contractor shall not perform, nor allow subcontractors to perform, any treatment work at any time unless proof of current registration/certification for the actual supervisor and operator conducting or overseeing the herbicide application is available to the Engineer, upon request.

At a minimum, the Contractor shall treat all areas within the optimal growing season between April 15 and October 15. Additional spot treatment measures may be warranted within the

same optimal growing season in any year throughout the life of the Contract if full control and removal of the invasive species is not achieved within the Project limits as outlined in the IVRP or as identified by the Engineer or their authorized delegate. When herbicide is used, a minimum of 10 working days is required prior to clearing and grubbing, planting, and seeding operations, so the herbicide application can take effect.

Mechanical excavation and disposal may occur at any time of the year as specified above in **2. Special Handling of Invasive Species Vegetation**.

If rain or windy conditions are anticipated on the day of the scheduled treatment, the Contractor will not be allowed to proceed, unless authorized by the Engineer or their authorized delegate.

Method of Measurement:

The work to remove invasive vegetation, as defined above, will be measured for payment by the number of square yards of invasive vegetation surveyed, treated, and removed as required, including any required re-treatment of any regrowth or new growth. This work shall also include the removal of invasive trees, if present. No additional payment will be made for subsequent treatments.

All areas for removal shall be surveyed, flagged, and measured prior to treatment. After a review of the surveyed limits during the field meeting(s), the Engineer may designate additional areas for removal not indicated on the plans which will be measured for payment by the number of square yards treated.

Basis of Payment:

The work for the removal of invasive vegetation and trees will be paid for at the Contract unit price per square yard for "Control and Removal of Invasive Vegetation." Payment shall include all labor, surveys, materials, tools, and equipment necessary for limits of the invasive area(s); development and required revisions of the IVRP; maintenance of the limits throughout the Project; species identification; proof of DEEP pesticide registration/certification; and cutting, excavation and replacement of in-kind material, treating, re-treating, removal, and off-Site disposal of designated invasive plant and tree material. Off-Site disposal of residue shall include the loading, transport, dumping, and fees associated with legal off-Site disposal.

- Upon Engineer's acceptance of the required IVRP, the Contractor will receive payment equal to 10% of the estimated Contract Item value.
- Upon completed initial herbicide or mechanical removal treatment methods as described in the IVRP, the Contractor will receive payment equal to 20% of all areas receiving treatment.
- The Contractor will receive incremental payments for each additional treatment throughout the duration of the Project of all areas receiving treatment. The total of incremental payments will not exceed 40% of the Contract item value.
- Upon successful completion of the 1-year warranty period covering all treated areas on the Project, the Contractor will receive final payment.
- Any fines levied against the Department due to the Contractor's or Subcontractor's failure

to comply with the specifications or applicable regulations will be deducted from the monies due the Contractor.

All other vegetation to be removed which is not designated as invasive vegetation or invasive tree shall be removed in accordance with the Item “Clearing and Grubbing” or other Contract items. Vegetative stabilization of disturbed areas will be paid for under the respective Contract items.

Pay Item	Pay Unit
Control and Removal of Invasive Vegetation	s.y.

ITEM #0969060A - CONSTRUCTION FIELD OFFICE, SMALL

Description:
Under the item included in the bid documents, adequate weatherproof office quarters with related furnishings, materials, equipment, and other services, shall be provided by the Contractor for the duration of the work, and if necessary, for a close-out period determined by the Engineer. The office, furnishings, materials, equipment, and services are for the exclusive use of CTDOT forces and others who may be engaged to augment CTDOT forces with relation to the Contract. The office quarters shall be located convenient to the work site and installed in accordance with Article 1.08.02. This office shall be separated from any office occupied by the Contractor. Ownership and liability of the office quarters shall remain with the Contractor.

Furnishings/Materials/Supplies/Equipment: All furnishings, materials, equipment, and supplies shall be in like new condition for the purpose intended and require approval of the Engineer.

Office Requirements: The Contractor shall furnish the office quarters and equipment as described below:

Description \ Office Size	Small	Med.	Large	Extra Large
Minimum Sq. Ft. of floor space with a minimum ceiling height of 7 ft.	400	720	1400	2800
Minimum number of exterior entrances.	2	2	2	2
Minimum number of parking spaces.	7	7	10	15

Office Layout: The office shall have a minimum square footage as indicated in the table above and shall be partitioned as shown on the building floor plan as provided by the Engineer.

Unless otherwise approved by the Engineer, office space shall be partitioned into segregated work areas for each user as follows:

A. Each work area (or cubicle) shall be a minimum of 8 feet × 8 feet, with full height walls or tall cubicle partitions (minimum 6 feet high), placed to provide a minimum of 6 feet walking space around and between each user work area (for social distancing).
B. Only one user (workstation/desk) per work area.
C. Desks, tables, and other work surfaces shall be arranged so that adjacent users do not face each other.

Tie-downs and Skirting: Modular offices shall be tied-down and fully skirted to ground level.

Lavatory Facilities: For field offices sizes Small and Medium the Contractor shall furnish a toilet facility at a location convenient to the field office for use by CTDOT personnel and such assistants as they may engage; and for field offices sizes Large and Extra Large the Contractor shall furnish two (2) separate lavatories with toilet (men and women), in separately enclosed rooms that are properly ventilated and comply with applicable sanitary codes. Each lavatory shall have hot and cold running

water and flush-type toilets. For all facilities the Contractor shall supply lavatory and sanitary supplies as required.

Windows and Entrances: The windows shall be of a type that will open and close conveniently, shall be sufficient in number and size to provide adequate light and ventilation, and shall be fitted with locking devices, blinds, and screens. The entrances shall be secure, screened, and fitted with a lock for which four keys shall be furnished. All keys to the construction field office shall be furnished to the CTDOT and will be kept in their possession while State personnel are using the office. Any access to the entrance ways shall meet applicable building codes, with appropriate handrails. Stairways shall be ADA/ABA compliant and have non-skid tread surfaces. An ADA/ABA compliant ramp with non-skid surface shall be provided with the Extra-Large field office.

Lighting: The Contractor shall equip the office interior with electric lighting that provides a minimum illumination level of 100 foot-candles at desk level height, and electric outlets for each desk and drafting table. The Contractor shall also provide exterior lighting that provides a minimum illumination level of 2 foot-candles throughout the parking area and for a minimum distance of 10 ft. on each side of the field office.

Parking Facility: The Contractor shall provide a parking area, adjacent to the field office, of sufficient size to accommodate the number of vehicles indicated in the table above. If a paved parking area is not readily available, the Contractor shall construct a parking area and driveway consisting of a minimum of 6 inches of processed aggregate base graded to drain. The base material will be extended to the office entrance.

Field Office Security: Physical Barrier Devices - This shall consist of physical means to prevent entry, such as: 1) All windows shall be barred, or security screens installed; 2) All field office doors shall be equipped with dead bolt locks and regular day operated door locks; and 3) Other devices as directed by the Engineer to suit existing conditions.

Electric Service: The field office shall be equipped with an electric service panel, wiring, outlets, etc., to serve the electrical requirements of the field office, including lighting, general outlets, computer outlets, electronics, etc., and meet the following minimum specifications:

A. 120/240 volt, 1 phase, 3 wire
B. Ampacity necessary to serve all equipment. Service shall be a minimum 100 amp dedicated to the construction field office.
C. The electrical panel shall include a main circuit breaker and branch circuit breakers of the size and quantity required.
D. Additional 120-volt, single phase, 20-amp, isolated ground dedicated power circuit with dual NEMA 5-20 receptacles will be installed at each desk and personal computer table (workstation) location.
E. Additional 120-volt, single phase, 20-amp, isolated ground dedicated power circuit with dual NEMA 5-20 receptacles will be installed, for use by the Telephone Company.
F. Additional 120-volt circuits and duplex outlets as required meeting National Electric Code requirements.

G. One exterior (outside) wall mounted GFI receptacle, duplex, isolated ground, 120-volt, straight blade.
H. After work is complete and prior to energizing, the State's CTDOT electrical inspector, must be contacted at 860-594-2240. (Do Not Call Local Town Officials)
I. Prior to field office removal, the CTDOT Office of Information Systems (CTDOT OIS) must be notified to deactivate the communications equipment.

Heating, Ventilation and Air Conditioning (HVAC): The field office shall be equipped with sufficient and properly operating, heating, air conditioning, and ventilation equipment to maintain a temperature range of 68º-80º Fahrenheit within the field office. The Contractor shall increase ventilation rates and increase the percentage of outdoor air that circulates into the system where possible.

Telephone Service: The Contractor shall provide telephone service with unlimited nation-wide calling plan. For a Small, Medium, and Large field office this shall consist of the installation of one (1) telephone line for phone/voice service. For an Extra-Large field office this shall consist of three (3) telephone lines for phone/voice service. The Contractor shall pay all charges.

The Contractor shall provide the field office telephone number(s) to the CTDOT Project Engineer within 10 calendar days after the signing of the Contract as required by Article 1.08.02.

Data Communications Facility Wiring: As soon as the field office is in place, the Contractor shall propose a central wiring location, to designated CTDOT District personnel for the review and approval of CTDOT OIS. The central wiring location shall be large enough to house the Contractor supplied modem, Contractor supplied patch panel (if applicable), and CTDOT OIS supplied LAN switch and router. The Contractor shall supply the number of Category 6A 568B patch panels necessary to support the anticipated number of networked devices. The central wiring location shall also house the data circuit with appropriate power requirements and Category 6A cable run to the location of the installed data circuit. Power shall be provided at the central wiring location to power the hardware installed.

The Contractor shall install CAT 6A cables from the central wiring location to each workstation, Smart Board/TV location, Multifunction Laser Printer/Copier/Scanner and any other networked devices. The CAT 6A cables shall terminate in a (Category 6A 568B) wall or surface mount data jack at each networked device. Each run / jack shall be clearly labeled with an identifying Jack Number. The CAT 6A cables shall be terminated at the central wiring location with a service loop and RJ45 connectors. The Contractor shall also supply CAT6A cables of adequate length to reach from the wall or surface mount jack to the device being networked.

The number of networked devices anticipated shall be at least equal to the number of personal computer tables, Multi-Function Laser Printer/Copier/Scanner, Contractor supplied devices, and smartboards listed below.

Additional Equipment, Facilities and Services: The Contractor shall provide at the field office at least the following to the satisfaction of the Engineer:

Furnishing Description	Office Size			
	Small	Med.	Large	Extra Large
	Quantity			
Office desk (2.5 ft. x 5 ft.) with drawers, locks, and matching desk chair that have pneumatic seat height adjustment and dual wheel casters on the base.	1	3	5	8
Standard secretarial type desk and matching desk chair that has pneumatic seat height adjustment and dual wheel casters on the base.	-	-	-	1
Personal computer tables (4 ft. x 2.5 ft.).	2	3	5	8
Drafting type tables (3 ft. x 6 ft.) and supported by wall brackets and legs; and matching drafter's stool that have pneumatic seat height adjustment, seat back and dual wheel casters on the base.	1	1	1	2
Conference table, 3 ft. x 12 ft.	-	-	-	1
Table – 3 ft. x 6 ft.	-	-	-	1
Office Chairs.	2	4	8	20
Mail slot bin – legal size.	-	-	1	1
Non-fire-resistant cabinet.	-	-	2	4
Fire resistant cabinet (legal size/4 drawer), locking.	1	1	2	3
Storage racks to hold 3 ft. x 5 ft. display charts.	-	-	1	2
Vertical plan racks for 2 sets of 2 ft. x 3 ft. plans for each rack.	1	1	2	2
Double door supply cabinet with 4 shelves and a lock – 6 ft. x 4 ft.	-	-	1	2
Case of cardboard banker boxes (Min 10 boxes/case)	1	1	2	3
Open bookcase – 3 shelves – 3 ft. long.	-	-	2	2
White Dry-Erase Board, 36" x 48" min. with markers and eraser.	1	1	1	1
Interior partitions – 6 ft. x 6 ft., soundproof type, portable and freestanding.	-	-	6	6
Coat rack with 20 coat capacity.	-	-	-	1
Wastebaskets - 30 gal., including plastic waste bags.	1	1	1	2
Wastebaskets - 5 gal., including plastic waste bags.	1	3	6	10
Electric wall clock.	-	-	-	2
Electronic Level	1	1	1	2

Furnishing Description (continued)	Office Size			
	Small	Med.	Large	Extra Large
	Quantity			
Telephone.	1	2	3	-
Full size stapler 20 (sheet capacity, with staples)	1	2	5	8
Desktop tape dispensers (with Tape)	1	2	5	8
8 Outlet Power Strip with Surge Protection	3	4	6	9
Rain Gauge	1	1	1	1
Business telephone system for three lines with ten handsets, intercom capability, and one speaker phone for conference table.	-	-	-	1
Mini refrigerator - 3.2 c.f. min.	1	1	1	1
Hot and cold-water dispensing unit. Disposable cups and bottled water shall be supplied by the Contractor for the duration of the project.	1	1	1	1
Microwave, 1.2 c.f., 1000W min.	1	1	1	1
Fire extinguishers - provide and install type and *number to meet applicable State and local codes for size of office indicated, including a fire extinguisher suitable for use on a computer terminal fire.	*	*	*	*
Electric pencil sharpeners.	1	2	2	2
Multi-Function Laser Printer/Copier/Scanner combination unit, network capable, as specified below under Field Office Technology	1	1	1	1
Field Office Internet Service and Hardware as specified below under Field Office Technology	1	1	1	1
Digital Camera as specified below under Field Office Technology	1	1	3	3
Teleconferencing Equipment as specified below under Field Office Technology	-	-	-	-
Infrared Thermometer, including annual third-party certified calibration, case, and cleaning wipes.	1	1	1	2
Concrete Curing Box as specified below under Concrete Testing Equipment.	1	1	1	1
Concrete Air Meter and accessories as specified below under Concrete Testing Equipment as specified below. Contractor shall provide third party calibration on a quarterly basis.	1	1	1	1
Concrete Slump Cone and accessories as specified below under Concrete Testing Equipment.	1	1	1	1
First Aid Kit	1	1	1	1
T-handle concrete cylinder mold splitter as specified below under Concrete Testing Equipment	1	1	1	1
Smart Phones as specified under Computer Related Hardware and Software.	-	-	-	-

The furnishings and equipment required herein shall remain the property of the Contractor. Any supplies required to maintain or operate the above listed equipment or furnishings shall be provided by the Contractor for the duration of the project.

Field Office Technology:
The Contractor shall supply the internet service connection, Contractor supplied modem, associated hardware, Digital Camera(s), Smart Phones, Multifunction Laser Printer/Copier/Scanner, Conference Room Teleconferencing Equipment, associated hardware and software meeting the requirements of this specification, as well as the latest minimum specifications posted, as of the Project advertising date, at CTDOTs Construction Field Office Technology web site.

Within 10 calendar days after the signing of the Contract, but before ordering/purchasing the required Digital Camera(s), Smart Phones, Multifunction Laser Printer/Copier/Scanner, Teleconferencing Equipment, as well as associated hardware, the Contractor must submit a copy of their proposed order(s) with catalog cuts and specifications to the Administering CTDOT District for review and approval. The modem, digital cameras, smart phones, and Teleconferencing Equipment will be reviewed by CTDOT District personnel for approval. The Multifunction Laser Printer/Copier/Scanner will be reviewed by the CTDOT OIS. The Contractor shall not purchase the hardware, software, or services until the Administering CTDOT District informs them that the proposed equipment, software, and services are approved. The Contractor will be solely responsible for the costs of any hardware, software, or services purchased without approval.

The Contractor and/or their internet service provider shall be responsible for the installation, setup of the internet service connection and the configuration of the modem with a static IP address. Installation shall be coordinated with CTDOT District and Project personnel. Specifically, the Contractor shall supply the District with a Static IP Address, Subnet Mask Address and Gateway Address immediately upon establishment of internet service connection to assist with OIS equipment installation.

After the approval of the hardware and software, the Contractor shall contact the designated representatives of the CTDOT administering District, a minimum of 2 working days in advance of the proposed delivery or installation of the modem / Internet Service Connection, Digital Camera(s), Smart Phones, Multifunction Laser Printer/Copier/Scanner, Teleconferencing Equipment, as well as associated hardware, software, supplies, and support documentation. The hardware and cabling shall be installed in the field office to and at locations acceptable to the Engineer. Adequate electric service shall be supplied at all hardware and workstation locations to support the Department staff and hardware specified.

The Contractor shall provide all supplies, paper, maintenance, service, and repairs (including labor and parts) for the printer(s), copiers, field office Wi-Fi / internet service, and other equipment and facilities required by this specification for the duration of the Contract. All repairs of contractor supplied equipment and internet service must be performed with-in 48 hours. If the repairs require more than 48 hours, then an equal or better replacement must be provided.

Once the Contract has been completed, the Contractor supplied hardware and software will remain the property of the Contractor.

First Aid Kit: The Contractor shall supply a first aid kit adequate for the number of personnel expected based on the size of the field office specified and shall keep the first aid kit stocked for the duration that the field office is in service.

Rain Gauge: The Contractor shall supply, install and maintain a rain gauge for the duration of the Project, meeting these minimum requirements. The rain gauge shall be installed on the top of a post such that the opening of the rain gauge is above the top of the post an adequate distance to avoid splashing of rainwater from the top of the post into the rain gauge. The location of the rain gauge and post shall be approved by the Engineer. The rain gauge shall be made of a durable material and have graduations of 0.1 inches or less with a minimum total column height of 5 inches. If the rain gauge is damaged the Contractor shall replace it prior to the next forecasted storm event at no additional cost.

Electronic Level: The Contractor shall supply and maintain in working order, for the duration of the Contract, the number of electronic levels, identified in the Additional Equipment, Facilities and Services table of this specification. The electronic level(s) shall meet the following requirements:

A. 48-inch length, box beam type
B. IP65 water and dust proof
C. 0.1-degree accuracy
D. Backlit display
E. Carrying case included
F. New or like new condition

Concrete Testing Equipment: If the Contract includes items that require compressive strength cylinders for concrete, in accordance with the Schedule of Minimum Testing Requirements for Sampling Materials for Test, the Contractor shall provide the following equipment.

A. Concrete Cylinder Curing Box – meeting the requirements of Section 6.12 of the Standard Specifications.
B. Air Meter – The air meter provided shall be in good working order and meet the requirements of AASHTO T 152.
C. Slump Cone Mold – Slump cone, base plate, and tamping rod shall be provided in like-new condition and meet the requirements of AASHTO T 119, Standard Test Method for Slump of Hydraulic-Cement Concrete.
D. T-handle concrete cylinder mold splitter.

All testing equipment will remain the property of the Contractor at the completion of the Project.

Insurance Policy: The Contractor shall provide a separate insurance policy, with no deductible, in the minimum amount of five thousand dollars ($5,000) to insure all State-owned data equipment and supplies used in the office against all losses. The Contractor shall be named insured on that policy, and the CTDOT shall be an additional named insured on the policy. Insured losses shall include, but not be limited to, theft, fire, and physical damage. The CTDOT will be responsible for all

maintenance costs of CTDOT owned computer hardware. In the event of loss, the Contractor shall provide replacement equipment in accordance with current CTDOT equipment specifications, within seven days of notice of the loss. If the Contractor is unable to provide the required replacement equipment within seven days, CTDOT may provide replacement equipment and deduct the cost of the equipment from monies due or which may become due the Contractor under the Contract or under any other contract. The Contractor's financial liability under this paragraph shall be limited to the amount of the insurance coverage required by this paragraph. If the cost of equipment replacement required by this paragraph should exceed the required amount of the insurance coverage, CTDOT will reimburse the Contractor for replacement costs exceeding the amount of the required coverage.

Maintenance: During field office occupancy by CTDOT, the Contractor shall maintain all facilities and furnishings provided under the above requirements, and shall maintain and keep the office quarters clean through the use of professional cleaning including vacuuming carpet, washing and waxing floors, cleaning restrooms, removal of trash, general cleaning, etc.

Exterior areas shall be mowed and clean of debris. A trash receptacle (dumpster) with weekly pickup (trash removal) shall be provided. Snow removal, sanding and salting of all parking, walkway, and entrance way areas shall be accomplished during a storm if on a workday during work hours, immediately after a storm and prior to the start of a workday. If snow removal, salting and sanding are not completed by the specified time, the State will provide the service and all costs incurred will be deducted from the next payment estimate.

Method of Measurement:
The furnishing and maintenance of the Construction Field Office will be measured for payment by the number of calendar months that the office is in place and in operation, rounded up to the nearest month.

There will not be any price adjustment due to any change in the minimum computer related hardware and software requirements.

Basis of Payment:
The furnishing and maintenance of the Construction Field Office will be paid for at the Contract unit price per month for "Construction Field Office, (Type)," which price shall include all material, equipment, labor, service contracts, licenses, software, repair or replacement of hardware and software, related supplies, utility services, parking area, external illumination, trash removal, snow and ice removal, and work incidental thereto, as well as any other costs to provide requirements specified herein.

Pay Item	Pay Unit
Construction Field Office, (Small)	Month

ITEM #0971001A – MAINTENANCE AND PROTECTION OF TRAFFIC

Article 9.71.01 – Description *is supplemented by the following:*

The Contractor shall maintain and protect traffic as described by the following and as limited in the special provision for Section 1.08 - Prosecution and Progress:

Glen Street

The Contractor shall maintain and protect a minimum of 1 lane of traffic in each direction with each lane on a paved travel path not less than 11 feet in width, with the following exceptions:

1. During the allowable periods and when the Contractor is actively working, the Contractor will be permitted to maintain and protect at least an alternating one-way traffic operation on a paved travel path not less than 11 feet in width and no more than 300 feet in length, unless specified elsewhere in the Contract. There shall be no more than one alternating one-way traffic operation within the Project limits without prior approval of the Engineer.
2. The Contractor will be permitted to close Glen Street to through traffic and detour traffic as shown on the Detour Plans. The Contractor shall notify the Engineer at least 14 days in advance of implementing the detour.

All Other Roadways

The Contractor shall maintain and protect existing traffic operations on all other roadways.

Commercial and Residential Driveways
The Contractor shall maintain access to and egress from all commercial and residential driveways throughout the Project limits. The Contractor will be permitted to temporarily close affected driveways while actively working with coordination and permission from the owner or proprietor.

Article 9.71.03 - Construction Methods *is supplemented as follows:*

General
Unpaved travel paths will only be permitted for areas requiring full depth and full width reconstruction. The unpaved section shall be the full width of the road and shall be perpendicular to the travel lanes. The Contractor will be allowed to maintain traffic on processed aggregate for a duration not to exceed 10 calendar days and opposing traffic lane dividers shall be used as a centerline.

The Contractor is required to delineate any raised structures within the travel lanes, so that the structures are visible day and night, unless there are specific Contract plans and provisions to temporarily lower these structures prior to the completion of work.

The Contractor shall schedule operations so that pavement removal and roadway resurfacing shall be completed full width across a roadway or bridge section by the end of a work shift, or as directed by the Engineer.

When the installation of all intermediate courses of bituminous concrete pavement is completed for the entire roadway, the Contractor shall then install the final course of bituminous concrete pavement.

When the Contractor is excavating adjacent to the roadway, the Contractor shall provide a 3 foot shoulder between the work area and travel lanes, with traffic drums spaced every 50 feet. At the end of the work shift if the vertical drop-off exceeds 3 inches, the Contractor shall provide a temporary bituminous concrete traversable slope of 4:1 or flatter that is acceptable to the Engineer.

When an existing sign is to be relocated or replaced, the work shall be completed during the same work shift.

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

Existing Signing
The Contractor shall maintain all existing overhead and side-mounted signs within the Project limits throughout the duration of the Project. The Contractor shall temporarily relocate signs and sign supports as many times as deemed necessary and shall install temporary sign supports if necessary and as directed by the Engineer.

Requirements for Winter
The Contractor shall schedule a meeting with representatives of the Department, including the offices of Maintenance and Traffic, and the Town/City to determine any interim traffic control measures the Contractor shall accomplish prior to winter to provide safety to motorists and permit adequate snow removal procedures. This meeting shall be held prior to October 31 of each year and will include, but not be limited to, discussion of the status and schedule of the following items: lane and shoulder widths, pavement restoration, traffic signal work, pavement markings, and signing.

Signing Patterns
The Contractor shall erect and maintain all signing patterns in accordance with the traffic control plans contained herein. Proper distances between advance warning signs and proper taper lengths are mandatory.

Pavement Markings – Glen Street

During construction, the Contractor shall maintain all pavement markings on paved surfaces on all roadways throughout the limits of the Project.

Temporary pavement markings shall be installed on each intermediate course of bituminous concrete pavement and on any milled surface by the end of the work shift.

Permanent Epoxy Resin Pavement Markings shall be installed on the final course of bituminous concrete pavement within 10 calendar days of the final pavement installation if no Pavement Marking Grooves are proposed.

Temporary Pavement Markings

Temporary pavement markings that will be in place for less than 72 continuous hours may consist of temporary plastic pavement marking tape at the Contractor's expense. Additionally;

1. These temporary pavement markings shall include centerlines, lane lines (solid and broken), and stop bars.
2. Centerlines shall consist of two 4 inch wide yellow markings, 2 feet in length, side by side, 4 inches apart, at 40 foot intervals.
3. Lane lines shall consist of 4 inch wide white markings, 2 feet in length, at 40 foot intervals.
4. No passing zones shall be posted with signs in those areas where the final centerlines have not been established on two-way roadways.
5. Stop bars may consist of two 6 inch wide white markings or three 4 inch wide white markings placed side by side.
6. The temporary plastic pavement marking tape shall be installed in accordance with Section 12.12.
7. The Contractor shall remove and dispose of the temporary plastic pavement marking tape prior to another course of bituminous concrete pavement being installed.

Temporary pavement markings that will be in place for 72 continuous hours or more should consist of temporary painted pavement markings and shall be installed in accordance with Section 12.09. The markings shall include centerlines, edge lines, lane lines (solid and broken), lane-use arrows, and stop bars on each intermediate course of bituminous concrete pavement and on any milled surface by the end of the work shift Edge lines and lane-use arrows are not required if the next course of bituminous concrete pavement will be placed within 10 calendar days.

All temporary pavement markings exposed throughout the winter shall be Epoxy Resin Pavement Markings, unless directed otherwise by the Engineer.

Temporary pavement markings, as described above, shall be maintained until the permanent pavement markings are installed.

Final Pavement Markings

Permanent epoxy resin pavement markings shall be installed on the final course of bituminous concrete pavement within 10 calendar days of the final pavement installation.

If Temporary Plastic Pavement Marking Tape is installed, then the Contractor shall remove and dispose of these markings during the same work shift that the permanent epoxy resin pavement

markings are to be installed. The cost of furnishing, installing and removing the Temporary Plastic Pavement Marking Tape shall be at the Contractor's expense.

Traffic Control During Construction Operations
The following guidelines shall assist field personnel in determining when and what type of traffic control patterns to use for various situations. These guidelines shall provide for a safer and more efficient movement of traffic through work zones and enhance the safety of work forces in the work area.

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

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

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

Lane reduction tapers should be placed so that the entire length of the taper is installed on a tangent section of roadway and the entire taper area can be seen by the motorist.

All existing conflicting signs shall be removed, covered with an opaque material, or turned so that they are not legible to oncoming traffic prior to implementing a traffic control pattern. The existing signs shall be uncovered or reinstalled once the pattern is removed.

A buffer area should be provided during installation of a traffic control pattern and maintained for the duration of the work. The buffer area shall be free of any equipment, workers, materials, and parked vehicles.

Construction Traffic Control Plans 19 through 25 should be used for moving operations such as line striping, rumble strips, pothole patching, mowing, or sweeping when it is necessary for equipment to occupy a travel lane.

Traffic control patterns are not required for vehicles on an emergency patrol type activity or for a short duration stop of up to one hour, as long as the equipment is contained within the shoulder. Flashing lights, arrow boards, truck-mounted or trailer-mounted impact attenuators, and appropriate Trafficperson(s) shall be used when required.

In a situation not adequately covered by the Construction Traffic Control Plans, the Contractor shall contact the Engineer for assistance prior to setting up a traffic control pattern.

Placement of Signs

Signs shall be placed in a position that allows motorists the opportunity to reduce their speed prior to the work area. Signs shall be installed on the same side of the roadway as the work area. On multi-lane divided highways, advance warning signs shall be installed on both sides of the highway. On directional roadways (on-ramps, off-ramps, one-way roads) where the sight distance to signs is restricted, these signs should be installed on both sides of the roadway.

Allowable Adjustment of Signs and Devices Shown on the Construction Traffic Control Plans

The Construction Traffic Control Plans contained herein show the location and spacing of signs and devices under ideal conditions. Signs and devices should be installed as shown on these plans. The proper application of the Construction Traffic Control Plans and installation of traffic control devices is dependent upon actual field conditions.

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

Adjustments to the Construction Traffic Control Plans shall only be made at the direction of the Engineer.

Table 1 indicates the minimum taper lengths required for a lane closure based on the posted speed limit and lane width of the roadway. These taper lengths shall only be used when the recommended taper lengths shown on the Construction Traffic Control Plans cannot be achieved.

Table 1 – Minimum Taper Length

POSTED SPEED LIMIT (MPH)	MINIMUM TAPER LENGTH FOR A SINGLE LANE CLOSURE (FEET)	
	FREEWAYS	SECONDARY ROADS
30 OR LESS	180	165
35	245	225
40	320	295
45	540	495
50	600	550
55	660	605
65	780	715

SECTION I. WORK ZONE SAFETY MEETINGS

1.a) Prior to the commencement of work, a Work Zone Safety Meeting shall be conducted with representatives from DOT Construction, Connecticut State Police (Local Barracks), Municipal Police, the Contractor (Project Superintendent) and the Traffic Control Subcontractor (if different than the prime Contractor) to review the traffic operations, lines of responsibility, and operating guidelines which will be used on the Project. DOT Traffic Engineering shall be invited to the Work Zone Safety Meeting. Other Work Zone Safety Meetings during the course of the Project should be scheduled as needed.

1.b) A Work Zone Safety Meeting Agenda shall be developed and used at the Meeting to outline the anticipated traffic control issues during the construction of this Project. Any issues that can't be resolved at these Meetings will be brought to the attention of the District Engineer and the Office of Construction. The agenda shall include:

- Review Project scope of work and time;
- Review Section 1.08, Prosecution and Progress;
- Review Section 9.70, Trafficpersons;
- Review Section 9.71, Maintenance and Protection of Traffic;
- Review Contractor's schedule and method of operations;
- Review special concern areas: ramps, turning roadways, medians, lane drops, etc.;
- Open discussion of work zone questions and issues;
- Discussion of review and approval process for changes in Contract requirements as they relate to work zone areas.

SECITION 2. GENERAL

2.a) Traffic control patterns shall only be installed if the required minimum number of signs, traffic cones, traffic drums, and other equipment (i.e. one Arrow Board for each lane closed, two Truck-Mounted or Trailer-Mounted Attenuators (TMAs), Changeable Message Sign, etc.) are on Site.

2.b) The Contractor shall have spare maintenance and protection of traffic equipment (TMAs, Arrow Board, Changeable Message Sign(s), construction signs, traffic cones, traffic drums, etc.) available at all times in case of mechanical failures, etc. Spare maintenance and protection of traffic equipment installed as a result of a sudden equipment breakdown shall be replaced by the Contractor within 24 hours.

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

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

SECTION 3. INSTALLING AND REMOVING TRAFFIC CONTROL PATTERNS

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

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

3.c) Stopping traffic may be allowed within the allowable hours stated in Section 1.08.04:

- For those activities stated within the Contract.
- During paving, milling operations, or similar activities where, in the middle of the operation, it is necessary to flip the pattern to complete the operation on the other half of the roadway so traffic does not travel across the longitudinal joint or difference in roadway elevation.
- To move slow moving equipment across live traffic lanes into the work area.

3.d) The Contractor shall adhere to using the proper signs, placing the signs correctly, and ensuring the proper spacing of signs.

3.e) Additional devices are required on entrance ramps, exit ramps, and intersecting roads to warn and/or move traffic into the proper travel path prior to merging with or exiting from the mainline traffic. This shall be completed before installing the mainline pattern past the ramp or intersecting roadway.

3.f) Workers are prohibited from crossing the travel lanes on limited access roadways to install and remove signs or other devices on the opposite side of the roadway. Any signs or devices on the opposite side of the roadway shall be installed and removed separately.

SECTION 4. IMPLEMENTATION OF ROLLING ROAD BLOCK (RRB)

4.a) Temporary road closures using a RRB may be allowed on limited access highways for operations associated with the installation and removal of temporary lane closures. RRB may be allowed for the installation and removal of lead signs and lane tapers only and shall meet the following requirements:

- Refer to the Limitation of Operations Chart provided in Section 1.08.04 for the hours allowed for implementing a RRB operation. The Contractor shall only implement a RRB operation within the hours shown in the Chart.
- In areas with good sight lines and full shoulders, signs on the side of the road opposite the traffic pattern should be installed in a separate operation.
- TMAs equipped with Arrow Boards shall be used to slow traffic to implement the RRB. State Police Officers in marked vehicles may be used to support the implementation of the RRB. The RRB shall start by having all vehicles, including TMAs and police vehicles, leave the shoulder or on-ramp and accelerate to normal roadway speeds in each lane. The vehicles will then position themselves side by side and decelerate to the RRB speed on the highway.
- A Pre-Warning Vehicle, as specified elsewhere in the Contract, shall be used to advise the motorists that sign pattern installation or removal is underway.
- The RRB duration shall not exceed 15 minutes from the start of the traffic block until all lanes are opened as designated in the Limitation of Operations chart. If the RRB duration exceeds 15 minutes on 2 successive shifts, no further RRB will be allowed until the Contractor obtains approval for a revised installation procedure from the District.
- RRB shall not be used to expand a lane closure pattern to an additional lane during the shift. The workers and equipment required to implement the additional lane closure should be staged from within the closed lane. TMAs (and State Police if available) shall be used to protect the workers installing the taper in the additional lane.
- Exceptions to these work procedures may be submitted to the District Office for consideration. A minimum of 2 business days shall be allowed for review and comment by the District.
- The Engineer and the Contractor will review and discuss the RRB procedures (including any revisions) in advance of the work. The implementation of the agreed upon plan will be reviewed with the State Police during the Work Zone Safety Meeting held before each shift involving temporary lane closures. If the State Police determine that alternative procedures should be implemented for traffic control during the work shift, the Department and Contractor will attempt to resolve any discrepancies with the duty sergeant at the Troop. If the discrepancies are unable to be resolved prior to the start of the shift, then the work will proceed as recommended by the Department. Any unresolved issues shall be addressed the following day.

SECTION 5. USE OF ARROW BOARDS

5.a) On limited access roadways, one Arrow Board shall be used for each lane that is closed.

The Arrow Board shall be installed concurrently with the installation of the traffic control pattern and its placement shall be as shown on the Construction Traffic Control Plans. Additional Arrow Boards shall be deployed if sight distances are limited.

5.b) On non-limited access roadways, the use of an Arrow Board for lane closures is optional. The roadway geometry, sight distance, and traffic volume shall be considered in the decision to use the Arrow Board.

5.c) A vehicle displaying an arrow board shall be equipped with high-intensity rotating, flashing, oscillating, or strobe lights.

5.d) The flashing arrow mode shall be used for lane closure (merge) tapers.

5.e) The flashing arrow mode shall not be used for temporary alternating one-way traffic operations or to laterally shift lanes of traffic.

5.f) The flashing double arrow mode shall only be used for closing a center lane on a multilane roadway where adjacent left and right lanes remain open.

5.g) For shoulder work or roadside work near the shoulder, the Arrow Board shall be positioned in the shoulder and the flashing alternating diamond mode should be used.

5.h) The flashing alternating diamond caution mode should also be used when supplemental Arrow Boards are positioned in an already closed lane.

SECTION 6. USE OF TRUCK-MOUNTED OR TRAILER-MOUNTED IMPACT ATTENUATORS (TMAS)

6.a) On limited access roadways, lane closures shall use a minimum of two TMAs to install and remove traffic control patterns. If two TMAs are not available, then the pattern shall not be installed.

6.b) On non-limited access roadways, the use of TMAs to install and remove patterns closing a lane(s) is optional. The roadway geometry, sight line distance, and traffic volume shall be considered in the decision to utilize the TMAs.

6.c) On limited access roadways, one TMA shall be placed on the shoulder and the second TMA shall be approximately 1,000 feet ahead blocking the lane to establish the advance and transition signing. The Arrow Board mounted on the TMA shall be in the arrow mode when taking the lane. The sign truck and workers shall be at sufficient distance ahead of the second TMA. In no case shall the TMA be used as the sign truck or a work truck. Once the transition is in place, the TMAs shall travel in the closed lane until all Portable Changeable Message Signs, signs, Arrow Boards, and cones/drums are installed. The Arrow Board mounted on the TMA should be in the flashing alternating diamond caution mode when traveling in the closed lane.

6.d) A TMA shall be placed prior to the first work area in the pattern. If there are multiple work areas within the same pattern, then additional TMAs shall be positioned at each additional work area as needed. The Arrow Board mounted on the TMA should be in the flashing alternating diamond caution mode when in the closed lane.

6.e) TMAs shall be positioned a sufficient distance prior to the workers or equipment being protected to allow for appropriate vehicle roll-ahead in the event that the TMA is hit, but not so far that an errant vehicle could travel around the TMA and into the work area. For additional placement and use details, refer to Section 18.06. Some operations, such as paving and concrete repairs, do not allow for placement of the TMA(s) within the specified distances. In these situations, the TMA(s) shall be placed at the beginning of the work area and shall be advanced as the paving or concrete operations proceed.

6.f) TMAs will be paid for in accordance with how the unit is used. If it is used as a TMA and is in the proper location as specified, then it will be paid for at the specified hourly rate for Truck-Mounted or Trailer-Mounted Impact Attenuator. When the TMA is used as an Arrow Board, it will be paid for at the daily rate for Arrow Board. If a TMA is used to install and remove a pattern and is also used as an Arrow Board in the same day, then the unit will be paid for as a Truck-Mounted or Trailer-Mounted Impact Attenuator for the hours used to install and remove the pattern, typically 2 hours (1 hour to install and 1 hour to remove). If the TMA is also used as an Arrow Board during the same day, then the unit will only be paid for at the daily rate as an Arrow Board.

SECTION 7. USE OF TRAFFIC DRUMS AND TRAFFIC CONES

7.a) On limited-access highways, ramps, and turning roadways:

- Traffic drums shall be used for taper channelization.
- Traffic drums shall be used to delineate raised catch basins and other hazards.
- Traffic cones with a minimum height of 42 inches may be used in place of drums in the tangent section of a closed lane or shoulder.
- Traffic cones less than 42 inches in height shall not be used.

7.b) On all roadways:

- Traffic drums shall be used in place of traffic cones in traffic control patterns that are in effect for more than a 36-hour duration.
- Traffic cones shall not be left unattended.
- Traffic cones with a minimum height of 42 inches shall be used when the posted speed limit is 45 MPH or above.

7.c) Typical spacing of traffic drums and/or cones shown on the Construction Traffic Control Plans in the Contract are maximum spacings and may be reduced to meet actual field conditions as required.

SECTION 8. USE OF BARRICADE WARNING LIGHTS

8.a) Barricade Warning Lights may be installed on channelizing devices when used in a merge taper. The Barricade Warning Lights shall flash in a sequential pattern when used in a merge taper. The successive flashing shall occur from the upstream end (beginning) of the merge taper to the downstream end (end) of the merge taper.

8.b) Type C Barricade Warning Lights may be used at night to delineate the edge of the travel way.

8.c) Type B Barricade Warning Lights shall be used on post-mounted advanced warning signs.

SECTION 9. USE PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS)

9.a) On limited access roadways, one PCMS shall be used in advance of the traffic control pattern for all lane closures. Prior to installing the pattern, the PCMS shall be installed and in operation, displaying the appropriate lane closure information. The PCMS shall be positioned ½ to 1 mile ahead of the start of the lane closure taper. If the distance to the nearest exit ramp is greater than the specified ½ to 1 mile distance, then an additional PCMS shall be positioned a sufficient distance ahead of the exit ramp (and before the previous on-ramp where practical) to alert motorists to the work and therefore offer them an opportunity to take the exit.

9.b) On non-limited access roadways, the use of PCMS for lane closures is optional. The roadway geometry, sight line distance, and traffic volume shall be considered in the decision to use the PCMS.

9.c) PCMS should be placed off the shoulder of the roadway and behind a traffic barrier, if practical. Where a traffic barrier is not available to shield the PCMS, it should be placed off the shoulder and outside of the clear zone. If a PCMS has to be placed on the shoulder of the roadway or within the clear zone, it should be placed on the paved shoulder with a minimum of five traffic drums placed in a taper in front of it to delineate its position. The taper shall meet minimum distance requirements for a shoulder closure. The PCMS shall be protected if it is used for a continuous duration of 36 hours or more.

9.d) The PCMS shall be removed from the clear zone and have the display screen cleared and turned 90 degrees away from the roadway when the PCMS is no longer required.

9.e) The PCMS should not be used within 1,000 feet of an existing PCMS or Variable Message Sign (VMS).

9.f) A PCMS message shall:

- consist of no more than two phases;
- contain no more than three lines of text per phase;

- have no more than eight characters per line, including spaces.

9.g) The PCMS should be used for specific situations that need to command the motorist's attention which cannot be conveyed with standard construction signs. The PCMS should not be used for generic messages (ex.: Road Work Ahead, Bump Ahead, Gravel Road, etc.) or for messages that need to be displayed for long periods of time, such as during stage construction. These types of messages should be displayed with construction signs. Special signs shall be coordinated with the Office of Construction and the Division of Traffic Engineering for the proper layout/dimensions required.

9.h) Typical messages that are allowed on the PCMS are shown below. Approval must be received from the Office of Construction for any message(s) different than the typical messages shown in Figure 1.

9.i) All messages shall comply with the information provided in Tables 2 and 3.

Phase 1	Phase 2	Message No.	Phase 1	Phase 2
1 LEFT LANE CLOSED	MERGE RIGHT		9 LANES CLOSED AHEAD	REDUCE SPEED
2 2 LEFT LANES CLOSED	MERGE RIGHT		10 LANES CLOSED AHEAD	USE CAUTION
3 LEFT LANE CLOSED	REDUCE SPEED		11 EXIT XX CLOSED	USE EXIT YY
24 LEFT LANES CLOSED	REDUCE SPEED		12 EXIT XX CLOSED USE YY	FOLLOW DETOUR
5 RIGHT LANE CLOSED	MERGE LEFT		2 13 LANES SHIFT AHEAD	USE CAUTION
2 6 RIGHT LANES CLOSED	MERGE LEFT		3 14 LANES SHIFT AHEAD	USE CAUTION
7 RIGHT LANE CLOSED	REDUCE SPEED			
2 8 RIGHT LANES CLOSED	REDUCE SPEED			

Figure 1: Typical PCMS Messages

Table 2: Acceptable Abbreviations

Word Message	Standard Abbreviation	Word Message	Standard Abbreviation
Access	ACCS	Minimum	MIN
Afternoon / Evening	PM	Minor	MNR
Ahead	AHD	Minute(s)	MIN
Alternate	ALT	Monday	MON
Avenue	AVE, AV	Morning / Late Night	AM
Bicycle	BIKE	Mount	MT
Blocked	BLKD	Mountain	MTN
Boulevard	BLVD	National	NATL
Bridge	BR	Normal	NORM
CB Radio	CB	North	N
Center	CTR	Northbound	NBND
Center	CNTR	Oversized	OVRSZ
Chemical	CHEM	Parking	PKING
Circle	CIR	Parkway	PKWY
Compressed Natural Gas	CNG	Pavement	PVMT
Condition	COND	Pedestrian	PED
Congested	CONG	Place	PL
Construction	CONST	Pounds	LBS
Court	CT	Prepare	PREP
Crossing	XING	Quality	QLTY
Crossing (other than highway-rail)	XING	Right	RT
Downtown	DWNTN	Road	RD
Drive	DR	Roadwork	RDWK
East	E	Route	RT, RTE
Eastbound	EBND	Saint	ST
Electric Vehicle	EV	Saturday	SAT
Emergency	EMER	Service	SERV
Entrance, Enter	ENT	Shoulder	SHLDR
Exit	EX	Slippery	SLIP
Express	EXP	South	S
Expressway	EXPWY	Southbound	SBND
Feet	FT	Speed	SPD
Freeway	FRWY, FWY	State, county, or other non-US or non-Interstate numbered route	[Route Abbreviation determined by highway agency]**
Friday	FRI	Street	ST
Frontage	FRNTG	Sunday	SUN
Hazardous	HAZ	Telephone	PHONE
Hazardous Material	HAZMAT	Temporary	TEMP
High Occupancy Vehicle	HOV	Terrace	TER
Highway	HWY	Thruway	THWY
Highway-Rail Grade Crossing	RR XING	Thursday	THURS

Hospital	HOSP	Tons of Weight	T
Hour(s)	HR, HRS	Traffic	TRAF
Information	INFO	Trail	TR
International	INTL	Travelers	TRVLRS
Interstate	I-	Tuesday	TUES
Junction / Intersection	JCT	Turnpike	TPK
Lane	LN	Two-Way Intersection	2-WAY
Left	LFT	Two-Wheeled Vehicles	CYCLES
Liquid Propane Gas	LP-GAS	Upper	UPR
Local	LOC	US Numbered Route	US
Lower	LWR	Vehicle(s)	VEH, VEHS
Maintenance	MAINT	Warning	WARN
Major	MAJ	Wednesday	WED
Maximum	MAX	West	W
Mile(s)	MI	Westbound	WBND
Miles Per Hour	MPH		

** A space and no dash shall be placed between the abbreviation and the number of the route.

Table 3: Unacceptable Abbreviations

Unacceptable Abbreviation	Intended Word	Common Misinterpretation
ACC	Accident	Access (Road)
CLRS	Clears	Colors
DLY	Delay	Daily
FDR	Feeder	Federal
L	Left	Lane (Merge)
LT	Light (Traffic)	Left
PARK	Parking	Park
POLL	Pollution (Index)	Poll
RED	Reduce	Red
STAD	Stadium	Standard
WRNG	Warning	Wrong

SECTION 10. USE OF STATE POLICE OFFICERS

10.a) State Police may be used only on limited access highways and secondary roadways that are under their primary jurisdiction. A minimum of one Officer may be used per critical sign pattern; however, a State Police presence is not required. Shoulder closures and right lane closures can generally be implemented without the presence of a State Police Officer. Left lane closures may also be implemented without State Police presence in areas with only moderate traffic and wide, unobstructed medians. It may be desirable to have a State Police presence, when available, under specific situations, such as nighttime lane closures; left lane closures with minimal width for setting up advance signs and staging; lane and shoulder closures on turning roadways/ramps or mainline where sight distance is minimal; and closures where extensive turning movements or traffic congestion regularly occur; however, they are not required.

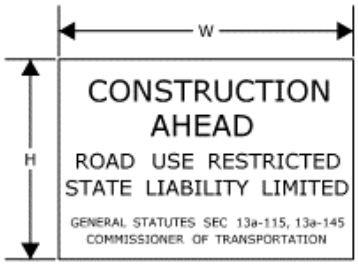
10.b) If a State Police presence is provided, once the pattern is in place, the State Police Officer should be positioned in a non- hazardous location in advance of the pattern to provide advance warning to the motorist. If traffic backs up beyond the beginning of the pattern, then the State Police Officer shall reposition so that they are located prior to the backup. The State Police Officer should not be located immediately behind or within the roll ahead area of any TMA or within the work zone buffer area. The State Police Officer shall not be positioned in such a way that the State Police Officer obstructs any construction warning signs or PCMS from view of the motorist.

10.c) Other functions of the State Police Officer(s) may include:

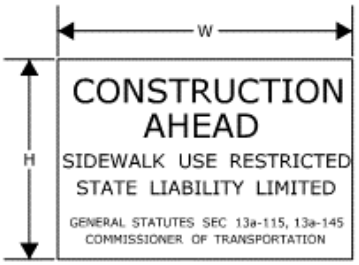
- Assisting construction vehicles entering and exiting the work area.
- Enforcement of motor vehicle laws within the work area, if specifically requested by the Engineer.

10.d) State Police Officers assigned to a work site shall take direction from the Engineer.

SERIES 16 SIGNS



		W H
16-E	80-1605	84" x 60"
16-H	80-1608	60" x 42"
16-M	80-1613	30" x 24"



		W H
16-S	80-1619	48" x 30"

SIGN 16-S SHALL BE USED ON ALL PROJECTS THAT REQUIRE SIDEWALK RECONSTRUCTION OR RESTRICT PEDESTRIAN TRAVEL ON AN EXISTING SIDEWALK.

SERIES 16 SIGNS SHALL BE INSTALLED IN ADVANCE OF THE TRAFFIC CONTROL PATTERNS. SERIES 16 SIGNS SHOULD BE LOCATED TO ALLOW MOTORISTS THE OPPORTUNITY TO AVOID A WORK ZONE. SERIES 16 SIGNS SHOULD BE INSTALLED ON MAJOR INTERSECTING ROADWAYS THAT APPROACH THE WORK ZONE. ON LIMITED-ACCESS HIGHWAYS, THESE SIGNS SHOULD BE LOCATED IN ADVANCE OF THE NEAREST UPSTREAM EXIT RAMP AND ON ANY ENTRANCE RAMPS PRIOR TO OR WITHIN THE WORK ZONE LIMITS.

SIGNS 16-E AND 16-H SHALL BE POST-MOUNTED.

SIGN 16-E SHALL BE USED ON ALL FREEWAYS AND EXPRESSWAYS.

SIGN 16-H SHALL BE USED ON ALL RAMPS, OTHER STATE ROADWAYS AND MAJOR TOWN/CITY ROADWAYS.

SIGN 16-M SHALL BE USED ON OTHER TOWN ROADWAYS.

CONSTRUCTION TRAFFIC CONTROL PLAN
SERIES 16 SIGNS

SCALE: NONE

CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

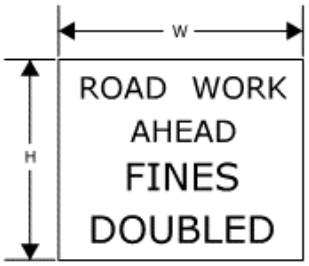
APPROVED Tracy L. Fogarty, P.E. 2013.10.09 16:30:32-04'00'
PRINCIPAL ENGINEER

REGULATORY SIGN "ROAD WORK AHEAD, FINES DOUBLED"

THE REGULATORY SIGN "ROAD WORK AHEAD FINES DOUBLED" SHALL BE INSTALLED FOR ALL WORK ZONES THAT OCCUR ON ANY STATE HIGHWAY AND MUNICIPAL ROAD IN CONNECTICUT WHERE THERE ARE WORKERS PRESENT ON THE HIGHWAY.

THE "ROAD WORK AHEAD FINES DOUBLED" REGULATORY SIGN SHALL BE PLACED AFTER THE SERIES 16 SIGN AND IN ADVANCE OF THE "ROAD WORK AHEAD" SIGN.

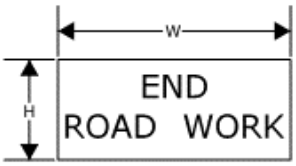
	W	H
31-1906	48"	42"
31-1907	60"	54"



"END ROAD WORK" SIGN

THE LAST SIGN IN THE PATTERN SHALL BE THE "END ROAD WORK" SIGN.

	W	H
80-9606	36"	18"
80-9612	48"	24"



CONSTRUCTION TRAFFIC CONTROL PLAN

ROAD WORK AHEAD SIGNS

SCALE: NONE

CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

APPROVED

Tracy L. Fogarty, P.E.
2019.09.12 15:54:44-04'00'

PRINCIPAL ENGINEER

NOTES FOR TRAFFIC CONTROL PLANS

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

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

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

4. TRAFFIC CONES AND PORTABLE CONSTRUCTION SIGNS SHALL NOT BE LEFT UNATTENDED.

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

6. IF THIS PLAN REMAINS IN CONTINUOUS OPERATION FOR MORE THAN 48 HOURS, THEN ANY EXISTING CONFLICTING PAVEMENT MARKINGS SHALL BE ERADICATED OR COVERED, AND TEMPORARY PAVEMENT MARKINGS THAT DELINEATE THE PROPER TRAVELPATHS SHALL BE INSTALLED.

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

8. IF THIS PLAN IS TO REMAIN IN OPERATION FROM SUNSET TO SUNRISE, INSTALL BARRICADE WARNING LIGHTS - HIGH INTENSITY ON ALL POST-MOUNTED DIAMOND SIGNS IN THE ADVANCE WARNING AREA.

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

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

TABLE 1 - MINIMUM TAPER LENGTHS

POSTED SPEED LIMIT (MILES PER HOUR)	MINIMUM TAPER LENGTH FOR A SINGLE LANE CLOSURE
30 OR LESS	180'
35	245'
40	320'
45	540'
50	600'
55	660'
65	780'

CONSTRUCTION TRAFFIC CONTROL PLAN

NOTES

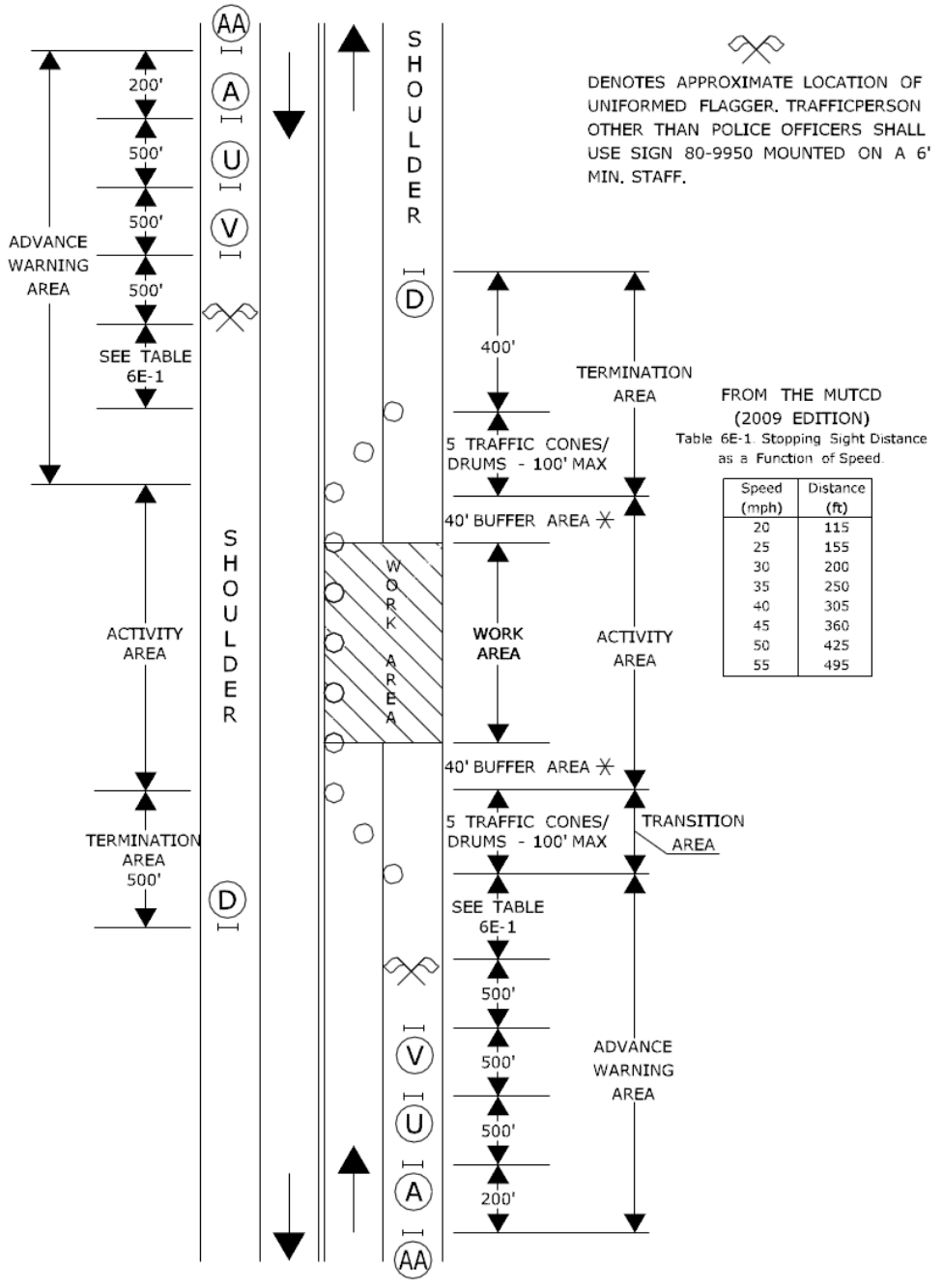
SCALE: NONE

CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

APPROVED Tracy L. Fogarty, P.E. 2019.09.13 08:47:47-04'00'

PRINCIPAL ENGINEER

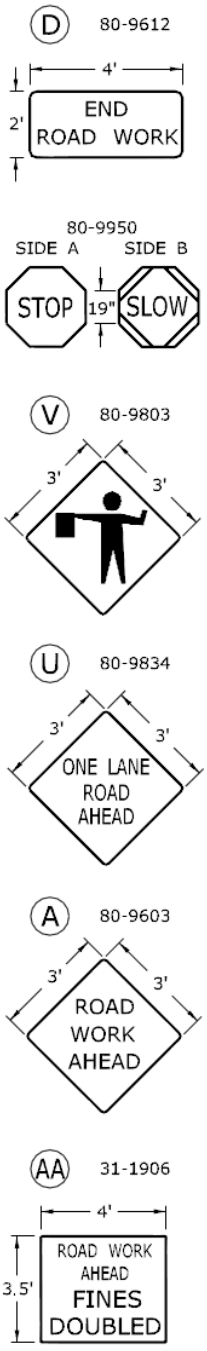
WORK IN TRAVEL LANE AND SHOULDER
TWO LANE HIGHWAY
ALTERNATING ONE-WAY TRAFFIC OPERATIONS



FROM THE MUTCD (2009 EDITION)
Table 6E-1. Stopping Sight Distance as a Function of Speed.

Speed (mph)	Distance (ft)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495

SIGN FACE
108 SQ. FT (MIN.)



○ TRAFFIC CONE **OR** TRAFFIC DRUM
✳ OPTIONAL ⊗ TRAFFIC DRUM ⊢ PORTABLE SIGN SUPPORT
← HIGH MOUNTED INTERNALLY ILLUMINATED FLASHING ARROW

SCALE: NONE

CONSTRUCTION TRAFFIC CONTROL PLAN
PLAN 13 - SHEET 1 OF 2
SEE NOTES 1, 2, 4, 6, 7, 8

CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

APPROVED Charles S. Harlow 2012.06.05 15:55:23-04'00'
PRINCIPAL ENGINEER

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

SIGN FACE
108 SQ. FT (MIN.)

HAND SIGNAL METHODS TO BE USED BY UNIFORMED FLAGGERS

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

A. TO STOP TRAFFIC

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

B. TO DIRECT TRAFFIC TO PROCEED

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

C. TO ALERT OR SLOW TRAFFIC

TO ALERT OR SLOW TRAFFIC, THE FLAGGER SHALL FACE ROAD USERS WITH THE SLOW PADDLE FACE AIMED TOWARD ROAD USERS IN A STATIONARY POSITION WITH THE ARM EXTENDED HORIZONTALLY AWAY FROM THE BODY. TO FURTHER ALERT OR SLOW TRAFFIC, THE FLAGGER HOLDING THE SLOW PADDLE FACE TOWARD ROAD USERS MAY MOTION UP AND DOWN WITH THE FREE HAND, PALM DOWN.

◯ TRAFFIC CONE **OR** TRAFFIC DRUM
✳ OPTIONAL ⊗ TRAFFIC DRUM ⊢ PORTABLE SIGN SUPPORT
⟵ HIGH MOUNTED INTERNALLY ILLUMINATED FLASHING ARROW

SCALE: NONE

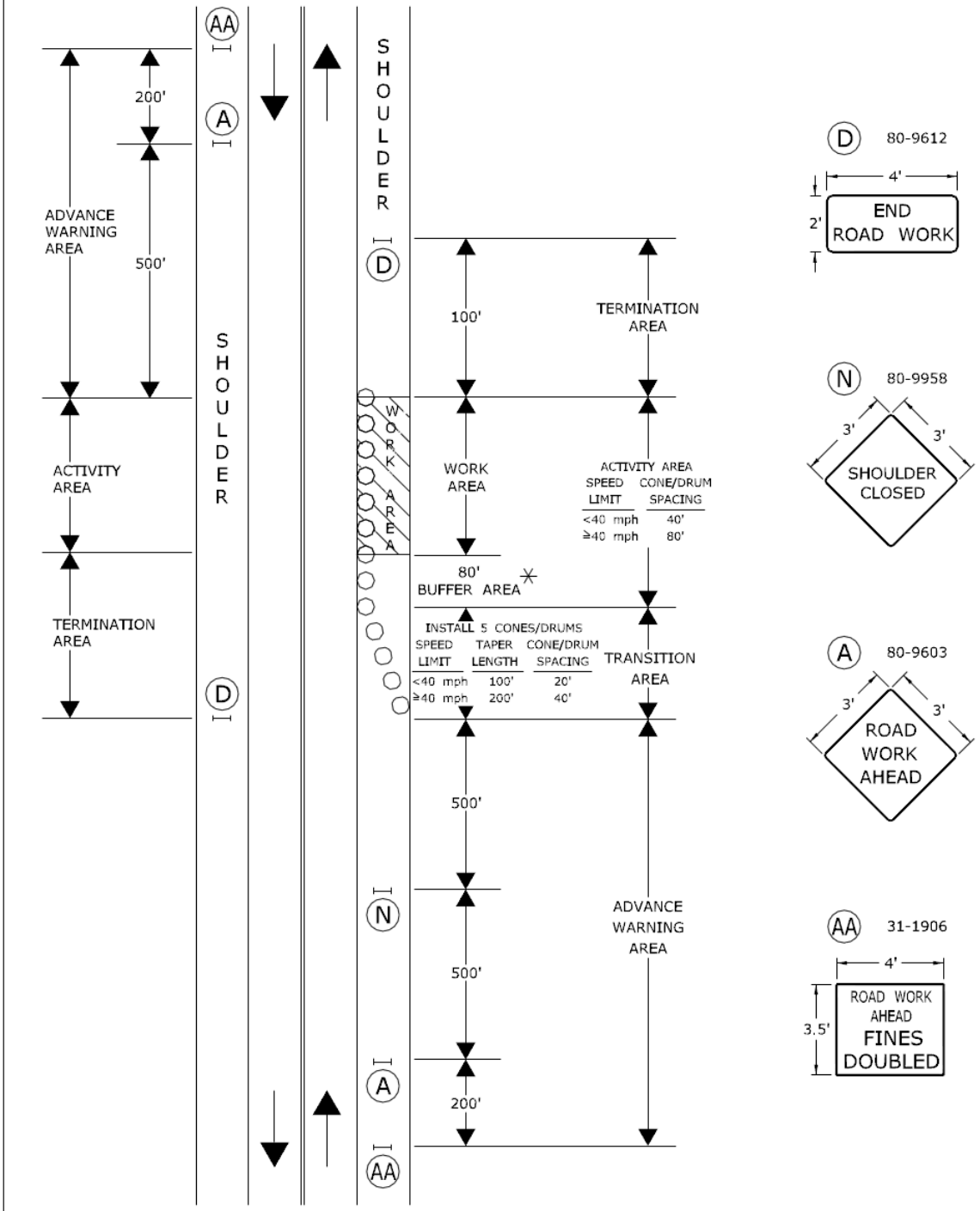
CONSTRUCTION TRAFFIC CONTROL PLAN
PLAN 13 - SHEET 2 OF 2
SEE NOTES 1, 2, 4, 6, 7, 8

CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

APPROVED Charles S. Harlow 2012.06.05 15:55:45-04'00'
PRINCIPAL ENGINEER

WORK IN SHOULDER - TWO LANE HIGHWAY

SIGN FACE
71 SQ. FT (MIN.)



TRAFFIC CONE **OR** TRAFFIC DRUM
OPTIONAL TRAFFIC DRUM PORTABLE SIGN SUPPORT
HIGH MOUNTED INTERNALLY ILLUMINATED FLASHING ARROW

SCALE: NONE

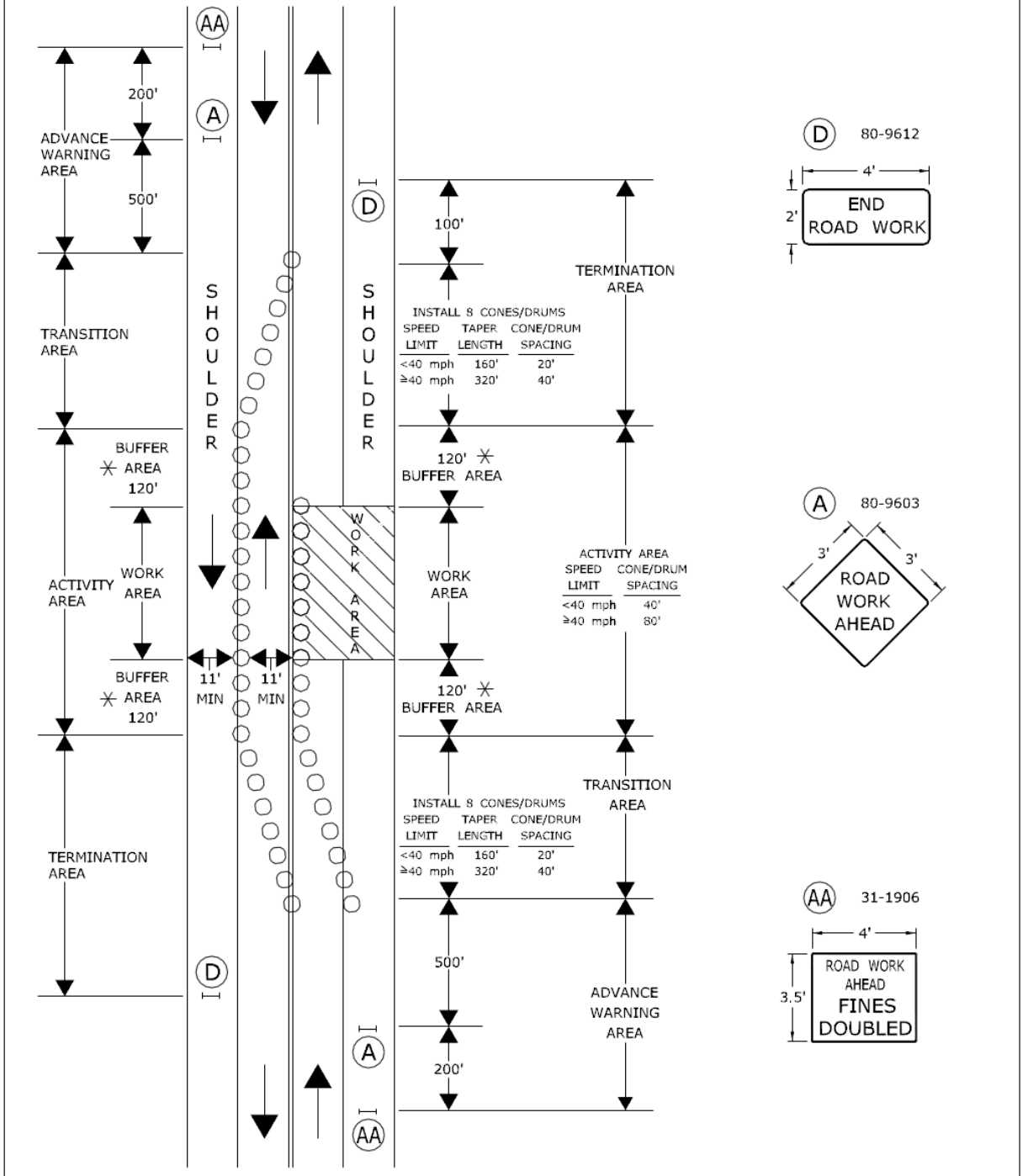
CONSTRUCTION TRAFFIC CONTROL PLAN
PLAN 14
SEE NOTES 1, 2, 4, 7, 8

CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

APPROVED Charles S. Harlow 2012.06.05 15:56:09-04'00'
PRINCIPAL ENGINEER

WORK IN TRAVEL LANE AND SHOULDER
TWO LANE HIGHWAY

SIGN FACE
62 SQ. FT (MIN.)



TRAFFIC CONE **OR** TRAFFIC DRUM
OPTIONAL ⊗ TRAFFIC DRUM PORTABLE SIGN SUPPORT
HIGH MOUNTED INTERNALLY ILLUMINATED FLASHING ARROW

SCALE: NONE

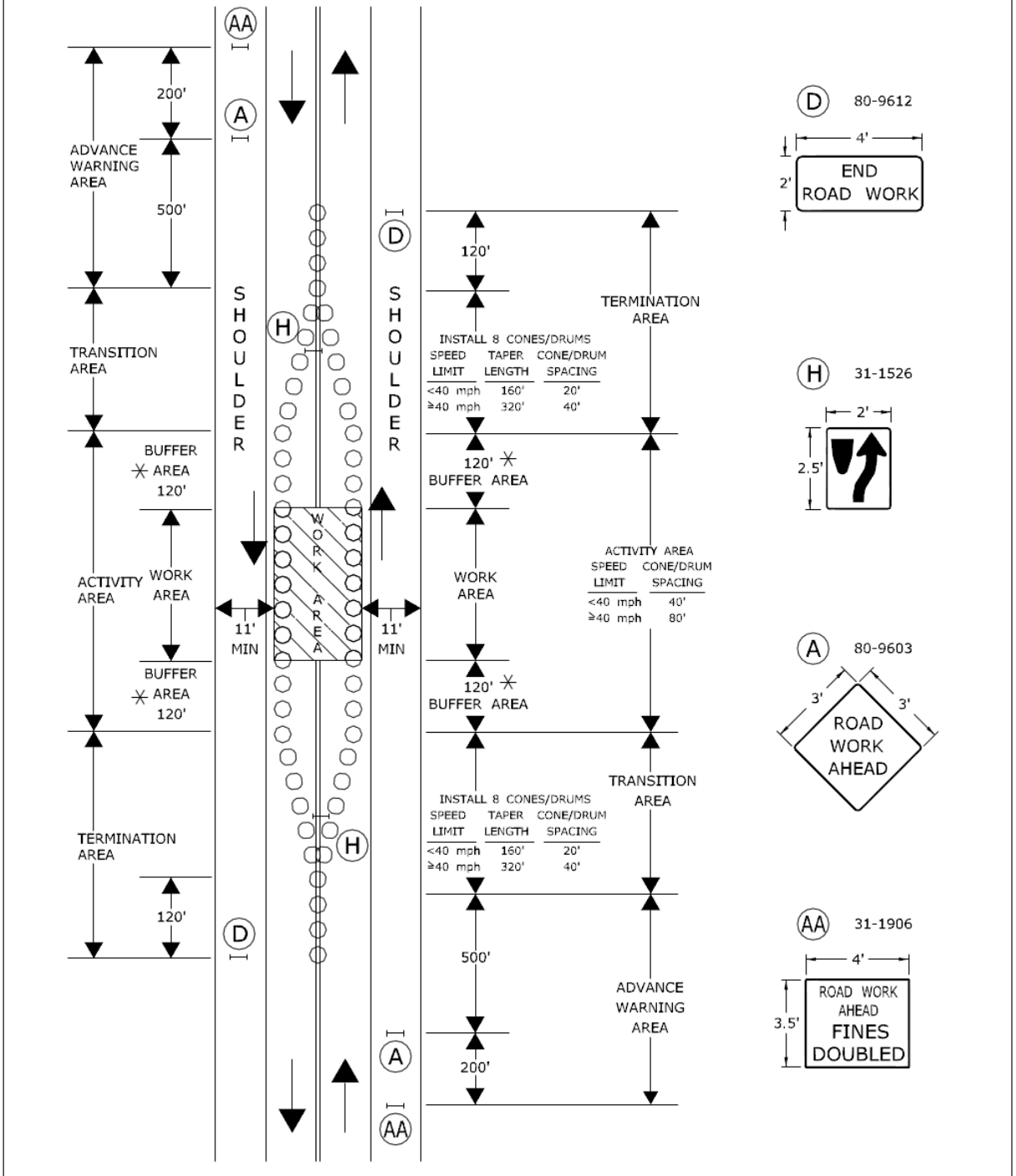
CONSTRUCTION TRAFFIC CONTROL PLAN
PLAN 15
SEE NOTES 1, 2, 4, 6, 7, 8

CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

APPROVED Charles S. Harlow 2012.06.05 15:56:29-04'00'
PRINCIPAL ENGINEER

WORK IN MIDDLE OF ROADWAY
TWO LANE HIGHWAY

SIGN FACE
72 SQ. FT (MIN.)



TRAFFIC CONE **OR** TRAFFIC DRUM
OPTIONAL ⊗ TRAFFIC DRUM ⊢ PORTABLE SIGN SUPPORT
HIGH MOUNTED INTERNALLY ILLUMINATED FLASHING ARROW

SCALE: NONE

CONSTRUCTION TRAFFIC CONTROL PLAN
PLAN 16
SEE NOTES 1, 2, 4, 6, 7, 8

CONNECTICUT DEPARTMENT OF TRANSPORTATION
BUREAU OF ENGINEERING & CONSTRUCTION

APPROVED Charles S. Harlow 2012.06.05 15:56:51-04'00'
PRINCIPAL ENGINEER

Article 9.71.05 – Basis of Payment *is supplemented by the following:*

The temporary relocation of signs and supports, and the furnishing, installation and removal of any temporary supports shall be paid for under the item "Maintenance and Protection of Traffic". Temporary overhead sign supports and foundations shall be paid for under the appropriate item(s).

The cost of furnishing, installing, and removing the material for the 4H:1V traversable slope shall be paid for under the item "Maintenance and Protection of Traffic".

ITEM #1208937A–SIGN FACE SHEET ALUMINUM (TYPE XI RETROREFLECTIVE SHEETING)

Section 12.08 is supplemented and amended as follows:

12.08.01 - Description:

Add the following:

All signs shall use Type XI retroreflective sheeting with the exception of side-mounted signs with white background which shall be Type IX.

This item shall also include field testing of metal sign base posts as directed by the Engineer.

Signs shall conform to the sign details located at https://portal.ct.gov/DOT/Traffic-Engineering/Catalog-of-Signs with legend for variable signs as shown in the plans.

12.08.03 - Construction Methods:

Delete the last sentence and add the following:

Metal sign base posts shall be whole and uncut. Sign base post embedment and reveal lengths shall be as shown on the plans. The Contractor shall drive the metal sign base posts by hand tools, by mechanical means or by auguring holes. If an obstruction is encountered while driving or placing the metal sign base post, the Contractor shall notify the Engineer who will determine whether the obstruction shall be removed, the sign base post or posts relocated, or the base post installation in ledge detail shall apply. Backfill shall be thoroughly tamped after the posts have been set level and plumb.

Field Testing of Metal Sign Posts: When the sign installations are complete, the Contractor shall notify the Engineer the Project is ready for field testing. Based on the number of posts in the Project, the Engineer will select random sign base posts which shall be removed by the Contractor for inspection and measurement by the Engineer. After such inspection is completed at each base post location, the Contractor shall restore or replace such portions of the work to the condition required by the Contract. Refer to the table in 12.08.05 for the number of posts to be field tested.

12.08.04 - Method of Measurement:

Add the following:

The work required to expose and measure sign base post length and embedment depth using field testing methods, and restoration of such work, will not be measured for payment and shall be

included in the general cost of the work.

12.08.05 - Basis of Payment:

Replace the entire Article with the following:

This work will be paid for at the Contract unit price per square foot for "Sign Face - Sheet Aluminum" of the type specified complete in place, adjusted by multiplying by the applicable Pay Factor listed in the table below. The price for this work shall include the completed sign, metal sign post(s), span-mounted sign brackets and mast arm-mounted brackets, mounting hardware, including reinforcing plates, field testing, restoration and replacement of defective base post(s), and all materials, equipment, and work incidental thereto.

Pay Factor Scale: Work shall be considered defective whenever the base post length or base post embedment depth is less than the specified length by more than 2 inches. If the number of defects results in rejection, the Contractor shall remove and replace all metal sign base posts on the Project, at no cost to the Department.

Number of Posts to be Tested and Pay Factors (Based on Number of Defects)

Number of Posts in Project =>	**51-100**	**101-250**	**251-1000**	**>1000**
Sample Size=>	**5 Posts**	**10 Posts**	**40 Posts**	**60 Posts**
0 Defects	1.0	1.0	1.025	1.025
1 Defect	0.9	0.95	0.975	0.983
2 Defects	Rejection	0.9	0.95	0.967
3 Defects	Rejection	Rejection	0.925	0.95
4 Defects	Rejection	Rejection	0.9	0.933
5 Defects	Rejection	Rejection	Rejection	0.917
6 Defects	Rejection	Rejection	Rejection	0.9
7 or more Defects	Rejection	Rejection	Rejection	Rejection

Note: Projects with 50 or fewer posts will not include field testing

ITEM #1301017A – FURNISHING AND INSTALLING TEMPORARY WATER MAIN CROSSING

Description:
Work under this item shall consist of the design, construction, installation, maintenance, and removal of a temporary utility structure to carry an 8-inch ductile iron water main over the Mattabesset River including superstructure, substructure, and all associated work. Coordination and cooperation will be required with Kensington Fire Department KFD). The Contractor shall install the 8-inch water main on the temporary structure and shall be responsible to connect and maintain the water main on the temporary structure until installation of the permanent water main is completed. When the temporary water main is no longer required, the Contractor shall disconnect and remove the temporary connections to the water main at the branch line valve and install mechanical joint plugs. The temporary structure with water main shall then be removed by the Contractor and the banks of the brook restored by the Contractor.

This temporary utility structure shall also support the existing sewer main currently located at the bridge site. The existing sewer main must remain in service until the proposed replacement sewer main has been installed and verified in service.

Materials:

Unless otherwise specified by the Engineer all ductile iron water main, fittings and appurtenances will be provided by Contractor to KFD for approval.

1. Ductile iron water main to be installed will be Class 52 with mechanical joint pipe with joint restraint glands.
2. The materials for the water main support system (pipe roller assemblies) shall be those proposed by Contractor and approved by KFD.
3. The materials for excavating to the depth necessary to install the temporary water main pipe and to furnish and install pipe bedding material as directed by the KFD.

Construction Methods:

The State's Contractor shall be fully responsible for the design, detailing and any additional specifications or permits required. The designer of the support system shall be a qualified Professional Engineer licensed in the State of Connecticut. Signed and sealed working drawings and calculations, including foundation calculations shall be provided. Said structure and supports shall provide sufficient anchorage to resist the force of the 100-year flood shown on the contract plans. The support system shall be designed per KFD Requirements. Working drawings shall be provided to KFD for approval.

The construction drawings for the utility support system shall include the following minimum information:

1. Type and grade of structural materials.
2. Allowable material stresses in bending, compression, and shear.
3. Modulus of elasticity “E”.
4. References for load data used for standardized, manufactured components.
5. Specification references for design criteria.
6. The live loads used.
7. The bearing value of the soil as determined by the Contractor when footing type foundations are to be used.
8. The total design reaction at each substructure foundation.
9. Details showing how the water main will be supported and held in place.

The temporary water main is anticipated to be an 8-inch diameter ductile iron pipe, Class 52 mechanical joint pipe (29.3lbs. /ft. empty, 51.96lbs. /ft. full). The water main shall be placed on rollers spaced not more than 10 feet apart, minimum 2 supports per pipe length and held in place bolted to a steel dual W-section beam structure per the contract drawings.

Wherever required, trench excavation shall be performed for placement for temporary water main. The excavation shall be deemed earth excavation, which shall include the removal of all material other than rock. The extent of trenching and excavation, including rock, shall be in accordance with the Typical Trench Detail, and shall be 6 inches below the bottom of the pipe in earth and 12 inches below the bottom of the pipe in rock. The depth of trench may be increased or decreased at the discretion of KFD as required to avoid obstructions.

Water main piping shall be bedded on compacted bedding material meeting M.08.03 and obtained from approved natural deposits and unprocessed except for the removal of unacceptable material and stones larger than one-half inch in size.

The temporary water main crossing shall be in place prior to any disruption of the existing 8-inch water main and shall remain in place during the staged construction of the new bridge until the new permanent water main on the bridge is fully operational. It shall be the responsibility of the Contractor to coordinate their work schedule, where required, with that of the KFD.

1. Pressure and Leakage Testing

   Pressure and leakage testing and disinfection shall be the responsibility of the Contractor. If any test of pipe laid discloses leakage, the Contractor shall locate and repair the defective materials until the leakage is corrected as directed by the KFD.

2. Water quality testing shall be carried out by the KFD.

3. Removal of Temporary Structure

   Once the new, permanent utilities have been installed on the bridge and placed into service, the Contractor shall then remove the temporary utility bridge and above grade water main

structure from the project area for disposal, remove and dispose of any temporary foundations and restore the area to original condition.

Method of Measurement:

The Temporary Water Main Crossing, being paid for on a lump sum basis, will not be measured for payment.

Basis of Payment:

The Water Main Support System will be paid for at the contract lump sum price for "Furnishing and Installing Temporary Water Main Crossing", which price shall include all support materials, equipment, tools, and labor necessary to provide a complete system accepted by the Engineer, the State and the KFD.

Pay Item	Pay Unit
Furnishing and Installing Temporary Water Main Crossing	LS

ITEM #1301069A – INSULATED 8” DUCTILE IRON WATER MAIN

ITEM #1301082A – 8” DUCTILE IRON PIPE (WATER MAIN)

Description:
There is a single 8” steel water main running beneath the southbound lane of Glen Street operated by the Kensington Fire District (KFD). The overall project effort includes installation of a temporary water main supported on a utility steel bridge outboard of the existing bridge, and reinstallation of water main on the newly reconstructed bridge. This overall project effort is divided among several special provision items. The work of this item covers that portion of the ductile iron piping system for permanent installation. The removal of existing water main shall be covered under the item “Remove Water Main”.

Work under this item includes coordination with KFD for installation of tapping sleeves and insertion valves in advance of the installation of the permanent water main, also required inspections by KFD, and for witnessing and documentation of testing, disinfection, and flushing, and as additionally outlined below.

Included in this work shall be all labor, tools, materials, accessories, appurtenances, equipment, hauling, transport, incidentals, coordination, shop drawing submissions, documentation, As-Builts, disposal of any components replaced as a part of this work, polyethylene encasement, and any incidental work not specifically mentioned but necessary to result in a complete, acceptable, and operational system, all included in the unit cost. Installation of insulation on pipe for short segments behind bridge end walls, as well as sealing of backwall penetrations, all as shown on the drawings, is also included. Similarly, pipe bedding shall be placed included with the work of this item. Also included in this work is maintenance of uninterrupted water service, coordination among related work items, coordination with KFD and parties having jurisdiction, and coordination with other utility custodians having adjacent facilities.

Materials:

The Contractor shall submit to the Engineer manufacturer's specifications, data, catalog cuts, etc., for all water distribution system materials and products incorporated into the work. All materials proposed for use shall be acceptable to the KFD. The KFD reserves the right to inspect and approve all materials furnished by the Contractor at the manufacturer's plant. All pipe and appurtenances shall be subject to inspection by the KFD at the point of delivery. Material found to be defective due to manufacture or damage in shipment shall be rejected, recorded on the bill of lading, and removed from the job site. The KFD may perform tests as specified in the applicable AWWA standard to ensure conformance with the standard. In case of failure of the pipe or appurtenance to comply with such specifications, the replacement of the defective materials shall become the responsibility of the Contractor. All brass items shall conform to the “Lead Free Brass Standards” as approved by the AWWA.

<u>Ductile Iron Water Main:</u>

Pipe shall be Thickness Class 52, with a minimum pressure rating of 350 PSI., manufactured and finished in The United States of America and in accordance with ANSI/AWWA C151/A21.51-02 or the latest revisions thereof. All ductile iron pipe shall be double cement mortar-lined and double bituminous seal coated inside and bituminous seal coated on the exterior per ANSI/AWWA C104/A21.4-03. Piping shall be certified per NSF/ANSI 61and marked to distinguish it from non-certified pipe on site.

All fittings shall be ductile iron in accordance with ANSI/AWWA C153/A21.53, rated for 350 PSI working pressure, double cement lined, and double seal coated inside, and bituminous seal coated on the exterior per ANSI/AWWA C104/A21.4-03.

Pipe and fitting joints shall be push-on type with mechanical or restrained flexible jointing (TR Flex) configuration matching connecting pipe, and/or as identified on the drawings. Fittings shall be certified per NSF/ANSI 61. All pipe and fitting joints shall employ a single, elongated grooved rubber gasket to affect the joint seal.

Approved Manufacturers of Mechanical Joint Ductile Iron Pipe / Fittings
McWane Ductile
American Cast Iron Pipe Company
United States Pipe & Foundry Company

All ductile iron pipe, valves, fittings, and specialty items installed in the permanent underground water main system, and where called out, shall have mechanical joints utilizing ductile iron restraints rated for 350 PSI pipeline pressure. Restraints shall consist of a ductile iron harness bolted to the flange of the adjacent pipe bell and utilizing serrated wedge type anchors to grip the pipe barrel. The harness shall be constructed of ASTM A 536 ductile iron. The harness shall be a one-piece design. (See below for retrofit of existing joints with restraints). The anchors shall employ torque limiting twist-off nuts. Set screw type restraints shall not be used.

Approved manufacturers of joint restraints
Megalug Series 1100, manufactured by EBAA Iron Inc.
Romagrip MJ Restraining gland, manufactured by Romac Industries, Inc.

Gaskets shall be Styrene Butadiene Rubber (SBR) conforming to the requirements of ANSI A21.11/AWWA C111, supplied by the pipe or fitting manufacturer.

Pipe Bedding Material

Water main, branch and branch piping, and any existing underground pipe joints requiring retrofit with restraint, shall be bedded in select fine gravel material obtained from approved natural deposits and unprocessed except for the removal of unacceptable material and stones larger than the maximum size permitted. It shall not contain vegetation. It shall be free from loam and other organic matter, clay, and other fine or harmful substances, and have a gradation within the following limits:

Sieve Size	Percentage by Weight Passing
3 in.	100
1/2 in.	80-100
No. 4	60-80
No. 40	10-30
No. 200	0-10

Gate Valves:
Main line and branch valves shall be resilient-seated gate valves of full weight ductile iron body, non-rising stem, mechanical joint, complete with Type 316 stainless steel trim, O-ring seal with a 2" x 2" operating nut, manufactured in the United States and in accordance with ANSI/AWWA C509-01 or the latest revision thereof. *Note: Lightweight/thin wall ductile iron body valves are* ***not*** *accepted.*

As a minimum, the inside of the valve body and bonnet are to be coated with a fusion bonded epoxy in accordance with ANSI/AWWA C550-05 or the latest revision thereof. All bolts shall be stainless steel ASTM F593.

Valves shall have a working pressure rating of 200 PSI. Gate valve opening direction shall be coordinated with KFD.

Approved Manufacturers and Products
Mueller Company A-2362-20 (MJ)
U.S. Pipe Resilient Seat Valve AUSP223

Valve Boxes
Valve boxes shall be iron-body with close fitting dirt-tight covers, 2-piece (26-inch top, 36 inch bottom,) 5 ¼-inch shaft adjustable slide type. The top of the cover shall be flush with the top of the box rim with the word "WATER" clearly marked.

Approved Manufacturers
Bingham & Taylor #4908
Bibby St. Croix #V683 (5664)
Tyler/Union Foundry #7126

Restrained Couplings:
Restrained couplings shall consist of a coupling sleeve of ductile iron per ASTM A536, with end restraint rings of ductile iron per ASTM A536, with gaskets and corrosion resistant, low alloy high strength, double ended threaded rods with nuts per AWWA C111/A21.11. Steel sleeves or steel restraint rings shall not be used. Wetted parts shall be lined with a minimum 15 mil fusion bonded epoxy coating per ANSI/AWWA C213, conforming to ANSI/NSF-61. Restraint rings shall have a heat cured protective coating and shall employ heat cured epoxy coated serrated wedges with torque limiting nuts to grip the connecting pipe. Set screw types shall not be used. The restrained coupling assembly shall be rated for 350 PSI.

Approved Manufacturers
Restrained coupling shall be Series 3800 by EBAA Iron, Eastland, TX,
Alpha restrained Joint Coupling by Romac Industries

Retrofit Restraint for Pipe Joints:
Existing pipe joints found without acceptable restraint and designated to be retrofitted with joint restraint will utilize the following restraints by pipe joint type:

Mechanical joint pipe – Restraints shall consist of a split ductile iron harness bolted to the flange to the adjacent pipe bell, utilizing serrated wedge type anchors to grip the pipe barrel. The harness shall be constructed of ASTM A 536 ductile iron. The harness shall be a split type for retrofit to existing joints without disassembling the joint. Harness anchors shall employ torque limiting twist-off nuts. Set screw type restraints shall not be used.

Approved Manufacturers
Megalug Series 1100SD by EBAA Iron
Split Stargrip Series 3000S by Star Pipe Products

Push-On joint pipe – Restraints shall consist of a split ring ductile iron harness designed to fit behind the pipe bell, and a split ring harness for the joining pipe barrel, utilizing serrated wedge type anchors to grip the pipe barrel. The harnesses shall be constructed of ASTM A 536 ductile iron. Harnesses shall be joined by corrosion resistant rods and nuts. Harness anchors shall employ torque limiting twist-off nuts. The assembly shall have a minimum pipeline pressure rating of 300 PSI. Set screw type restraints shall not be used.

Approved Manufacturers
Megalug Series 1100HD by EBAA Iron
Split Stargrip Series 3100S by Star Pipe Products

Warning Tape:
Warning tape shall be a minimum 3-inch wide, 4.0 mil polyethylene film suitable for buried service. The tape shall be blue in color per the A.P.W.A. National Color Code and shall be permanently imprinted with a warning label indicating a "Water Main Buried Below."

Thrust Blocks:
Thrust blocks shall be provided at all tees, at all bends 45 degrees bends and greater, and where indicated on the plans. Reinforcement shall be as indicated on the plans. Concrete shall be PCC03360 and have a 28-day minimum compressive strength of 3,000 PSI.

Corporation Stops (valves)
Corporation stops shall be Mueller ball type corporations B25008N1 rated for 300 psi bronze-body ground key design manufactured in the United States in accordance with ANSI/AWWA StandardC800-05. The inlet shall have a standard AWWA corporation valve inlet thread (Mueller - CC) and the outlet shall be a compression connection for copper tubing.

Underground Pipe Insulation

Field-applied insulation underground behind bridge end walls shall be closed cell, rigid, cellular plastic foam of polyurethane or polyurethane modified polyisocyanurate, supplied in preformed sections free of voids, and conforming to outside pipe diameter or outside diameter of inner insulation layer where insulation overlaps at fittings or special piping components, and with the following properties:

Property	Value
Thickness, inches	2
Minimum density, LB/FT^3 per ASTM D1622	2.05
Minimum Compressive Strength parallel / perpendicular to rise – thickness, in LB/IN^2 per ASTM D1621	24/30
R-Value per inch, at 180 days, 75°F, in HR-FT2-°F/BTU, per ASTM C518	5.3
Closed Cell Content, in % per ASTM D6226 90	90
Water Absorption, maximum, in % by volume, 24 hr absorption, per ASTM C272	0.7
Water Vapor Permeability, maximum, perm-inch, per ASTM E96	4
Service Temperature range °F	(-) 297 to (+) 300
Flame Spread Index per ASTM E84	≤25

Insulation shall be Trymer™ 2000XP by ITW Insulation Systems, Corafoam® by Duna-USA or approved equal.

Insulation jacket (exterior casing) * shall be UV inhibited, 50 mil, High Density Polyethylene (H.D.P.E.) ASTM D-1248 with the following physical properties:

ASTM D-638……Ultimate Elongation 850%
ASTM D-638……Tensile Yield Strength 3300 psi
ASTM D-3350…. Resin Type III, Grade P34
ASTM D-790……Tangent Flexural Modules 175,000 psi
***No tape casings will be allowed.**

Jacket shall be held on with Type 316 stainless steel bands or screws, or other approved methods.

Construction Methods:

Material Storage and Handling

All pipe, fittings, valves, live taps, hydrants, and accessories shall be loaded and unloaded by lifting with hoists or skid/pallet handling equipment in order to avoid shock or damage. Under no circumstances shall such material be dropped. Pipe handled on pallets or skidways shall not be rolled or skidded against pipe on the ground. Lifting and handling equipment shall be padded and used in such a manner as to prevent damage to the exterior surface or internal lining of the pipe.

Pipe and fittings shall not be handled by insertion of forks or tongs, or any device designed for insertion, in order to prevent damage to the lining. All Materials shall be protected from damage.

The interior of all pipes, fittings and other appurtenances shall be kept free from dirt or foreign matter at all times. Valves and hydrants shall be drained and stored in such a manner to protect them from damage by freezing or accumulation of water or snow melt. Pipe shall not be stacked higher than the limits shown in Table 1. The bottom tier shall be kept off the ground on timbers, rails, or concrete. Pipe in tiers shall be alternated: bell, plain end; bell, plain end. At least two rows of timbers shall be placed between tiers and chocks, affixed to each in order to prevent movement. The timbers shall be large enough to prevent contact between the pipes in adjacent tiers.

All gaskets for mechanical and push-on joints shall be stored in a cool location protected from direct sunlight. Gaskets shall NOT come in contact with petroleum products. Gaskets shall be used on a first-in, first out basis. Mechanical-joint nuts and bolts shall be handled and stored in such a manner to ensure proper use with respect to types and sizes.

Rigid closed cell foam insulation shall be placed around the water main to protect against freezing where a storm line crosses directly above or below the new main.

TABLE 1 - Maximum Stacking Heights for Ductile Iron Pipe*

Nominal Pipe Size (in)	Number of Tiers
6 & 8	11
10	10
12	9

* For 18- or 20-foot (5.5 or 6.1m) lengths.

Water Main Installation:
Main line valves may only be operated by the KFD. The contractor shall coordinate accordingly.

The contractor shall follow AWWA, KFD, and CT DOT construction guidelines, and in the event of a discrepancy, follow KFD standards.

Proper implements, tools and facilities shall be provided and used for the safe and convenient performance of the work. All pipe, fittings, valves, and hydrants shall be lowered carefully into the trench by means of a crane, slings or other suitable tools or equipment in such a manner as to prevent damage to water main materials and protective coatings and linings. Under no circumstances shall water main materials be dropped or dumped into the trench.

All pipes, fittings, valves, hydrants, and other appurtenances shall be examined carefully for damage and other defects immediately before installation. Defective materials shall be marked and held for inspection by the Engineer, who may prescribe corrective repairs or reject the materials.

All lumps, blisters and excess coating shall be removed from the socket and plain ends of each pipe, and the outside of the plain end and the inside of the bell shall be wiped clean and dry and be free from dirt, sand, grit, or any foreign materials before the pipe is laid.

Foreign material shall be prevented from entering the pipe while it is being placed in the trench. No debris, tools, clothing, or other materials shall be placed in the pipe at any time.

Polyethylene encasement shall be placed on the pipe, holding the ends back to allow jointing. As each length of the pipe is placed in the trench, the joint shall be assembled, and the pipe brought to correct line and grade. Polyethylene encasement shall be rolled out and secured, and the pipe shall be maintained in place with approved bedding material to the limits shown on plan details, and the trench backfilled with approved granular fill, as shown on plan details.

At times when pipe laying is not in progress, the open ends of pipe shall be closed by a water-tight plug or other means approved by the Engineer. The plug shall be fitted with a means for venting. When practical, the plug shall remain in place until the trench is pumped completely dry. Care must be taken to prevent pipe flotation should the trench fill with water. Prior to removal of the plug from extending the line or any other reason, air and/or water pressure in the line shall be released.

Water Main Joint Assembly:

Mechanical Joints (Restrained):

The Contractor shall wipe clean the socket and the plain end. The plain end, socket and gasket shall be washed with a soap solution to improve gasket seating. Place the restraint gland on the plain end with the lip extension toward the plain end, followed by the gasket with the narrow edge of the gasket toward the plain end. Use approved mechanical joint restraint system at all joints made up under this item. Insert the pipe into the socket and press the gasket firmly and evenly into the gasket recess. Keep the joint straight during assembly. Make deflection after joint assembly but before tightening bolts. Push the restraint gland toward the socket and center it around the pipe with the gland lip against the gasket. Insert bolts and hand-tighten nuts.

Mechanical joint bolts (3/4-inch) for pipe sizes ranging from 4” to 24” diameter shall be tightened to the normal sequence and range of bolt torque recommended by the manufacturer, while at all times maintaining approximately the same distance between the restraint gland and the face of the flange at all points around the socket. This can be accomplished by partially tightening the bottom bolt first, then the top bolt, next the bolts at either side, finally the remaining bolts, or follow the manufacturer’s recommended alternation sequence. Repeat the process until all bolts are within the appropriate range of torque. The final torque application shall wring off the retainer bolt heads.

Water Main Joint Deflection:

When it is necessary to deflect the pipe from a straight line in either the horizontal or vertical plane, the amount of joint deflection shall not exceed 75% of that shown in Table 2. The following maximum deflections listed are manufacturer's recommended maximum deflections. These specifications allow the Contractor to install piping joints up to 75% of maximum joint deflection shown below, and this "75% of joint deflection limit" shall not be exceeded.

TABLE 2 – Maximum Joint Deflection Full-Length Pipe-Mechanical Joint Pipe

		Maximum offset (in.)		Approx. Radius of Curve Produced by Succession of Joints (ft.)	
Nominal Pipe Size (in.)	Deflection Angle (degrees)	18 ft. length	20 ft. length	18 ft. length	20 ft. length
3	8-18	31	35	125	140
4	8-18	31	35	125	140
6	7-07	27	30	145	160
8	5-21	20	22	195	220
10	5-21	20	22	195	220
12	5-21	20	22	195	220
14	3-35	13-1/2	15	285	320
16	3-35	13-1/2	15	285	320

Water Main Pipe Cutting:
Cutting pipe for insertion of valves, fittings or closure pieces shall be done in conformance with all safety recommendations of the manufacturer of the cutting equipment. Field cutting of ductile iron pipe shall only be done on "gauged" pipe, that is, pipe so marked at the factory as to be within proper O.D. diameter and out of round tolerance for proper jointing at any position along the length. Cutting shall be done in a safe, workmanlike manner without creating damage to the pipe or cement-mortar lining. Ductile-iron pipe may be cut using an abrasive pipe saw, rotary wheel cutter, guillotine pipe saw, or milling wheel saw. Oxyacetylene or plasma torch or any flame cutting method shall not be used. Cut ends and rough edges shall be ground smooth, and sufficiently beveled for gasket makeup.

Water Main Insulation:
Insulation with jacket shall be applied to underground water main for a length of 5 feet behind both bridge end walls, in conjunction with excavation for retrofit of restraints on existing pipe joints. Insulation shall be applied as per manufacturer's instructions. Use pre-formed pipe insulation, coping for angle of bridge end wall and butting joints tightly. Secure with stainless steel wire or other recommended means until jacket is installed. Jacket shall be secured with screws, stainless steel bands, or other approved methods. Jacket seams shall be caulked, and both ends also caulked to prevent ground water from flowing between insulation and pipe or insulation and jacket, to leak through end wall penetration.

Trench Excavation
The excavation defined herein shall be deemed earth excavation, which shall include the removal of all material other than rock. The extent of trenching and excavation, including rock, shall be in accordance with the Typical Trench Detail and shall be 6 inches below the bottom of the pipe in earth and 12 inches below the bottom of the pipe in rock. The depth of trench may be increased or decreased at the discretion of KFD as required to avoid obstructions.

Hand excavation shall be employed to excavate around and/or expose existing utilities whenever necessary.

Excavated material that is deemed unsuitable for use as bedding material or backfill above 12 inches above the top of the pipe, shall be removed from the site and properly disposed of.

Special care shall be taken to excavate accurately to grade. If the trench is over-excavated, it shall be brought to grade, at the Contractor's expense, by refilling with approved material in compacted layers, each layer not to exceed 6 inches in thickness if the depth is less than 12 inches or 12 inches in thickness if the depth is greater than 12 inches.

Where the bottom of the trench, below the limit of excavation for placement of bedding material, is found to be unstable or to contain material which should be removed, the Contractor shall excavate and remove such material to the width and depth as shown on the Typical Trench Detail, as directed by KFD. Before the pipe is installed, the subgrade shall be prepared by refilling with bedding material, in compacted layers, each layer not to exceed 6 inches in thickness if the depth is less than 12 inches or 12 inches in thickness if the depth is greater than 12 inches. The layers shall be thoroughly compacted to provide uniform and continuous bedding for the pipe.

Rock Excavation

Rock excavation and replacement with backfill material, including bedding material, is specified under the backfilling section.

Unauthorized Excavation

All unauthorized excavations outside the lines and grades shown and specified shall be at the expense of the Contractor and the Contractor shall refill them with approved material, in a manner as specified at their expense. All backfill for unauthorized excavations shall be compacted in 12” lifts.

Storage and Disposal of Excavated Materials

Materials removed from the trenches shall be stored in such a manner that they will not interfere unduly with pedestrian or vehicular traffic. Sufficient material suitable for backfill shall be stored and hauled as necessary to replace excavated material that is unsuitable for backfill. Excess excavated material shall be removed and legally disposed of away from the site by the Contractor on the same day as the backfill has been placed.

Alignment and Grade:

The water mains shall be laid and maintained to the lines and grades established by the plans and specifications with fittings, valves, tapped or bossed outlets and hydrants at the required locations unless otherwise in a manner to allow proper operation.

Coverage requirement on all water lines is minimally 4 feet, unless shown otherwise on the plans.

Pipe Bedding Material

Water main, branch and hydrant branch piping shall be bedded in select fine gravel material obtained from approved natural deposits and unprocessed except for the removal of unacceptable material and stones larger than the maximum size permitted. It shall not contain vegetation. It shall be free from loam and other organic matter, clay, and other fine or harmful substances, and have a gradation within the following limits:

Sieve Size	Percentage by Weight Passing
3 in.	100
½ in.	80-100
No. 4	60-80
No. 40	10-30
No. 200	0-10

Backfilling

Unless otherwise specified or directed, all trenches and excavations shall be backfilled immediately after installation and inspection of the pipe.

The Contractor shall use suitable material from excess excavation from other portions of the work or from approved gravel pits. It shall be carefully deposited in uniform layers not exceeding twelve inches (12") in depth, and unless otherwise permitted, each layer shall be carefully and solidly tamped and compacted with appropriate tools in 12” lifts in such a manner as to avoid disturbing the completed work.

No stones larger than 12 inches shall be used in the trench as backfill from 12 inches above the top of the pipe to the surface. In depositing stones up to 12 inches, care must be taken not to damage the pipe or any structure. Stones which are used in backfilling shall be so distributed through the mass that all interstices are filled with fine material. Backfill shall be deposited in layers not exceeding 12 inches in depth and compacted.

Rock and other excavated materials from trenches and excavations may be used as backfill, provided individual pieces of rock are not larger than 12 inches and that they are placed so that voids are filled with the backfill material. No rock or other excavated materials from trenches and excavations shall be placed within 12 inches from the top of the pipe.

Backfilling within 2 feet of structures shall be uniformly deposited on all sides and, unless otherwise permitted, solidly compacted in such manner as to avoid damaging the structure or producing unequal pressures thereon. When sheeting is drawn, all cavities remaining in or adjoining the trench shall be solidly backfilled and compacted. When sheeting is permitted to be left in place, all cavities behind such sheeting shall be solidly backfilled and compacted.

Trench Bracing, Sheeting and Trench Boxes

Where trench conditions are found to consist of material which is unstable to such a degree that it cannot be removed and replaced with an approved material without creating an occupational hazard, the Contractor shall utilize trench bracing, sheeting, or trench boxes to support the trench.

The Contractor must conform to all applicable State and OSHA standards for trench conditions.

The sides of the trenches and excavations shall be supported by adequate trench bracing, sheeting, or trench boxes.

The Contractor shall be held accountable and responsible for the amount of all trench bracing, sheeting, and trench boxes used and for all damages to persons or property resulting from the improper quality, strength, placing, maintaining, or removing of the trench bracing, sheeting, or trench boxes. When trench bracing, sheeting, or trench boxes are removed, care shall be taken not to disturb the newly installed pipe, appurtenances, or existing utilities and structures.

Trench bracing is defined as planks placed against opposite sides of the excavation and is held in place by timber struts or some extendable brace. Sheeting is defined as continuous sheet piling of either steel or wood with whalers or shoring. No sheeting is to be left in place unless expressly permitted by KFD. All materials necessary for trench bracing, sheeting, or trench boxes shall be provided by the Contractor and included in this section. All construction methods necessary to install and maintain trench bracing, sheeting, or trench boxes shall conform to OSHA Standards.

Dewatering:
The Contractor shall provide all necessary pumps, drains, well point systems, and other means for removing water from the trenches and from other parts of the work. Before pipes are laid or structures built, the trenches and excavations shall be free from water and, if necessary, suitable drainage facilities shall be provided and maintained. Any drainage system used by the Contractor shall be subject to the approval of KFD. Subgrade damaged by failure to properly dewater will be repaired and replaced at the Contractor's expense.

Water from the trenches and excavations shall be disposed of in such a manner as will neither cause injury to public health nor to public or private property, nor to the work completed or in progress.

Valve and Fitting Installation:
Prior to installation, valves shall be inspected for direction of opening, number of turns to open, freedom of operation, tightness of pressure-containing bolting and test plugs, cleanliness of valve ports and especially seating surfaces, handling damage, and cracks. Defective valves shall be corrected and replaced. Valves shall be closed before being installed.

Valves, fittings, plugs and caps shall be set and joined to the pipe in the manner specified in the specifications for cleaning, laying, and joining pipe, except that 12-inch and larger valves shall be provided with special support, such as treated timbers, crushed stone, concrete pads or a sufficiently tamped trench bottom so that the pipe will not be required to support the weight of the valve. Valves shall be installed in the closed position.

A valve box shall be installed for every valve, blowoff valve and blowoff plug. The valve box shall not transmit shock or stress to the valve and shall be centered over the operating nut of the valve

with the box cover flush with the surface of the finished ground surface. Extension risers shall be installed on every valve and set with the operating nut within six inches of finished grade.

In no case shall valves be used to bring misaligned pipe into alignment during installation. Pipe shall be supported in such a manner as to prevent stress on the valve. All dead ends on new mains shall be closed with plugs or caps that are suitably restrained to prevent blowing off under test pressure.

Thrust Restraint:
All pipe joints, fittings, valves, main, branch and hydrant valves shall be installed with thrust restraining glands or retainers, as described above.

All plugs, caps, valves, tees and bends 45 degrees and greater, unless otherwise specified, shall be installed with a concrete thrust block as specified in the plan details.

The top bend of vertical offsets shall be installed with a thrust block as shown on the plans or in in the plan details.

Provide reinforcing bars with end hooks, sized and detailed where indicated on the plans or in the plan details.

Concrete for thrust blocks shall be PCC03360 Concrete. Thrust blocks shall be in accordance with these specifications and the Standard Details.

Polyethylene Encasement
Polyethylene encasement shall be installed around new water main pipe installations and exposed portions of existing underground DIP where practicable, in sequence with the work and prior to bedding and backfill.

Pressure Testing, Leak Testing, Disinfection and Flushing
Pressure testing, leak testing, disinfection and flushing of piping systems installed under this item, shall be performed together with those same activities for the branch line for temporary relocation of the water main off the valved 12”x12”x12” tee installed by KFD, and for the main line over the bridge in the run of the tee installed by KFD, under their respective item numbers. Acceptance of the piping system is determined in part, on the basis of leakage. Note that leak testing will require visual examination of the joints.

Method of Measurement:

Work under this section will be measured for payment per lineal foot of “8” Ductile Iron Pipe (Water Main)” and “Insulated 8” Ductile Iron Water Main” installed, complete in place, backfilled, tested and accepted.

The following will not be measured separately for payment, but shall be included in the lineal foot cost of the pipe installation:

- saw-cutting of existing pavement
- removal of asphalt and concrete pavement up to and including 6 inches in depth
- excavating to the depth necessary to install the pipe and bedding material
- stockpiling and storing of the excavated material if suitable for backfill
- removal and disposal of the excavated material if deemed unsuitable for backfill
- furnishing and installing bedding material up to 12 inches above the top of the pipe
- backfilling with native material if suitable for backfill
- compacting in 12" lifts
- bends, valves, reducers, sleeves, couplings, and tees
- pipe insulation and polyethylene encasement
- mechanical joint restraints, hardware, bolts, nuts, glands, and gaskets
- thrust block installation
- warning tape
- trench bracing, sheeting, and trench boxes
- dewatering

Installation of bends, valves, reducers, sleeves, couplings, caps, plugs, mechanical joint restraints, and hardware will not be measured separately for payment but shall be included in the linear foot cost of the pipe installation.

Bedding material furnished, installed, and compacted, to the bedding material limits shown on the Typical Trench Detail, will not be measured separately for payment, but shall be included in the linear foot cost of the pipe installation.

Basis of Payment:

Work under this section will be paid for at the contract unit price bid per lineal foot of "8" Ductile Iron Pipe (Water Main)" and "Insulated 8" Ductile Iron Water Main" installed complete in place, backfilled with suitable material, tested, and accepted.

No separate payment will be made for installing thrust blocks, bends, valves, reducers, sleeves, couplings, tees, mechanical joint restraints, and hardware, but the furnishing and installation of these items will be included in the lineal foot cost of the pipe installation.

No separate payment will be made for bedding material furnished, installed, and compacted, to the bedding material limits shown on the Typical Trench Detail but will be included in the linear foot cost of the pipe installation.

Pay Item	Pay Unit
Insulated 8" Ductile Iron Water Main	l.f.
8" Ductile Iron Pipe (Water Main)	l.f.

ITEM #1304066A – REMOVE WATER MAIN

Description:
There is a single 8" steel water main running beneath the southbound lane of Glen Street operated by the Kensington Fire District (KFD). Work performed under this item shall consist of removal of the water main to permit removal and reconstruction of the bridge. In advance of the work of this item, the contractor shall install 8"x 8" stainless steel tapping sleeved with valves, and 2 insertion valves at the outboard ends of the bridge as shown on the plans, to permit temporary relocation of the water main from the branch valves of these tees, around the bridge. Once the temporary water main is accepted and in service, the work of this item may proceed as authorized by KFD.

Work includes lockout/tagout (LOTO) of the 8"x 8" valved tee main valves that if open, would permit flow through this portion of water main. The work includes coordination with KFD for each phase of the work. The contractor shall submit a plan for approval by the Engineer and KFD, outlining steps for the safe draining of the water main, preventing damage to the portions of the water main that will remain projecting through the bridge end walls, initial breach of the water main, joint disassembly, removal of water main pipe sections and support elements, stripping of insulation and disposal of metals and non-metal components of the former water main. The plan shall include provisions for neutralization of chlorine if water drained from the water main is released into the environment.

Included in this work shall be all labor, tools, materials, accessories, appurtenances, equipment, lifting and hoisting apparatus, hauling, transport, disposal, incidentals, coordination, shop drawing submissions, documentation, temporary supports, venting and draining provisions, and any incidental work not specifically mentioned but necessary to result in a complete and acceptable, demolition and disposal, all included in the lump sum cost.

Materials:

Provide tools, equipment, temporary supports, debris shields, working platforms, falsework, incidentals, consumables, containers, covers, wraps and all such items to support the safe draining, disassembly, demolition, temporary storage as approved, and disposal of the water main and related support elements.

Construction Methods:

The contractor shall prepare and submit written procedures and working drawings and receive approval from the engineer prior to starting the work.

Proposed equipment and removal method.

- Operating and storage locations(s) of equipment and materials
- Containment and disposal of debris, including insulation and outer jacket, and lead paint where required.

- Installation and removal of any required debris shields, working platforms, and falsework.

Pressure release and draining of the water main shall be done in a manner acceptable to the Engineer and KFD, and that prevents release of high pressure and/or high volumes of water that would otherwise endanger personnel or property, or cause erosion and sedimentation. Means and methods shall be taken for neutralization of chlorine from water released into the environment, approved by KFD.

Flame cutting of pipe or pipe support elements shall not be done without Engineer and KFD approval. Abrasive saw cutting, grinding, and any other methods for severing pipe support elements form bridge connection plates, shall be approved by the Engineer.

The contractor shall employ a temporary staged or cabling and support system to prevent water main sections from falling during disassembly to the failure of lifting or hoisting equipment or jointing or support materials that can become overloaded by cantilevered weight from partially disassembled sections. Measures shall be taken for the temporary safe support of remaining lengths of pipe. The contractor is cautioned that the existing bridge deflection may decrease, and the bridge move up as the weight of lengths of water main is removed, increasing load on remaining pipe supports that may pull up on restrained pipe joints, requiring temporary adjustment and/or supplemental supports to safely mitigate sudden or unintended failure.

Demolition of water main shall not proceed when personnel, equipment, or traffic is passing beneath or within a safe length beyond the closest remaining pipe support to the work area, as submitted and approved by the Engineer.

Insulation, jacket, and non-metallic components shall be stripped off the pipe and segregated for disposal. Once water main piping sections have been stripped of insulation and jacket and cleaned as necessary for the receiving location, they shall be loaded and removed from the site for disposal. If water main piping sections are temporarily stockpiled prior to stripping of insulation, they shall be covered to prevent blowing off of loose insulation or jacket damaged in the removal. Insulation and jacket stripped from pipe sections shall be immediately placed in covered containers, to prevent wind from disbursing them. The work area shall be maintained free of demolition debris.

Pipe, aluminum insulation jacket, steel support elements and any other metals shall be recycled to the maximum extent possible.

Any damage to remaining elements of the bridge, or to public or private property resulting from the contractor’s work in removal and disposal of the water main, shall be repaired by the contractor to the satisfaction of the owner at no additional cost.

The contractor shall remove and disconnect any heat tracing on the existing water main and coordinate with the utility company to permanently disconnect any current service utilized in the heat tracing.

Method of Measurement:

This work will be measured per lineal foot of removal of existing water main from existing bridge, and off-site legal disposal.

Basis of Payment:

This work will be paid for at the Contract Unit price per lineal foot of removal of water main and off-site legal disposal.

Pay Item	Pay Unit
Remove Water Main	l.f.

ITEM #1401246A – 16” DUCTILE IRON PIPE (SANITARY SEWER)

Description: The work included in this item shall consist of installing ductile iron pipe for sanitary sewers as shown on the plans or as directed by the Engineer in accordance with Metropolitan District standard specifications.

https://themdc.org/wp-content/uploads/2024/05/MDC-Horizontal-Project-Manual-SBE-February-2024.pdf

Materials: The materials for this work shall conform to the requirements of Section 02615, DUCTILE IRON PIPE FOR SANITARY AND STORM SEWER, of the Metropolitan District standard specifications.

Construction Methods: Construction Methods shall be those established in Section 02615, DUCTILE IRON PIPE FOR SANITARY AND STORM SEWER, of the Metropolitan District standard specifications.

Method of Measurement: This work will be measured for payment as specified in Section 01025 - MEASUREMENT AND PAYMENT, SECTION 2.02.C, of the Metropolitan District standard specifications.

Basis of Payment: This work will be paid for at the contract unit price per linear foot as stated in Section 01025 - MEASUREMENT AND PAYMENT, SECTION 2.02.C, of the Metropolitan District standard specifications.

Pay Item	Pay Unit
16” Ductile Iron Pipe (Sanitary Sewer)	S.Y.

ITEM #1401662A – SANITARY MANHOLE (4’ DIA.) 0’ TO 10’ DEEP

Description: The work included in this item shall consist of installing precast concrete manholes as shown on the plans or as directed by the engineer in accordance with Metropolitan District standard specifications.

https://themdc.org/wp-content/uploads/2024/05/MDC-Horizontal-Project-Manual-SBE-February-2024.pdf

Materials: The materials for this work shall conform to the requirements of Section 02605, MANHOLES, of the Metropolitan District standard specifications.

Construction Methods: Construction Methods shall be those established in Section 02605, MANHOLES, of the Metropolitan District standard specifications.

Method of Measurement: This work will be measured for payment as specified in Section 01025 - MEASUREMENT AND PAYMENT, SECTION 2.02.A, of the Metropolitan District standard specifications.

Basis of Payment: This work will be paid for at the contract unit price per each as stated in Section 01025 - MEASUREMENT AND PAYMENT, SECTION 2.02.A, of the Metropolitan District standard specifications.

Pay Item	Pay Unit
Sanitary Manhole (4’ dia.) 0’ TO 10’ Deep	Ea.

ITEM #1507000.01A - PROTECTION AND SUPPORT OF EXISTING UTILITIES (SITE NO. 1)

Description: Work under this item shall consist of the design, construction, maintenance and removal of temporary protection and temporary support for existing utilities.

The protection and support of the existing facilities adjacent to the east side of Glen Street at Bridge Nos. 06955 which will be necessary during the bridge reconstruction work as shown on the plans, as directed by the Engineer and in accordance with these specifications.

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

Materials:

The materials for this work shall be of satisfactory quality for the purpose intended and shall be approved by the Engineer. The material shall be intended for use in structures, trench or excavations and shall be sound and capable of safely carrying the specified loads.

Construction Methods:

The Contractor is herein made aware that construction will require the installation of shoring or other lateral support work and will require construction beneath or adjacent to active sewer and water lines.

The Contractor is advised that no service interruption resulting from his operations will be allowed, except as otherwise provided for in Section 1.05 – Control of the Work or Section 1.08 - Prosecution and Progress. A KFD representative shall be present at the installation of the temporary supports. Further attention shall be paid to “Section 1.07 – Legal Relations and Responsibilities,”.

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

The Contractor shall prepare working drawings and computations showing his proposed method of support and protection for the utility to be supported and protected. Preparation of working drawings and computations shall conform to the requirements of Subarticle 1.05.02. The support shall safely carry all utility dead loads and any imposed loadings under all possible construction conditions. Said supports and protections shall be constructed in a manner that will not interfere with the partial existing structure or its reconstruction.

When the temporary supports are no longer required, they shall be removed from the site by the Contractor.

Method of Measurement: This work shall be paid on lump sum basis and will not be measured for payment.

Basis of Payment: The work will be paid for at the contract lump sum price for "Protection and Support of Existing Utilities (Site No. 1)," which price shall include designing and detailing the temporary supports and furnishing and installing temporary supports, periodic inspection and removing temporary supports, and all materials, equipment, tools and labor incidental thereto.

Pay Item	Pay Unit
Protection and Support of Existing Utilities (Site No. 1)	l.s.

SUPPLEMENTAL SPECIFICATIONS TO STANDARD SPECIFICATIONS FORM 819

The following Permits and Required Provisions follow this page and are hereby made part of this Contract.

PERMITS AND/OR PERMIT APPLICATIONS

Permit	Permit No.	Approval Date
Town of Wilton Inland Wetlands and Watercourse Commission Permit	1	July 10, 2025
Flood Management Certification – Municipal	2	Pending Approval
US Army Corps of Engineers Self Verification	3	Pending Approval

TOWN OF BERLIN
Inland Wetlands
and
Water Courses Commission
240 Kensington Road • Berlin, CT 06037
Office (860) 828-7022 • **Fax** (860) 828-7180

July 10, 2025

Mr. Ryan Curley, Town Manager
Town of Berlin
240 Kensington Road
Berlin, CT 06037

Re: Application 25-05WF

Dear Mr. Curley;

Please be advised that during its meeting of July 8, 2025, the Town of Berlin Inland Wetland and Water Courses Commission voted unanimously to approve the above referenced application. This approval was granted contingent upon the following;

1. That all erosion and sedimentation control devices (as designated on plans) be installed to the satisfaction of the Wetlands Agent prior to the commencement of construction.

2. That all other construction related activities be installed in accordance with the submitted plans entitled: "Replacement of Bridge No. 06955; Glen Street over Mattabesset River, Environmental Permit Plans, State Project No. 0007-0266 Town of Berlin, Designed by: Jacobs, Inc., Wethersfield, CT, Timothy P. Ryan, P.E., State of CT DOT, Drawings PMT-01-08, Sheets 1-8, Dated April 25, 2025."

Please be advised that this permit will become effective on July 28, 2025 following a successful completion of the Fifteen (15) day appeal period commencing on July 14, 2025.

Attached is a copy of the legal notice, which appeared in The Herald, classified section, on July 14, 2025. If you should have any further questions regarding this matter, please do not hesitate to call me at (860) 828-7069.

Sincerely,

James P. Horbal
Agent for the Inland Wetlands Commissions

Attachment

cc: Peter Nieman, IWWC Chairman
Maureen Giusti, AICP - Town Planner

TOWN OF BERLIN
Inland Wetlands
and
Watercourses Commission
240 Kensington Road • Berlin, CT 06037
Office (860) 828-7069 • Fax (860) 828-7180

LEGAL NOTICE

NOTICE OF ACTION

During its meeting of July 8, 2025, the Town of Berlin Inland Wetland and Water Courses Commission took the following actions:

Application 25-05WF - Proposal by the Town of Berlin to replace the Glen Street Bridge over Mattabesset River which is located within both a Regulated Flood Zone and Wetland area. Approved with Standard Conditions.

Effective date will be July 28, 2025

Peter Nieman, Chairman
Inland Wetlands and Watercourses Commission

APPLICATION FOR PERMISSION TO CONDUCT A REGULATED ACTIVITY WITHIN AN INLAND WETLAND OR WATER COURSE AREA IN THE TOWN OF BERLIN, CONNECTICUT

(In accordance with Sections 22a-36 to 45, inclusive of the General Statutes, as amended, and the regulations of the Inland Wetland and Water Course Commission of the Town of Berlin, Connecticut.)

INSTRUCTIONS:

All applicants must complete Section I of this application form for preliminary review. The Commission will then notify the applicant of any additional information that may be required and will schedule a public hearing if necessary. In addition to the information supplied in Section I, the applicant may submit other supporting facts or documents which may assist the Commission in its evaluation of this proposal.

SECTION I

1. Name of Applicant Town of Berlin - Project Contact: Ryan Curley
   Home Address N/A
   Business Address 240 Kensington Road, Berlin, CT 06037
   Telephone 860-828-7002
   Fax _____ E-Mail rcurley@berlinct.gov

2. Applicant's Interest in the property: (Owner*) Lessee Lessor
   Other Subject bridge 06955 is located on a Town owned and maintained road.
   *Conveyed to owner by deed recorded in the office of the Berlin Town Clerk in Volume _____ page _____ and dated ____/____/____.

3. Name of Property Owner (if not applicant) Same as Applicant
   Home Address _____
   Business Address _____
   Telephone _____
   Fax _____ E-Mail _____

Name of Applicant Town of Berlin
Date Filed 05/20/2025
Application No. _____ (to be filled in by the Department)

4. Attach a written, witnessed consent to the proposed activity by the owner, if applicant is not the property owner.

5. Geographical Location of the Property.

   a. This property may be reached from Glen Street by proceeding (north) (south) (east) (west) on Rte. No. 71 or _____ and following specific directions
   Bridge 06955 is located 0.2 miles north from the Route 71/Glen Street intersection or approximately 165 feet south from the Robindale Drive/Glen Street intersection.

   b. Lot number (or other designations) as shown on the Tax Assessor's Map (Zoning Map, Subdivision Map, etc.)
   Bridge is located near MBL : 14-1-52-3, MBL : 14-1-52-2&2A, and MBL : 8-4-53-55.
   Specify map source Google Map and Town of Berlin GIS Mapping Viewer

6. Purpose and Description of Activity for which authorization is requested.

   a. Proposed activity will involve the following with Inland Wetlands or Water Course area (check appropriate box or boxes)

   ☑ alteration ☑ construction ☑ deposition of material
   ☐ pollution ☑ removal of material ☑ Removal of existing and replacement of Bridge No. 06955

   b. Attach a detailed written description of the proposal and identification of each regulated activity for which a permit is sought. Include nature and volume of material to be placed, removed and transferred.
   See attached project description

   c. Please submit a detailed narrative of the proposal.
   See attached project description

   d. Purpose of proposed activity (i.e., addition to existing dwelling, new business, industrial park, etc.)
   See attached project description

Name of Applicant Town of Berlin

Date Filed 5/20/2025

Application No. _____ (to be filled in by Department)

7. Type of Ruling Requested:
   a. Summary & Declaratory Ruling $210.00
   b. Summary Ruling with Public Hearing $310.00
   c. Change in Wetlands Boundary $310.00 plus $10.00 per acre
   *Fees include a State Land Use Fee of $60.00
   (effective 10/01/2009)
8. Names and Addresses of Adjacent Property Owners
   (to be submitted on separate sheet)

9. The property to be effected by the proposed activity contains a

   ☐ swamp ☐ marsh ☐ bog

   ☐ lake or pond ☑ stream or river ☑ flood plain

   ☑ other regulated area, describe Project work will be located within the Mattabesset River and Upland Review Area

The undersigned applicant hereby consents to necessary and proper inspections of the above mentioned property by the Inland Wetland and Water Course Commission or its agent, at reasonable times, both before and after the permit in question has been granted by the Commission.

The undersigned swears that the information supplied in the completed application is accurate, to the best of his/her knowledge and belief.

Signature of Applicant

Ryan Curley- Town Manager
Printed Name

05/20/2025
Date Application Filed

State Reporting Form

Connecticut Department of
ENERGY &
ENVIRONMENTAL
PROTECTION

79 Elm Street • Hartford, CT 06106-5127 www.ct.gov/deep Affirmative Action/Equal Opportunity Employer

STATEWIDE INLAND WETLANDS & WATERCOURSES ACTIVITY REPORTING FORM

Pursuant to section 22a-39(m) of the General Statutes of Connecticut and section 22a-39-14 of the Regulations of Connecticut State Agencies, inland wetlands agencies must complete the Statewide Inland Wetlands & Watercourses Activity Reporting Form for **each** action taken by such agency.

This form may be made part of a municipality's inland wetlands application package. If the municipality chooses to do this, it is recommended that a copy of the Town and Quadrangle Index of Connecticut and a copy of the municipality's subregional drainage basin map be included in the package.

Please remember, the inland wetlands agency is responsible for ensuring that the information provided is **accurate** and that it reflects the **final** action of the agency. Incomplete or incomprehensible forms will be mailed back to the agency. Instructions for completing the form are located on the following pages.

The inland wetlands agency shall mail completed forms for actions taken during a calendar month no later than the 15th day of the following month to the Department of Energy and Environmental Protection (DEEP). Do **not** mail this cover page or the instruction pages. Please mail **only** the **completed** reporting form to:

DEEP Land & Water Resources Division
Inland Wetlands Management Program
79 Elm Street, 3rd Floor
Hartford, CT 06106

Questions may be directed to the DEEP's Inland Wetlands Management Program at (860) 424-3019.

Connecticut Department of
ENERGY & ENVIRONMENTAL PROTECTION

79 Elm Street • Hartford, CT 06106-5127 www.ct.gov/deep Affirmative Action/Equal Opportunity Employer

GIS CODE #: ___ ___ ___ ___ ___ ___ ___ ___ ___
For DEEP Use Only

Statewide Inland Wetlands & Watercourses Activity Reporting Form

Please complete this form in accordance with the instructions on pages 2 and 3 and mail to:
DEEP Land & Water Resources Division, Inland Wetlands Management Program, 79 Elm Street, 3rd Floor, Hartford, CT 06106
Incomplete or incomprehensible forms will be mailed back to the inland wetlands agency.

PART I: Must Be Completed By The Inland Wetlands Agency

1. DATE ACTION WAS TAKEN: year: _____ month: _____
2. ACTION TAKEN (see instructions - one code only): _____
3. WAS A PUBLIC HEARING HELD (check one)? yes ☐ no ☐
4. NAME OF AGENCY OFFICIAL VERIFYING AND COMPLETING THIS FORM:
   (print name) _____ (signature) _____

PART II: To Be Completed By The Inland Wetlands Agency Or The Applicant

5. TOWN IN WHICH THE ACTIVITY IS OCCURRING (print name): Town of Berlin
   does this project cross municipal boundaries (check one)? yes ☐ no ☑
   if yes, list the other town(s) in which the activity is occurring (print name(s)): _____, _____
6. LOCATION (see instructions for information): USGS quad name: Meriden, CT or number: 66
   subregional drainage basin number: 4600
7. NAME OF APPLICANT, VIOLATOR OR PETITIONER (print name): Town of Berlin
8. NAME & ADDRESS OF ACTIVITY / PROJECT SITE (print information): Bridge No. 06955; Glen Street, Berlin
   briefly describe the action/project/activity (check and print information): temporary ☑ permanent ☑ description: _____
   Replacement of Bridge (2 span culvert) with a new Bridge (2 span culvert that will improve hydraulics and load rating capacity).
9. ACTIVITY *PURPOSE* CODE (see instructions - one code only): N
10. ACTIVITY *TYPE* CODE(S) (see instructions for codes): 12, 9, 10, 2
11. WETLAND / WATERCOURSE AREA ALTERED (see instructions for explanation, must provide acres or linear feet):
    wetlands: 0.026 acres open water body: 0.056 acres stream: 90 linear feet
12. UPLAND AREA ALTERED (must provide acres): 0.318 acres
13. AREA OF WETLANDS / WATERCOURSES RESTORED, ENHANCED OR CREATED (must provide acres): 0.015 acres

PART III: To Be Completed By The DEEP

DATE RECEIVED: DATE RETURNED TO DEEP:

FORM COMPLETED: YES NO FORM CORRECTED / COMPLETED: YES NO

INSTRUCTIONS FOR COMPLETING

THE STATEWIDE INLAND WETLANDS & WATERCOURSES ACTIVITY REPORTING FORM

Use a separate form to report EACH action taken by the Agency. Complete the form as described below. Do NOT submit a reporting form for withdrawn actions.

PART I: Must Be Completed By The Inland Wetlands Agency

1. Choose the year and month the Inland Wetlands Agency took the action being reported. If multiple actions were taken regarding the same project or activity then multiple forms need to be completed.

2. Choose ONE code letter to describe the final action or decision taken by the Inland Wetlands Agency. Do NOT submit a reporting form for withdrawn actions. Do NOT enter multiple code letters (for example, if the same project or activity had both a permit issued and enforcement action, submit two forms for the two separate actions).

   A = A Permit Granted by the Inland Wetlands Agency (not including map amendments, see code D below)
   B = Any Permit Denied by the Inland Wetlands Agency
   C = A Permit Renewed or Amended by the Inland Wetlands Agency
   D = A Map Amendment to the Official Town Wetlands Map - or -
   An Approved/Permitted Wetland or Watercourse Boundary Amendment to a Project Site Map
   E = An Enforcement Action: Permit Revocation, Citation, Notice of Violation, Order, Court Injunction, or Court Fines
   F = A Jurisdictional Ruling by the Inland Wetlands Agency (activities "permitted as of right" or activities considered non-regulated)
   G = An Agent Approval pursuant to CGS 22a-42a(c)(2)
   H = An Appeal of Agent Approval Pursuant to 22a-42a(c)(2)

3. Check "yes" if a public hearing was held in regards to the action taken; otherwise check "no".

4. Enter the name of the Inland Wetlands Agency official verifying that the information provided on this form is accurate and that it reflects the FINAL action of the agency.

PART II: To Be Completed By The Inland Wetlands Agency Or The Applicant - If Part II is completed by the applicant, the applicant MUST return the form to the Inland Wetlands Agency. The Inland Wetlands Agency MUST ensure that the information provided is accurate and that it reflects the FINAL action of the Agency.

5. Enter the name of the municipality for which the Inland Wetlands Agency has jurisdiction and in which the action/project/activity is occurring.
   Check "yes" if the action/project/activity crosses municipal boundaries and enter the name(s) of the other municipality(ies) where indicated. Check "no" if it does not cross municipal boundaries.

6. Enter the USGS Quad Map name or number (1 through 115) as found on the Connecticut Town and Quadrangle Index Map (the directory to all USGS Quad Maps) that contains the location of the action/project/activity. USGS Quad Map information is available at: https://portal.ct.gov/-/media/deep/gis/resources/IndexNamedQuadTownpdf.pdf
   ALSO enter the four-digit identification number of the corresponding Subregional Drainage Basin in which the action/project/activity is located. If located in more than one subregional drainage basin, enter the number of the basin in which the majority of the action/project/activity is located. Town subregional drainage basin maps can be found at UConn CLEAR's website: https://media.clear.uconn.edu/data/watershed_maps/index.htm (no roads depicted) or at CTECO: http://www.cteco.uconn.edu/map_catalog.asp (depicts roads, choose town and a natural drainage basin map).

7. Enter the name of the individual applying for, petitioning, or receiving the action.

8. Enter the name and address or location of the action/project/activity. Check if the action/project/activity is TEMPORARY or PERMANENT in nature. Also provide a brief DESCRIPTION of the action/project/activity. It is always best to provide as much information as possible (for example, don't state "forestry," provide details such as "20 acre forest harvest, permit required for stream crossing.")

9. Carefully review the list below and enter ONLY ONE code letter which best characterizes the action/project/activity. All state agency projects must code "N".

A = Residential Improvement by Homeowner
B = New Residential Development for Single Family Units
C = New Residential Development for Multi-Family / Condos
D = Commercial / Industrial Uses
E = Municipal Project
F = Utility Company Project
G = Agriculture, Forestry or Conservation
H = Wetland Restoration, Enhancement, Creation
I = Storm Water / Flood Control
J = Erosion / Sedimentation Control
K = Recreation / Boating / Navigation
L = Routine Maintenance
M = Map Amendment
N = State Agency Project
P = Other (this code includes the approval of concept, subdivision or similar plans with no on-the-ground work)

10. Enter between one and four code numbers to best characterize the action/project/activity being reported. Enter "NA" if this form is being completed for the action of map amendment. You MUST provide code 12 if the activity is located in an established upland review area. You MUST provide code 14 if the activity is located beyond the established upland review area or no established upland review area exists.

1 = Filling
2 = Excavation
3 = Land Clearing / Grubbing (no other activity)
4 = Stream Channelization
5 = Stream Stabilization (includes lakeshore stabilization)
6 = Stream Clearance (removal of debris only)
7 = Culverting (not for roadways)
8 = Underground Utilities Only (no other activities)
9 = Roadway / Driveway Construction (including related culverts)
10 = Drainage Improvements
11 = Pond, Lake Dredging / Dam Construction
12 = Activity in an Established Upland Review Area
14 = Activity in Upland

Examples: Jurisdictional ruling allowing construction of a parking lot in an upland where the municipality does not have an established upland review area must use code 14, other possible codes are 2 and 10. Permitted construction of a free standing garage (residential improvement by homeowner) partially in an established upland review area with the remainder in the upland must use code 12 and 14, other possible codes are 1 and 2.

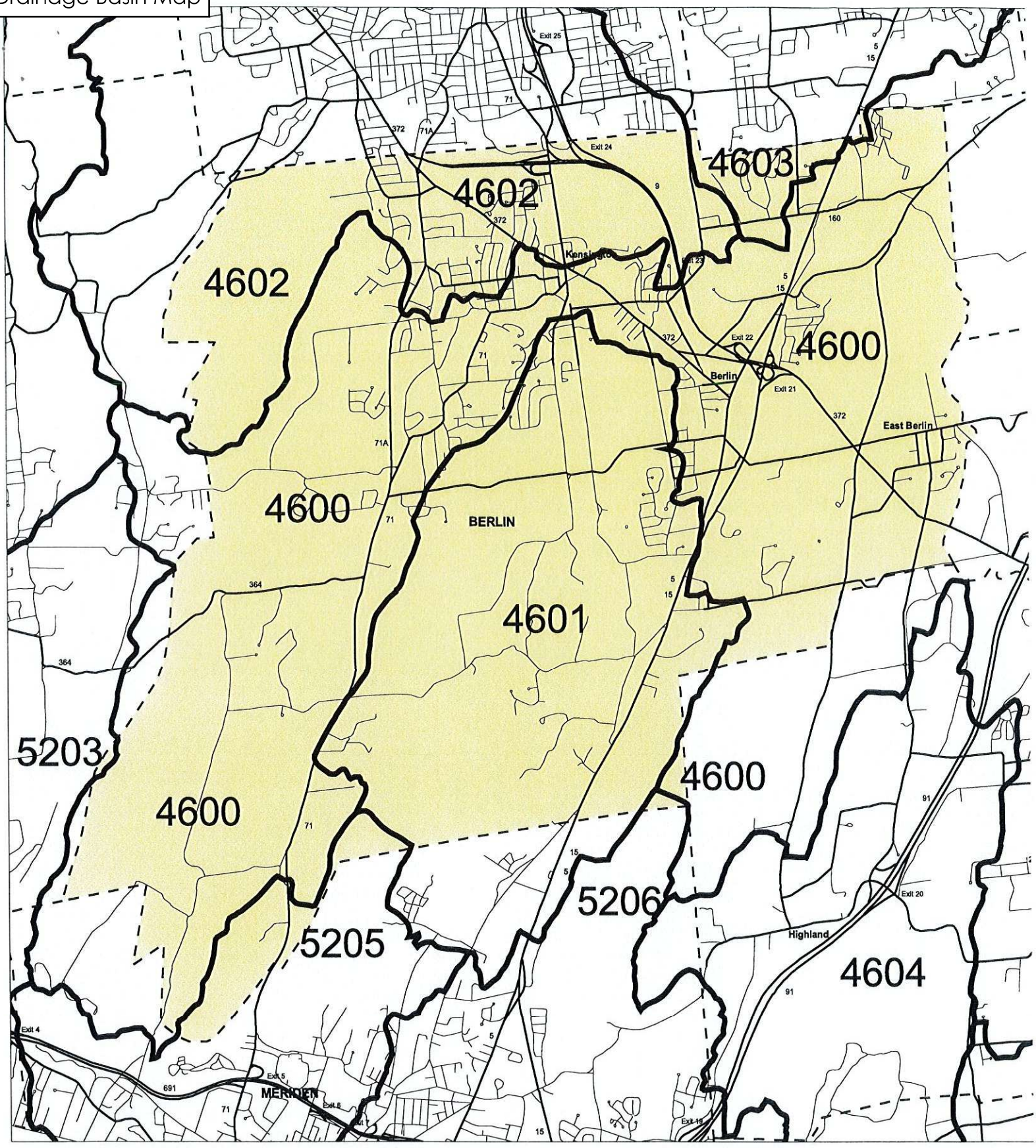
11. Leave blank for TEMPORARY alterations but please indicate action/project/activity is temporary under question #8 on the form. For PERMANENT alterations, enter in acres the area of wetland soils or watercourses altered. Include areas that are permanently altered, or are proposed to be, for all agency permits, denials, amendments, renewals, jurisdictional rulings, and enforcement actions. For those activities that involve filling or dredging of lakes, ponds or similar open water bodies enter the acres filled or dredged under "open water body." For those activities that involve directly altering a linear reach of a brook, river, lakeshore or similar linear watercourse, enter the total linear feet altered under "stream." Remember, these figures represent only the acreage altered, not the total acreage of wetlands or watercourses on the site. You MUST provide all information in ACRES (or linear feet as indicated) including those areas less than one acre. To convert from square feet to acres, divide square feet by the number 43,560. If this report is being completed for an agency jurisdictional ruling and detailed information is not available, provide an estimate. Enter zero if there is no alteration.

12. Enter in acres the area of upland altered as a result of an ACTIVITY REGULATED BY the inland wetlands agency, or as a result of an AGENT APPROVAL pursuant to CGS section 22a-42a(c)(2). Leave blank for TEMPORARY alterations but please indicate action/project/activity is temporary under question #8 on the form. Include areas that are permanently altered, or proposed to be permanently altered, for all agent approvals, agency permits, denials, amendments, renewals, jurisdictional rulings, and enforcement actions. You MUST provide all information in ACRES including those areas less than one acre. See directions above (#11) for conversion factor. If this report is being completed for an agent approval or an agency jurisdictional ruling and detailed information is not available, provide an estimate. Enter zero if there is no alteration.

13. Enter the acres that are, or are proposed to be, restored, enhanced or created for all agency permits, denials, amendments, renewals, jurisdictional rulings and enforcement actions. NOTE restored or enhanced applies to previously existing wetlands or watercourses. Created applies to a non-wetland or non-watercourse area which is converted into wetlands or watercourses. For created - question #10 must provide 12 and/or 14 as an answer, and question #12 must also be answered. You MUST provide all information in ACRES including those areas less than one acre. See directions above (#11) for conversion factor. Enter zero if there is no restoration, enhancement or creation.

PART III: To Be Completed By The DEEP - Please leave this area blank. Incomplete or incomprehensible forms will be mailed back to the inland wetlands agency.

Drainage Basin Map



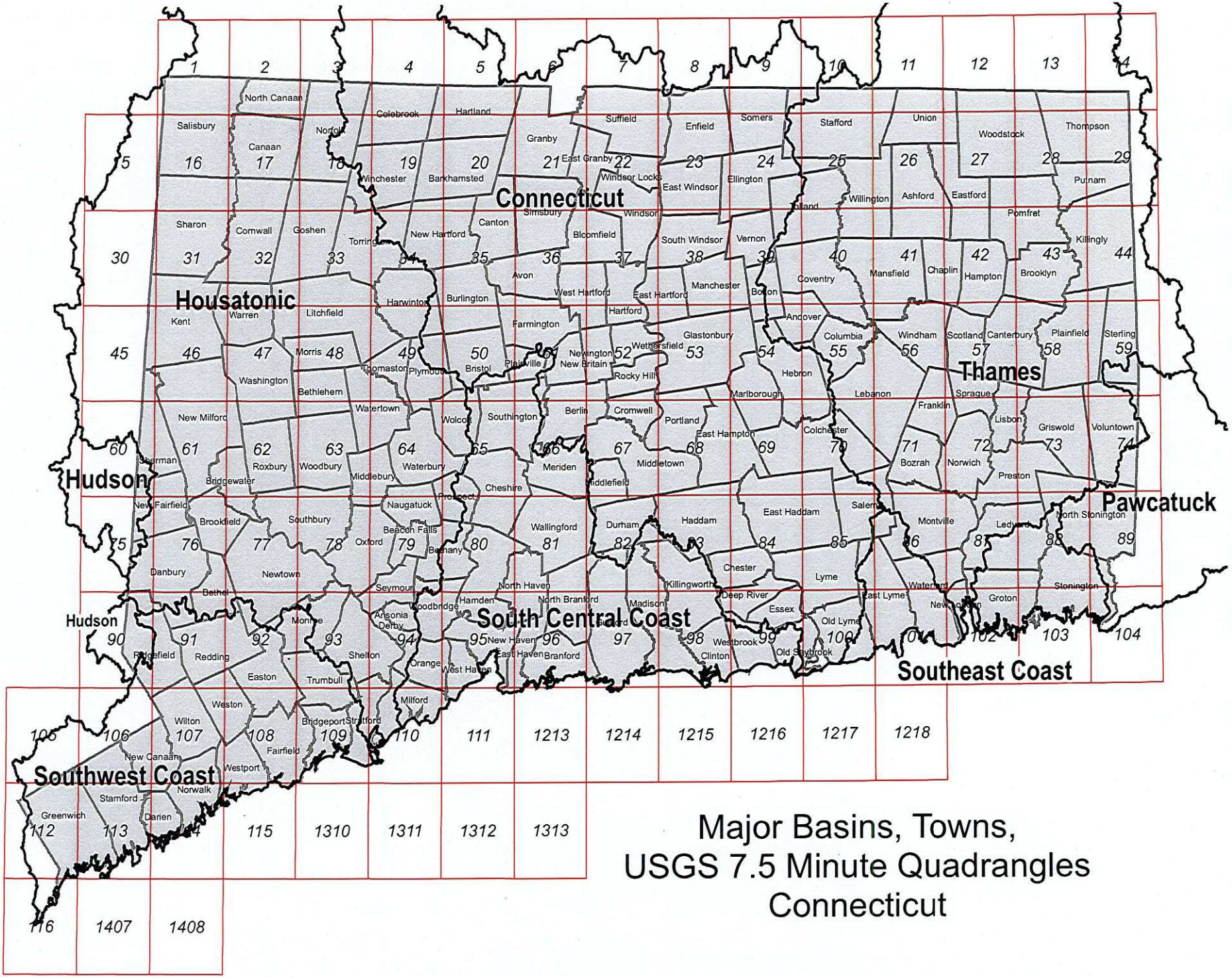
SUBREGIONAL DRAINAGE BASINS
Statewide Inland Wetlands & Watercourses Activity Reporting Program

Berlin, Connecticut

Subregional Basin
Main Road
Local Road
Town

0 0.5 1 Miles

July, 2000
DEP Inland Water Resources Division
Wetlands Management Section



Major Basins, Towns, USGS 7.5 Minute Quadrangles Connecticut

PROJECT DESCRIPTION
Project Number: 0007-0266
Town: Berlin, Connecticut
Bridge Number: 06955
Glen Street over Mattabesset River

Existing Conditions

The existing bridge was constructed in 1957 and consists of a southerly pre-cast concrete box culvert with a 12 foot span and a 5-foot rise and a northerly corrugated steel arch pipe culvert with a 11-foot 7-inch span and a 7-foot 5-inch rise. The structure length of the bridge is 29-feet while the length of the box culvert is approximately 46-feet and the length of the pipe culvert is approximately 52 feet. The bridge carries two travel lanes in a north-south direction over a roadway with a width of 24 feet while the Mattabesset River flows in an easterly direction under the bridge.

The concrete box culvert is currently rated to be in Good Condition with the roof and walls exhibiting transverse hairline cracks open up to 0.010 inches and roof joints exhibiting active leakage, light to heavy efflorescence, vertical misalignment up to 1 inch and joints open up to 1 ¼ inch. The culvert floor exhibits several random areas with light scale.

Based on recent emergency repairs completed in 2022 which included installation of concrete invert liner and steel sheet piling as cut-off walls at the inlet and outlet, the steel corrugated arch pipe is also rated to be in Good condition with bolted connections at the seams exhibiting light rust. Prior to the emergency repairs, the steel pipe arch culvert was rated to be in Critical Condition due to presence of extensive section loss and perforations in the invert and corner plates, infiltration of backfill material and distortion of the culvert shape. Based on comments from and a field meeting with DOT's Bridge Safety Inspectors in October 2021 (after Hurricane Ida), the Town completed emergency repairs in early 2022 to help stabilize the Arch Pipe invert until a full bridge replacement could be completed. However, the bridge continues to be posted for a 7-ton rating for all vehicles.

Purpose and Need Statement

The purpose of this project is to address the deficiencies in this bridge identified by recent inspections. Even though recent repairs have been performed to this bridge, the repairs are considered to be temporary in nature until a permanent replacement structure can be constructed.

The bridge is hydraulically inadequate with the roadway overtopped by the 50-year storm and the 25-year storm providing a marginal 0.1' of freeboard at the roadway low point. The difference in backwater elevation for the existing bridge culvert compared to natural condition is 4.7 feet which is greater than 1-foot standard and the 23'-7" hydraulic opening is less than 1.2 times BFW of channel of 27'-0".

Proposed Project

It is recommended that the existing bridge be removed and replaced with a twin pre-cast concrete box culvert comprising of a northerly 20' span x 8' rise culvert with 1.6 feet of stream bed material and a southerly 20' span x 5.5' rise culvert, intended as an overflow opening. Modifications and improvements

to the existing roadway drainage system are also proposed. The proposed replacement will eliminate roadway overtopping and provide 1.5’ of freeboard for the 100-year design storm and reduce backwater elevation compared from 4.5' to 1.2'. The new bridge will provide a 29’ minimum roadway width to include two 12’ travel lanes, a 5’ minimum shoulder, and the bridge rail system will comprise of an open metal bridge rail system meeting current standards. The bridge will be designed to carry all applicable design loads based on current codes.

The approach roadway will be reconstructed, and new approach guiderails meeting current safety standards will be provided. The roadway will be realigned 1’ to the west to maintain the existing sewer main during construction and the reconstruction will extend to the intersection with Robindale Drive to the North. A 16” diameter sewer line is present on the outlet side of the bridge and an 8” watermain and a 6” gas main are present below the roadway. The water main and sewer main will be temporarily supported and the gas main will be removed from service during construction. Additional utility modifications or relocations will be coordinated as necessary.

The presence of local detour routes and current traffic volumes do not require the existing bridge to remain open to traffic during construction. The new structure can be constructed in one season under a full detour, saving construction time and cost.

Site Information

The Mattabesset River flows below Bridge No. 06955 in a west to east direction. The project site is located within the Mattabesset River subregional drainage basin (#4600) of the Mattabesset regional drainage basin (#46). The bridge is located within Special Flood Hazard Zone AE according to FEMA Flood Insurance Rate Map #09003C0606F (effective date September 26, 2008). This bridge is located within a residential zoning district in the Town of Berlin. This zone is defined as Single Family Residential (R-21) by a March 10, 2016, Town of Berlin Zoning map. The vicinity of the bridge is primarily residential dwellings and forested land. The bridge is not located within any areas of historical significance according to the National Register of Historic Places Map (September 2020). According to the EPA’s Environmental Justice Screening and Mapping Tool (Version 2020), there are no environmental or demographic indicators of concern in the project area.

Wetland and Environmental Resources

According to the National Wetlands Inventory, Mattabesset River is a riverine habitat (R5UBH). Bridge No. 06955 is located in the Mattabesset River subregional drainage basin (4600). The bridge is not located within a regulated Aquifer Protection Area according to the CT DPH December 2021 mapping.

The project is not located in a Natural Diversity Database (NDDB) area per the December 2025 mapping. According to the U.S Fish and Wildlife Service Information for Planning and Consultation (IPaC) resource, the Northern Long-eared Bat and the Monarch Butterfly is a species that may be potentially affected by activities in this location. However, the project is not located in a critical habitat.

Wetlands were delineated as a part of this project, the delineation was focused on the overpass of Glen Street and the Mattabesset River, located south of the intersection of Robindale Drive and Glen Street in the Town of Berlin. The Mattabesset River flows from west to east beneath CT DOT Bridge 06955 (herein the Bridge) which is bound by residential properties to the northeast and southeast and undeveloped, forested areas to the northwest and southwest. The bridge rests atop two large culverts: a concrete box culvert to the south and a corrugated metal pipe with a concrete bottom culvert to the north. The downstream banks immediately adjacent to the bridge are heavily armored with rip-rap and large stones and the surrounding topography exhibits evidence of manipulation including berms and deposition of fill material along and adjacent to the River.

A narrow (3-5' wide), intermittent watercourse was identified and flagged northwest of the Bridge. The watercourse emerges from a flared-end, concrete culvert located adjacent to Glen Street and runs parallel with Glen Street to the confluence with the Mattabesset River. The watercourse is the direct result of man-made drainage improvements to facilitate water flow away from Glen Street. The channel substrate is comprised of mixed stone/cobbles and sand consistent with roadway runoff. A small, 10-12" concrete culvert was identified just north of the driveway for 85 Glen Street which appears to convey runoff from Glen Street through a forested area to a 10" PVC pipe that discharges to the river. The area is not considered a regulated federal wetland as it lacks the required hydric soils, vegetation and hydrology and/or alluvial/floodplain soils.

There are approximately 50 SF of permanent and 50 SF of temporary State/ Federal wetland impacts proposed as a result of drainage modifications. There are approximately 1100 SF of permanent State only wetland impacts as a result of embankment grading and re-establishing the drainage channel northeast of the bridge. There are approximately 2450 SF of permanent watercourse impacts proposed as a result of removing and replacing the existing culverts. Additionally, there will be approximately 220 CY of excavation within the FEMA floodplain, and 620 CY of fill within the FEMA floodplain. Proposed fill material consists of standard/ intermediate riprap, natural streambed material and granular fill.

Abutters List

8-3-53-56
COMERFORD FIONNA & RIOLO DAVID
215 ROBINDALE DR, KENSINGTON CT 06037

8-4-53-55
EMANUELE ERIK D & DAWN
65 GLEN ST, KENSINGTON CT 06037

14-1-52-2
RINGROSE VINCENT P & HOLYST CAROLYN P
102 GLEN ST, KENSINGTON CT 06037

Final Design Plans

Final Design Plans submitted under separate cover

Soil Scientist/ Wetland Report

EcoMaps, LLC
42 Bar Gate Trail
Killingworth, CT 06419
p. 248.885.5477
e. michelle@ecomapsllc.com

February 8, 2023

CHA Consulting, Inc.
Attn: Stephany L. Dubina (SDubina@chacompanies.com)
Anand Seshadri (Aseshardri@chacompanies.com)

RE: **Wetland Delineation Report, CT DOT State Project No. 0007-0266**
Rehabilitation of Bridge No. 06955 carrying Glen Street over the Mattabesset River,
Berlin, CT

Ms. Dubina and Mr. Seshadri,

At the request of CHA, I conducted an inspection of the area demarcated on the Wetlands Delineation Limits Map which was provided in the Request for Proposals for the above-referenced project. A sketch map of flagged locations is included in Attachment A: Wetland Sketch Map. The purpose of the inspection was to delineate federal and State of Connecticut jurisdictional wetlands and watercourses and was conducted by myself, a soil scientist as defined in the Connecticut General Statutes, Title 22a, Chapter 440, Inland Wetlands and Watercourses Act, Section 22a-38.

Regulated Wetlands and Watercourses

In Connecticut wetlands are defined as "land, including submerged land, not regulated pursuant to sections 22a-28 to 22a-35, inclusive, which consists of any of the soil types designated as poorly drained, very poorly drained, alluvial, and floodplain by the National Cooperative Soils Survey, as may be amended from time to time, of the Natural Resources Conservation Service of the United States Department of Agriculture."

Watercourses are defined as being "rivers, streams, brooks, waterways, lakes, ponds, marshes, swamps, bogs and all other bodies of water, natural or artificial, vernal or intermittent, public or private, which are contained within, flow through or border upon this state or any portion thereof, not regulated pursuant to sections 22a-28 to 22a-35, inclusive. Intermittent watercourses shall be delineated by a defined permanent channel and bank and the occurrence of two or more of the following characteristics: (A) Evidence of scour or deposits of recent alluvium or detritus, (B) the presence of standing or flowing water for a duration longer than a particular storm incident, and (C) the presence of hydrophytic vegetation."

Federal Wetlands are defined as "Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." Federal wetlands are delineated based on three-parameters looking at soils, vegetation and hydrology.

EcoMaps, LLC
42 Bar Gate Trail
Killingworth, CT 06419
p. 248.885.5477
e. michelle@ecomapsllc.com

State and federal wetland resource areas were determined by examining the upper 18 - 20" of the soil profile and those areas which met the criteria noted above were demarcated in the field with pink flagging and/or pink, wire stake flags and numbered sequentially as shown on the attached wetland sketch map (Attachment A).

Site Description and Wetlands

The delineation was focused on the overpass of Glen Street and the Mattabesset River, located south of the intersection of Robindale Drive and Glen Street in the Town of Berlin. The Mattabesset River flows from west to east beneath CT DOT Bridge 06955 (herein the Bridge) which is bound by residential properties to the northeast and southeast and undeveloped, forested areas to the northwest and southwest. The bridge rests atop two large culverts: a concrete box culvert to the south and a corrugated metal pipe with a concrete bottom culvert to the north. The downstream banks immediately adjacent to the bridge are heavily armored with rip-rap and large stones and the surrounding topography exhibits evidence of manipulation including berms and deposition of fill material along and adjacent to the River.

The State and Federal wetland boundaries were observed to be coincident throughout the delineation area. Although mapping shows alluvial floodplain soils beyond what was flagged in the field, on-site conditions dictated the true extent of wetland soils. United States Army Corps of Engineers (US ACOE) Wetland Determination Data Forms are provided in Attachment C: In total, three (3) wetland resource areas were identified within the survey area, each of which is described below.

Wetland 1:

This wetland system includes the Mattabesset River that was flagged as W1-1 through W1-10 and W1-1A through W1-12A along the northern and southern edges respectively. With the exception of the small area flagged as W1-3A through W1-5A, the wetland boundary is coincident with the Ordinary High Water (OHW). OHW is consistent connecting W1-3A to W1-5A.

Wetland 2:

This wetland system was flagged as W2-1 through W2-12 and is located within the forested area immediately southwest of the Bridge. The wetland is kidney shaped, lacks a defined inlet and outlet and appears to be isolated from the River. Micro-topography in the area is variable and was likely, at one time, manipulated to create the small depression in which the wetland lies as well as the berm that separates the wetland from the River.

Intermittent Watercourse 1 (IWC1-1/IWC1-1A through IWC1-8/IWC1-8A)

A narrow (3-5' wide), intermittent watercourse was identified and flagged northwest of the Bridge. The watercourse emerges from a flared-end, concrete culvert located adjacent to Glen Street and runs parallel with Glen Street to the confluence with the Mattabesset River. The watercourse is the direct result of man-made drainage improvements to facilitate water flow away from Glen Street. The channel substrate is comprised of mixed stone/cobbles and sand consistent with roadway runoff. No bituminous or otherwise man-made substrate was found that would indicate the presence of a hard-bottomed, man-made channel. The upper reaches of the channel are deeply (3-4') incised and, although the last rain event prior to the delineation

EcoMaps, LLC
42 Bar Gate Trail
Killingworth, CT 06419
p. 248.885.5477
e. michelle@ecomapsllc.com

was approximately 48 hours prior to the delineation, saturated soils and standing water were both evident throughout the channel with no water flow.

A small, 10-12" concrete culvert was identified just north of the driveway for 85 Glen Street which appears to convey runoff from Glen Street through a forested area to a 10" PVC pipe that discharges to the River at wetland flag W1-4A. The area is not considered a regulated wetland as it lacks the required hydric soils, vegetation and hydrology and/or alluvial/floodplain soils.

Wetland Soil Types

To aid in the evaluation of wetland soils which may occur in the project area, digitally available soil survey information was obtained from the Natural Resources Conservation Service (Attachment B: Soils Map). Although the NRCS soil data is not representative of exact, on-site conditions, it provides a general representation of soil characteristics and the soil catena present in the region.

The NRCS Soil Survey Geographic Database (SSURGO) maps the soils within delineation extent as Saco silt loam which are described as being "very deep, very poorly drained soils formed in silty alluvial deposits. They are nearly level soils on flood plains, subject to frequent flooding" and Wethersfield loam which is described as being "very deep, well drained loamy soils formed in dense glacial till on uplands. The soils are moderately deep to dense basal till. They are nearly level to steep soils on till plains, low ridges, and drumlins."

According to the Soil Survey Geographic Database made available through CT Department of Energy and Environmental Protection (CT DEEP) mapping of inland wetland soils, soils within the area of delineation are mapped as alluvial and floodplain soils.

If you have any questions regarding the concerns, please don't hesitate to contact me by email at michelle@ecomapsllc.com or by phone at 248-885-5477.

Regards,

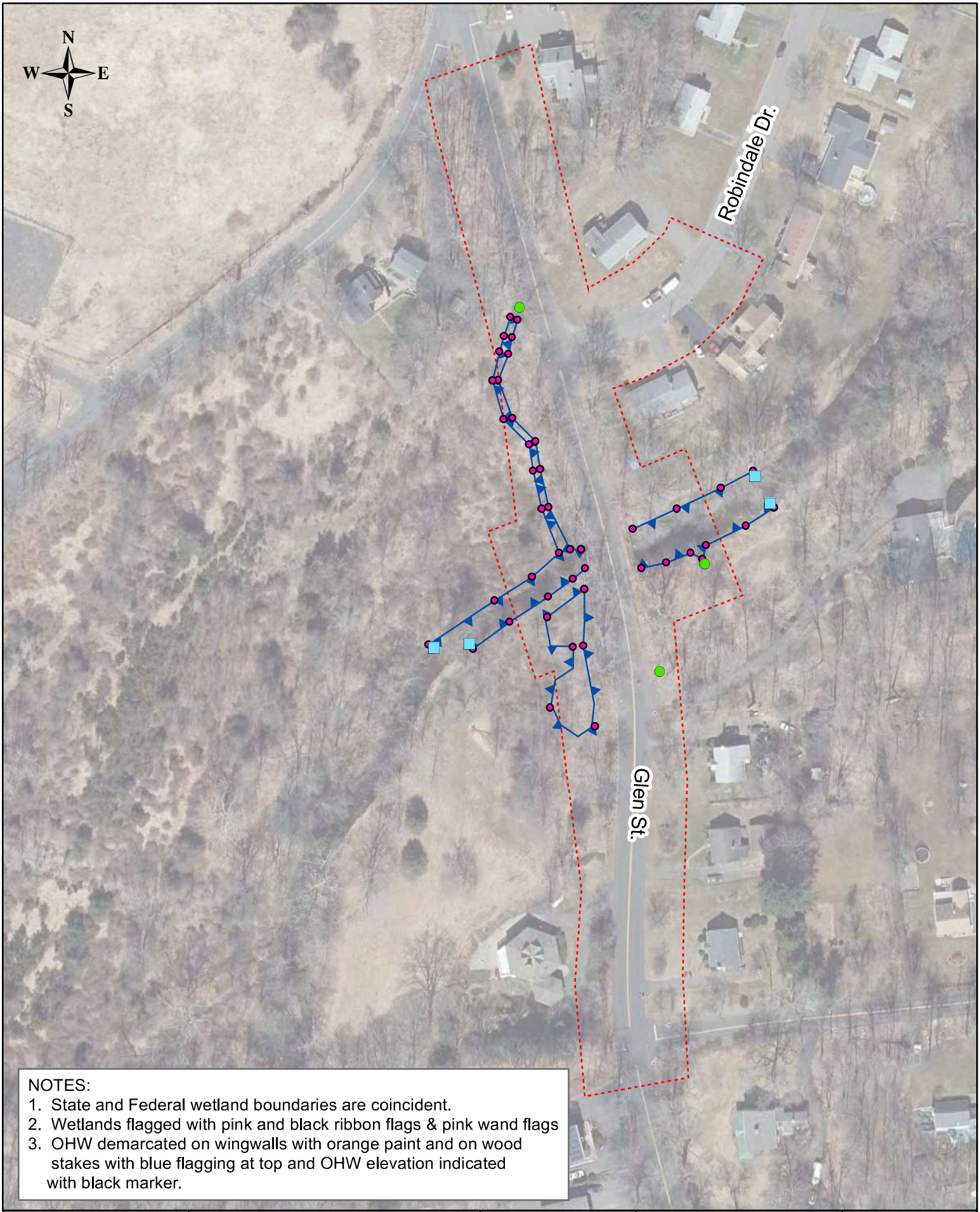
Michelle Ford

Michelle Ford, PWS, CWB®, CESSWI
Registered Professional Soil Scientist
EcoMaps, LLC.

Attachments:

Attachment A-1: Overview Map
Attachment A-2: Wetlands Field Sketch Map
Attachment B: Soils Map
Attachment C: ACOE Wetland Determination Data Forms
Attachment D: Site Photographs
Attachment E: Wetland Functions and Values evaluation form
Attachment F: OHW Data Form

Attachment A-1
Overview Map



NOTES:
1. State and Federal wetland boundaries are coincident.
2. Wetlands flagged with pink and black ribbon flags & pink wand flags
3. OHW demarcated on wingwalls with orange paint and on wood stakes with blue flagging at top and OHW elevation indicated with black marker.

Att. A-1: Overview
Field Sketch Map
CT DOT 0007-0266
Glen Street, Berlin

Legend

- OHW Stake (Est.)
- Culvert/Pipe (Est.)
- Wetland Flag (Est.)
- Wetland Boundary (Est.)
- Delineation Boundary (Est.)

Locations are approximate for field location of flags only

1 inch = 120 feet

0 30 60 120 Feet

Mapping and delineation services provided by:

ECOmaps LLC

Attachment A-2
Wetlands Field Sketch Map

NOTES:
1. State and Federal wetland boundaries are coincident.
2. Wetlands flagged with pink and black ribbon flags & pink wand flags
3. OHW demarcated on wingwalls with orange paint and on wood stakes with blue flagging at top and OHW elevation indicated with black marker.

Att. A-2: Wetlands
Field Sketch Map
CT DOT 0007-0266
Glen Street, Berlin

Legend
- OHW Stake (Est.)
- Culvert/Pipe (Est.)
- Wetland Flag (Est.)
- Wetland Boundary (Est.)
- Delineation Boundary (Est.)

Locations are approximate for field location of flags only

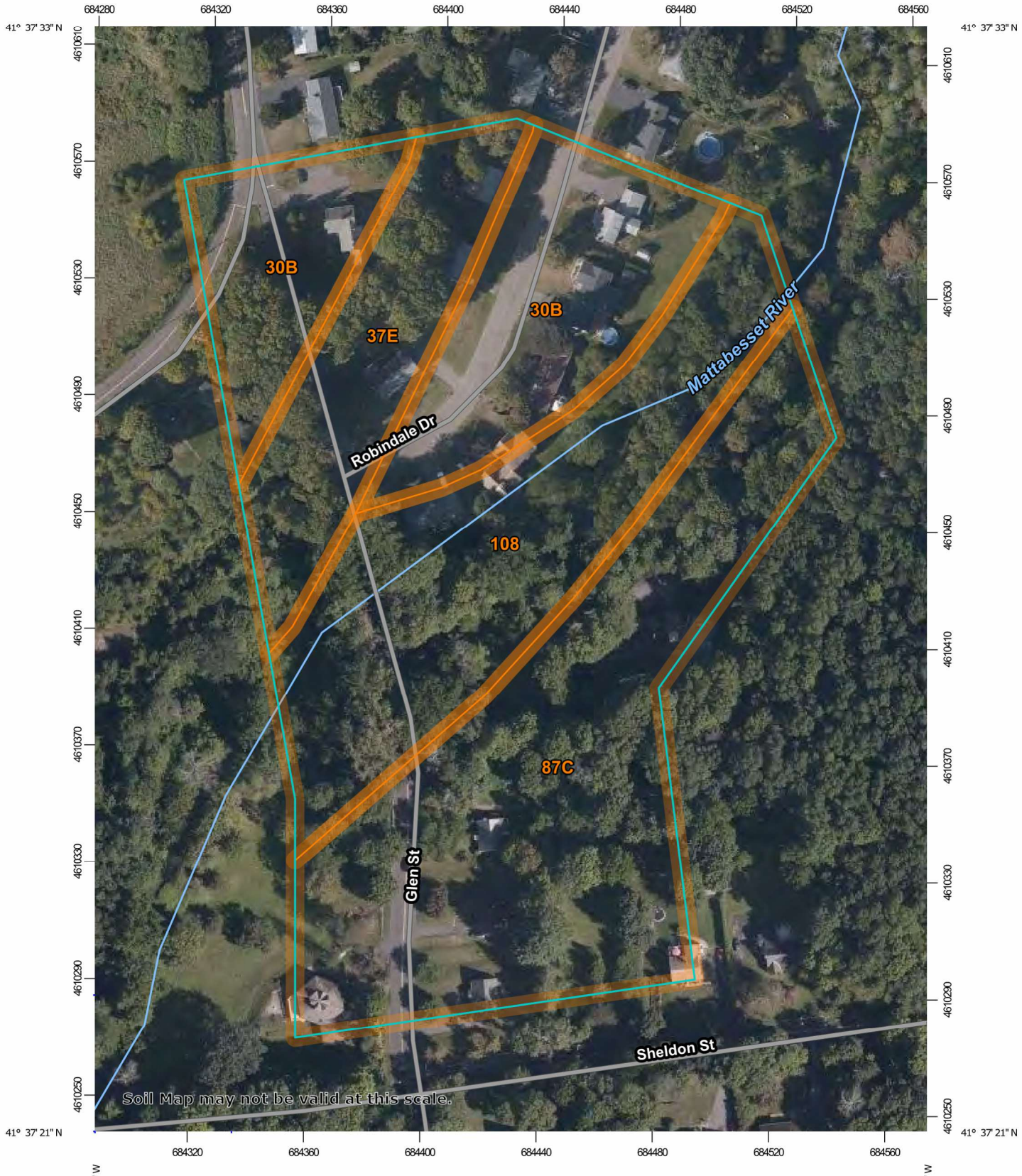
1 inch = 50 feet

0 12.5 25 50 Feet

Mapping and delineation services provided by:
ECOmaps LLC

Attachment B
Soils Map

Soil Map—State of Connecticut
(Attachment B)



Map Scale: 1:1,840 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 25 50 100 150

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut
Survey Area Data: Version 22, Sep 12, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 30, 2019—Oct 15, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
30B	Branford silt loam, 3 to 8 percent slopes	2.9	24.3%
37E	Manchester gravelly sandy loam, 15 to 45 percent slopes	1.6	13.4%
87C	Wethersfield loam, 8 to 15 percent slopes	4.4	36.8%
108	Saco silt loam	3.1	25.5%
Totals for Area of Interest		**12.1**	**100.0%**

Attachment C:
ACOE Wetland
Determination Data Forms

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: CT DOT 00007-0266 City/County: Hartford Sampling Date: 10/20/2022

Applicant/Owner: CHA/DOT State: CT Sampling Point: W1-3 up

Investigator(s): M.Ford Section, Township, Range:

Landform (hillside, terrace, etc.): River/floodplain Local relief (concave, convex, none): convex Slope (%): 5

Subregion (LRR or MLRA): LRR R, MLRA 145 Lat: 41.624 Long: -72.786 Datum: NAD83

Soil Map Unit Name: Saco silt loam NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**	
Hydric Soil Present?	Yes ____	No X	**within a Wetland?**	**Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: W1-3 up

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Platanus occidentalis*	10	Yes	FACW
2. *Acer rubrum*	20	Yes	FAC
3. *Fraxinus americana*	10	Yes	FACU
4.			
5.			
6.			
7.			
	40	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Rosa multiflora*	5	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	5	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Artemisia vulgaris*	80	Yes	UPL
2. *Pteridium aquilinum*	10	No	FACU
3. *Alliaria petiolata*	5	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	95	=Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	20	x 3 =	60
FACU species	30	x 4 =	120
UPL species	80	x 5 =	400
Column Totals:	140 (A)		600 (B)

Prevalence Index = B/A = 4.29

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W1-3 up

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	10YR 4/2	100					Sandy	Sandy/gravely fill
1-12	10YR 4/3	100					Loamy/Clayey	Sandy/gravely fill

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Fill/cobbles at 12"

Depth (inches): 12"

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: CT DOT 00007-0266 City/County: Hartford Sampling Date: 10/20/2022

Applicant/Owner: CHA/DOT State: CT Sampling Point: W2-9 up

Investigator(s): M.Ford Section, Township, Range:

Landform (hillside, terrace, etc.): River/floodplain Local relief (concave, convex, none): convex Slope (%): 5

Subregion (LRR or MLRA): LRR R, MLRA 145 Lat: 41.624 Long: -72.787 Datum: NAD83

Soil Map Unit Name: Saco silt loam NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**	
Hydric Soil Present?	Yes ____	No X	**within a Wetland?**	**Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: W2-9 up

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Platanus occidentalis*	5	No	FACW
2. *Robinia pseudoacacia*	5	No	FACU
3. *Quercus rubra*	20	Yes	FACU
4.			
5.			
6.			
7.			
	30	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Rosa multiflora*	50	Yes	FACU
2. *Lindera benzoin*	5	No	FACW
3.			
4.			
5.			
6.			
7.			
	55	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Asarum canadense*	40	Yes	UPL
2. *Solidago rugosa*	20	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60	=Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. *Toxicodendron radicans*	1	No	FAC
2.			
3.			
4.			
	1	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	21	x 3 =	63
FACU species	75	x 4 =	300
UPL species	40	x 5 =	200
Column Totals:	146 (A)		583 (B)

Prevalence Index = B/A = 3.99

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W2-9 up

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/2	100					Loamy/Clayey	
6-18	10YR 4/4	100					Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: CT DOT 00007-0266 City/County: Hartford Sampling Date: 10/20/2022

Applicant/Owner: CHA/DOT State: CT Sampling Point: W2-9 wet

Investigator(s): M.Ford Section, Township, Range:

Landform (hillside, terrace, etc.): Floodplain Local relief (concave, convex, none): convex Slope (%): 5

Subregion (LRR or MLRA): LRR R, MLRA 145 Lat: 41.624 Long: -72.787 Datum: NAD83

Soil Map Unit Name: Saco silt loam NWI classification: PFO1

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**	
Hydric Soil Present?	Yes X	No ____	**within a Wetland?**	**Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- X Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 10

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants. Sampling Point: W2-9 wet

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Platanus occidentalis*	5	Yes	FACW
2. *Robinia pseudoacacia*	5	Yes	FACU
3. *Quercus rubra*	10	Yes	FACU
4.			
5.			
6.			
7.			
	20	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Rosa multiflora*	10	Yes	FACU
2. *Lindera benzoin*	25	Yes	FACW
3. *Alnus incana*	10	Yes	FACW
4.			
5.			
6.			
7.			
	45	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Carex crinita*	60	Yes	OBL
2. *Solidago rugosa*	5	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	65	=Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 57.1% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	60	x 1 =	60
FACW species	40	x 2 =	80
FAC species	5	x 3 =	15
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column Totals:	130 (A)		255 (B)

Prevalence Index = B/A = 1.96

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W2-9 wet

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR 4/3	100					Loamy/Clayey	
7-18	5YR 4/2	95	5YR 4/6	5	C	M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

Attachment D:
Site Photographs

Attachment D: Site Photographs
CT DOT 0007-0266

Photo 1: View of Bridge 0007-0266 facing east.

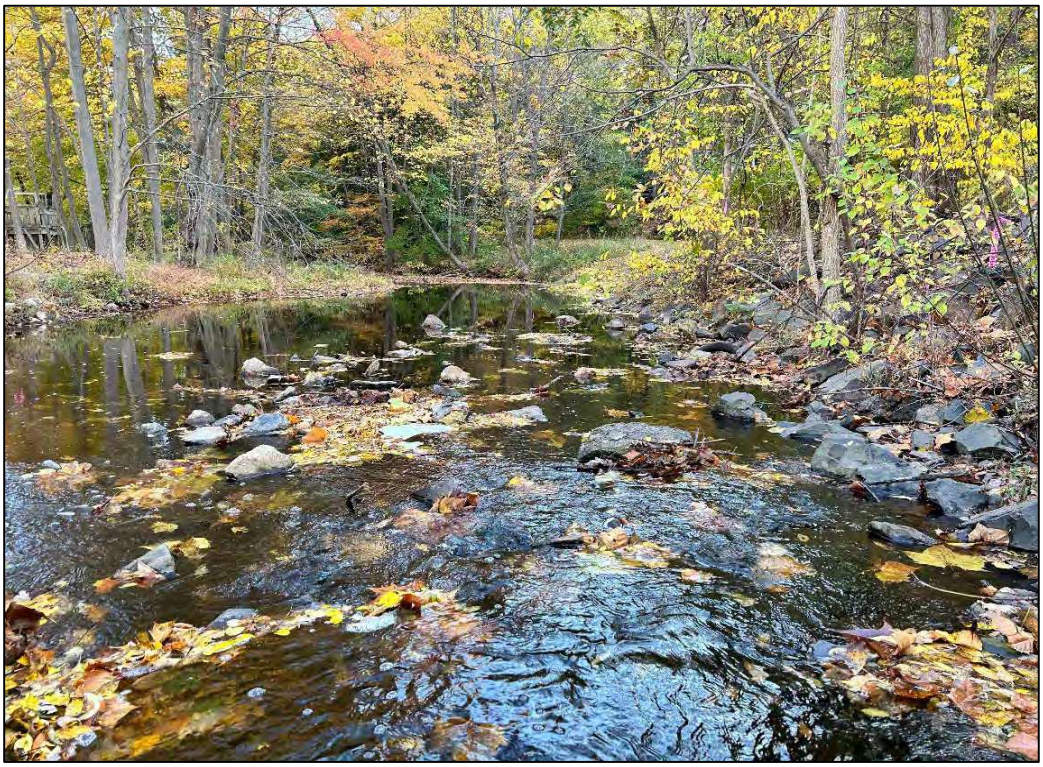


Photo 2. View of Mattabesset River near the Bridge facing downstream.

Photo 3: View of Mattabesset River upstream of Bridge 0700-0266.

Photo 4. View of heavy armoring along the northeast side of Bridge 0700-0266.

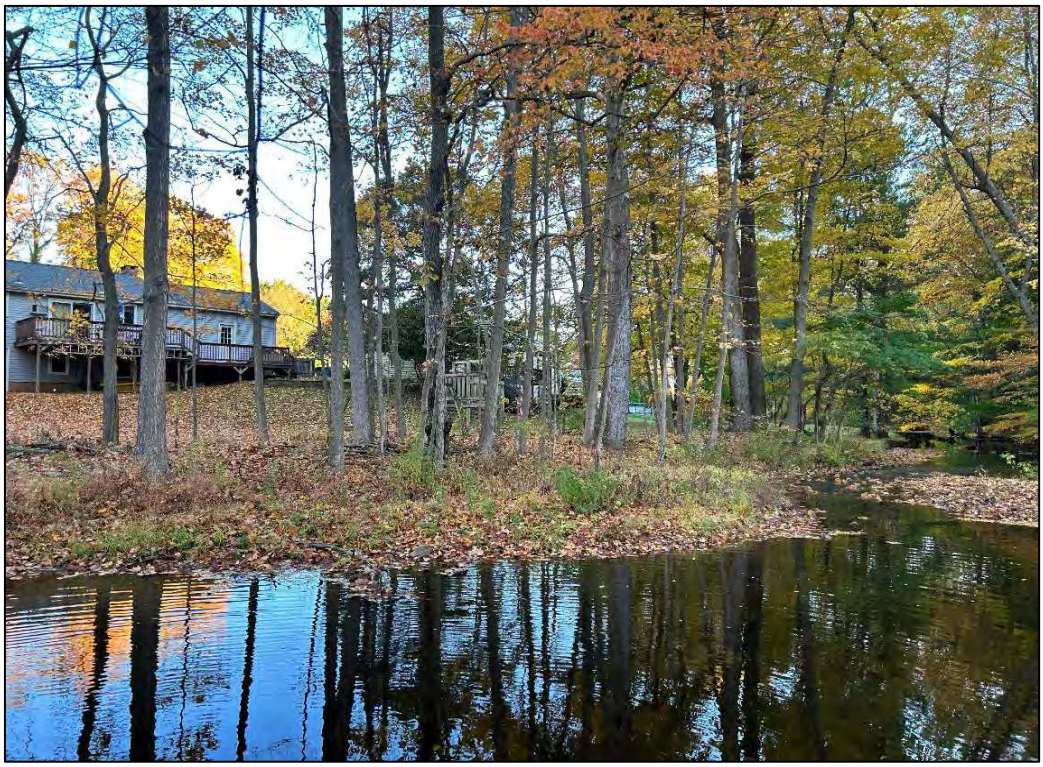


Photo 5: View of residential properties along the River. View facing north.

Photo 6. View of slope along the southeastern bank of the Mattabesset River.

Photo 7: View of a portion of the wetland flagged as Wetland 2 (W2 flagging series) adjacent to Glen Street.

Photo 8. View of a portion of Wetland 2 facing east.

Photo 9: View of the confluence of the intermittent drainage channel (IWC series flagging) and the Mattabesset River west of Bridge 0700-0266.

Photo 10. Deeply incised, intermittent drainage channel facing the River. View facing south.

Photo 11: Flared end of the culvert and steep, rip-rap armoring located northwest of Bridge 0700-0266 off Glen street that is the source of the intermittent drainage channel.

Photo 12. Upgradient view of the drainage channel and culvert. View facing northeast.

Photo 13: Flared end culvert off Glenn Street that supplies the intermittent drainage channel.

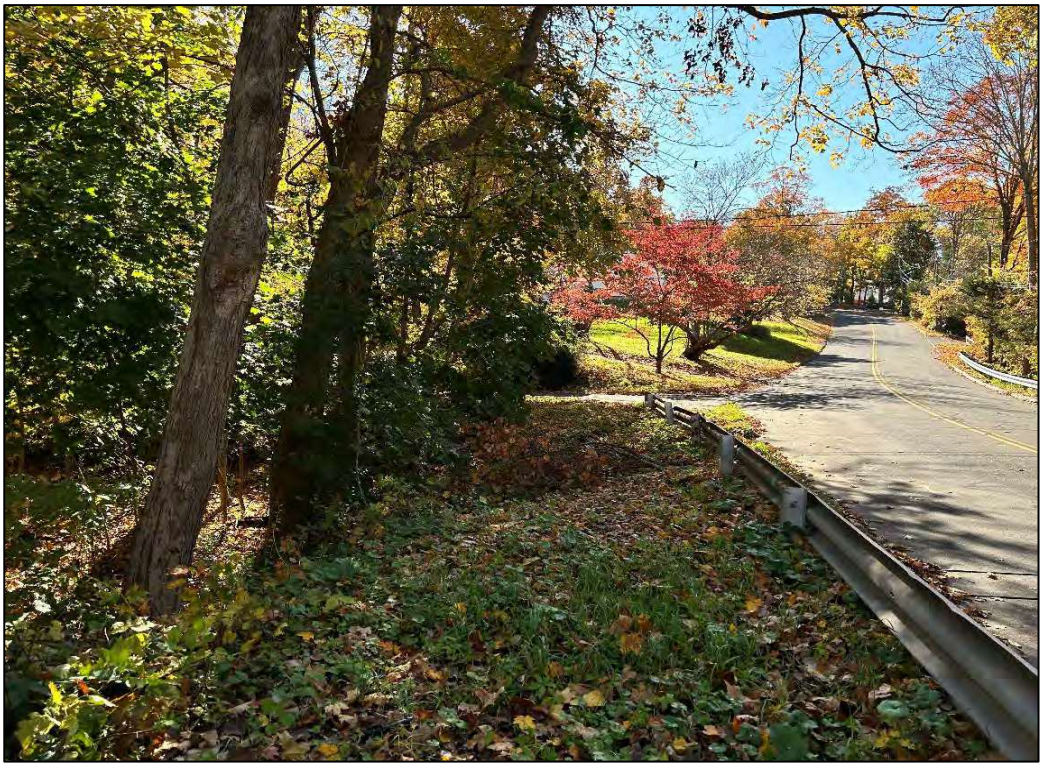


Photo 14. Depression with culvert southeast of Bridge 0700-0266. View facing north.

Photo 15: Small (10-12") concrete culvert southeast of Bridge 0700-0266. View facing northeast.

Photo 16: Non-regulated drainage area with hydric vegetation located downgradient of the culvert located southeast of Bridge 0700-0266.

Photo 17: PVC pipe that receives flow from the drainage area located southeast of the Bridge and discharges into the Mattabesset River.

Photo 18. Deeply incised banks of the Mattabesset River located northeast of Bridge 0700-0266.

Attachment E:
Wetland Functions and Values Evaluation Form

Wetland Function-Value Evaluation Form

Total area of wetland: 0.01+ac Human made? Yes Is wetland part of a wildlife corridor? No or a "habitat island"? No

Adjacent land use: Roadway, forested and residential Distance to nearest roadway or other development: 0

Dominant wetland systems present: R4UB Contiguous undeveloped buffer zone present: No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Upper

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D.: IWC1

Latitude: 41.625 Longitude: -72.787

Prepared by: M.Ford Date: 08/20/2022

Wetland Impact:
Type: Stormwater drainage Area: <0.01ac

Evaluation based on:
Office ____ Field X

Corps manual wetland delineation completed? Y X N ____

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	N			
Floodflow Alteration	Y	4, 9	X	Flood storage is very limited.
Fish and Shellfish Habitat	N			
Sediment/Toxicant Retention	Y			
Nutrient Removal	N			
Production Export	N			
Sediment/Shoreline Stabilization	N			
Wildlife Habitat	N			
Recreation	N			
Educational/Scientific Value	N			
Uniqueness/Heritage	N			
Visual Quality/Aesthetics	N			
ES Endangered Species Habitat	N			
Other				

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland: 0.01+ac | Human made?: No | Is wetland part of a wildlife corridor?: No | or a "habitat island"?: No

Adjacent land use: Roadway, forested and residential | Distance to nearest roadway or other development: 0

Dominant wetland systems present: 3UB1 | Contiguous undeveloped buffer zone present: No

Is the wetland a separate hydraulic system?: No | If not, where does the wetland lie in the drainage basin?: Upper

How many tributaries contribute to the wetland?: 2 +/- | Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D.: Wetland 1

Latitude: 41.624 | Longitude: -72.786

Prepared by: M.Ford | Date: 08/20/2022

Wetland Impact:
Type: | Area:

Evaluation based on:
Office: | Field: X

Corps manual wetland delineation completed? Y: X | N:

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	1,2,3,4,7		
Floodflow Alteration	Y	4,9,11,13,14	X	
Fish and Shellfish Habitat	Y	4,8,10,14		
Sediment/Toxicant Retention	Y	1,2,3,8,10,11		
Nutrient Removal	Y	4		
Production Export	Y	10		
Sediment/Shoreline Stabilization	N			
Wildlife Habitat	N			
Recreation	N			
Educational/Scientific Value	N			
Uniqueness/Heritage	N			
Visual Quality/Aesthetics	N			
ES Endangered Species Habitat	N			
Other				

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland: 0.01+ac Human made?: No Is wetland part of a wildlife corridor?: No or a "habitat island"?: No

Adjacent land use: Roadway, forested and residential Distance to nearest roadway or other development: 0

Dominant wetland systems present: PFO1 Contiguous undeveloped buffer zone present: No

Is the wetland a separate hydraulic system?: Yes If not, where does the wetland lie in the drainage basin?:

How many tributaries contribute to the wetland?: 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D.: Wetland 2

Latitude: 41.625 Longitude: -72.787

Prepared by: M.Ford Date: 08/20/2022

Wetland Impact:
Type: Area:

Evaluation based on:
Office: Field: X

Corps manual wetland delineation completed? Y: X N:

Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	4,9		
Floodflow Alteration	Y	3, 4,5,8, 9	X	Flood storage is limited.
Fish and Shellfish Habitat	N			
Sediment/Toxicant Retention	Y	1,3,10		
Nutrient Removal	Y	4		
Production Export	Y	1		
Sediment/Shoreline Stabilization	N			
Wildlife Habitat	Y	7		
Recreation	N			
Educational/Scientific Value	N			
Uniqueness/Heritage	N			
Visual Quality/Aesthetics	N			
ES Endangered Species Habitat	N			
Other				

Notes:

* Refer to backup list of numbered considerations.

Attachment F:
CT DOT Appendix A:
OHW Data Form

Appendix A: OHW Data Form

ORDINARY HIGH WATER MARK DELINEATION

DATA FORM (Part 1 – Field Work)

Project #: 0007-0266 Date: 10/20/2022

Town/Route: Berlin/Glen Street

Watercourse/Waterbody (if available): Mattabesset River

Investigator(s): M. Ford
Mapping referenced: GIS
Weather Conditions at Investigation: Sunny, ~50F
Measurable precipitation in the past 72 hours? Yes No
Other preceding events (i.e, hurricane, dam failure upstream, etc.) that would make physical indicators unreliable? (circle one) Yes No
Observed Water Level: (circle one) High Typical Low
Notes: (Specify locations (generally) where physical indicators were located):(*Example: Upstream of bridge had the presence of litter and debris, shelving, and vegetation matted down. Downstream of the bridge had the presence of scour, shelving and exposed roots. Within the bridge/culvert water staining was present.)* Physical indicators of OHW were observed within the box culvert portion of Bridge 0007-0266 as staining. Additionally, withing the Mattabasset River, indicators of OHW both up and downstream of the Bridge included: - Erosion/scour - Bank undercutting - Root exposure - Water staining of rocks along banks - Headcut/knickpoint Note that OHW not demarcated on RCP culvert beneath bridge due to it's apparent function as an overflow channel and field markers showing regular flow were generally absent.

OHW marked at structure inlet [X] outlet [X] N/A [ ]

[X] Photo Documentation Attached
(Depict on photos – any estimated OHW marks, flagging and physical indicators)

[X] Sketch Attached (ensure sketch is sent to central surveys)
(Depict on sketch – any estimated OHW marks, flagging and physical indicators)

NOTES:
1. State and Federal wetland boundaries are coincident.
2. Wetlands flagged with pink and black ribbon flags & pink wand flags
3. OHW demarcated on wingwalls with orange paint and on wood stakes with blue flagging at top and OHW elevation indicated with black marker.

Att. A-2: Wetlands
Field Sketch Map
CT DOT 0007-0266
Glen Street, Berlin

Legend

- OHW Stake (Est.)
- Culvert/Pipe (Est.)
- Wetland Flag (Est.)
- Wetland Boundary (Est.)
- Delineation Boundary (Est.)

Locations are approximate for field location of flags only

1 inch = 50 feet

0 12.5 25 50 Feet

Mapping and delineation services provided by:

ECOmaps LLC

Photo 1: View of Bridge 06955 showing both culverts and lower flow in the corrugated metal pipe (CMP) culvert to the north. View facing east from upstream.

Photo 2. View of CMP showing lower flow than within the adjacent box culvert.

Photo 3: View of Bridge 06955 and associated OHW marks on bridge in orange. View facing east.

Photo 4. Example of OHW painted on Bridge 06955. View facing north.

Photo 5: Example of OHW painted on Bridge 06955. View facing south.

Photo 6: OHW stake at location of deeply undercut banks and exposed roots visible throughout the banks of the river.

21 Griffin Rd. North
Windsor, CT 06095

T 860.298.9692
TRCcompanies.com

March 12, 2025

Mr. Jason Coite P.E.
Principal Engineer
Division of Environmental Compliance
Bureau of Engineering and Construction
State of Connecticut Department of Transportation
2800 Berlin Turnpike, P.O. Box 317546
Newington, CT 06131-7546

Attention: Michael Bedson, P.E. / Felix Mathieu

Subject: On-Call Asbestos, Lead, Air Quality & Demolition Compliance
Agreement No. 10.04-02 (23)
HazMat Inspection – Replacement of Bridge No. 06955, Glen Street over Mattabesset River, Berlin, Connecticut
ConnDOT Assignment No. 524-8406
ConnDOT Project No. 7-266
TRC Project No. 501871.8406.0710

Dear Mr. Coite:

TRC performed a limited hazardous materials site investigation associated with the replacement of Bridge No. 06955, Glen Street over Mattabesset River, Berlin, Connecticut. No detectable levels of lead were identified on the painted water main pipe running adjacent to Bridge No. 06697, therefore any paint waste generated would be non-hazardous, non-RCRA lead waste. No other painted surfaces were identified at Bridge No. 06955. All suspect materials sampled at the bridge (pipe culvert coating and pipe coating) were found to be non-ACM. No other hazardous/regulated items, bird/pigeon guano, or homeless activity/bloodborne pathogens were identified at Bridge No. 06955.

Laboratory results, XRF Measurement Data Summary Table, TRC Mobile Data Solutions report, and project information sheets are attached.

If you have any questions, please call TRC at (860) 298-9692.

Very Truly Yours,

TRC

Stephen R. Arienti, CHMM
New England Regional Practice Leader – Engineer in Charge

Erik R. Plimpton, P.E., CHMM, CMC
Vice President – Engineer in Charge

Industrial Hygiene Laboratory
21 Griffin Road North
Windsor, CT 06095
(860) 298-6308

BULK ASBESTOS ANALYSIS REPORT

CLIENT: CT Department of Transportation

Lab Log #: 0066492
Project #: 501871.8406.0710
Date Received: 02/20/2025
Date Analyzed: 02/21/2025

Site: Bridge 06955, Glen Street, Berlin, CT

POLARIZED LIGHT MICROSCOPY by EPA 600/R-93/116

Sample No.	Sample Location	Homogeneous Material Description	Other Matrix Materials	Asbestos %	Asbestos Type
1	Under bridge inside pipe culvert	Light Grey PC1 - Coating inside pipe of the pipe culvert	- - -	ND	None
2	Under bridge inside pipe culvert	Light Grey PC1 - Coating inside pipe of the pipe culvert	- - -	ND	None
3	On pipe, east of bridge	Black/Brown PC2 - Coating on large pipe to east of bridge	- - -	ND	None
4	On pipe, east of bridge	Black/Brown PC2 - Coating on large pipe to east of bridge	- - -	ND	None

ND - asbestos was not detected
Trace - asbestos was observed at level of 1% or less - This is the reporting limit
NA/PS - Not Analyzed / Positive Stop
SNA - Sample Not Analyzed- See Chain of Custody for details
Notes: Asbestos-Containing Material (ACM) is any material containing more than 1% asbestos

Note: Polarized-light microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. In those cases, EPA recommends, and certain states (e.g. NY) require, that negative results be confirmed by quantitative transmission electron microscopy.

The Laboratory at TRC follows 18/01A EPA -- 40 CFR Appendix E to subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples and 18/A03 EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials which utilize polarized light microscopy (PLM). Our analysts have completed an accredited course in asbestos identification. TRC's Laboratory is accredited under the National Voluntary Laboratory Accreditation Program (NVLAP), for Bulk Asbestos Fiber Analysis, NVLAP Code 101424-01. TRC is accredited by the AIHA Laboratory Accreditation Programs AIHA LAP (ID: LAP-100122) in the Industrial Hygiene Program (IHLAP) for PLM. Asbestos content is determined by visual estimate unless otherwise indicated. Quality Control is performed in-house on at least 10% of samples and QC data related to the samples is available upon written request from client.

This report shall not be reproduced, except in full, without the written approval of TRC. This report must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report relates only to the items tested, as received by the laboratory.

Analyzed by: Kathleen Williamson, Laboratory Manager

Reviewed by Najaat Bhura, Approved Signatory

Date Issued 02/24/2025

TRC
21 GRIFFIN ROAD NORTH
WINDSOR, CONNECTICUT 06095
TELEPHONE (860) 298-9692
FAX (860) 298-6380

ASBESTOS BULK SAMPLING CHAIN OF CUSTODY

Edition: October 2009
Supersede Previous Edition

LAB ID #. 66492

PROJECT NUMBER	PROJECT NAME	PARAMETERS	TURNAROUND TIME
501871.8406.0710	ConnDOT — Bridge 06955; Berlin, CT, Glen Street, Berlin, CT		PLM: [ ] 8hr [X] 24hr [ ] 48hr [ ] 3day TEM: [X] 24hr [ ] 48hr [ ] 3day [ ] 5day

SIGNATURE	INSPECTOR
David Heelon	Chris Rekofsky,David Heelon

FIELD SAMPLE NUMBER	DATE	TIME	TYPE COMP	TYPE GRAB	SAMPLE LOCATION	PLM EPA 600/R93/116 (POSITIVE STOP)	PLM EPA 600/R93/116 (w/ gravimetric reduction) (POSITIVE STOP)	ANALYZE BY LAYER	POINT COUNT (IF >1% & <10%)	TEM NY NOB 198.4 (IF PLM SERIES NEG)	MATERIAL
1	2/20/2025	11:50		X	Under bridge inside pipe culvert	X				X	PC1 - Coating inside pipe of the pipe culvert
2	2/20/2025	11:52		X	Under bridge inside pipe culvert	X					PC1 - Coating inside pipe of the pipe culvert
3	2/20/2025	12:42		X	On pipe, east of bridge	X				X	PC2 - Coating on large pipe to east of bridge
4	2/20/2025	12:44		X		X					PC2 - Coating on large pipe to east of bridge

Relinquished by: (Signature)	Date:	Received by: (Signature)	Relinquished by: (Signature)	Date:	Received by: (Signature)
David Heelon	2/20/25	Najaat Bhuva 2/20/25 1500			
(Printed) David Heelon	Time: 1422	(Printed) Najaat Bhuva	(Printed)	Time:	(Printed)

Remarks:
Email results to: S.arienti & D_Heelon. Thanks.

Condition of Samples:
Acceptable: Yes ✓ No
Comments:

Aerobiology Laboratory Associates, Inc.

22 Cummings Park, Woburn, MA 01801 Ph. 781-935-3212 Fax 781-932-4857

TEM Bulk Chain of Custody Record

Date: 02/21/2025

PO#: **C501871** Analysis Type: Chatfield **EPA N.O.B** Qualitative

Client: TRC

Client Job#: 501871.8406.0710

Client Job Ref./Loc.: CT DOT- Bridge 06955, Berlin, CT

Relinquished by: K. Williamson

Received by:

Report to: KWilliamson@trccompanies.com; SArienti@trccompanies.com; EPlimpton@trccompanies.com; KGraff@trccompanies.com; DCarillo@trccompanies.com; MKostruba@trccompanies.com

Samplers Name: D. Heelon & C. Rekofsky

Turnaround Time: <12 Hour **<24 Hour** <48 Hour <3 Day 5 Day Other:

				For Lab Use Only	
Client ID #	**Lab ID#**	**Description**	**Location**	**Acceptable on Receipt**	**Comments**
1	66492	Coating	See COC		
3	66492	Coating			

For Lab Use Only	# Spies	Total	Client #	Batch #	Results Reported	Comments

Pace

Steve Arienti
TRC Companies, Inc. (CT)
21 Griffin Road North
Windsor, CT 06095

February 25, 2025

Dear Steve Arienti,

Results of samples you described and submitted to Pace Analytical Services, LLC. are shown on the enclosed data sheets. The analytical results in this report apply to the items tested only.
The listed samples were prepared and analyzed in compliance with the New York State Transmission Electron Microscope Method for Identifying and Quantitating Asbestos in Non-Friable Organically Bound Bulk Samples. This method is used for the determination of weight percent of asbestos in non-friable materials.
The sample is processed to remove non-asbestos interference. The remaining residue is examined using a Philips transmission electron microscope equipped with selected area electron diffraction (SAED) and an Evex energy dispersive x-ray analyzer.

The following are reported: identification numbers, type of material, initial weight of the sample, weight percent of organic material lost by ashing, weight percent of carbonates lost by acid dissolution, weight percent of non-fibrous/non asbestos inorganic material, total weight percent of asbestos in the original sample, and the type(s) of asbestos, if any.
The EPA recognizes asbestos as the following: actinolite, amosite, anthophyllite, chrysotile, crocidolite, and tremolite. To be considered asbestos containing, a material must be determined to contain greater than one percent asbestos. Samples are retained for a period of 2 months.

The quality control data related to the samples analyzed are available for review upon the written request of the client. Pace Analytical Services, LLC. and its personnel assume no responsibility for potential sample contamination, misuse, misinformation, or misrepresentation by the client. The enclosed results may not be used under any circumstances as product endorsement by any US government agency including NIST/NVLAP.
This report may not be reproduced, except in its entirety, without permission of the Pace Analytical Services, LLC.'s Laboratory Manager.

Please contact me if you have any questions regarding this report or related information.

Aimee Cormier, Laboratory Manager

Enclosure:

BATCH NUMBER : NT 21432 CLIENT PROJECT ID: 501871.8406.0710
Client Ref: CT DOT - Bridge 06955, Berlin, CT
CT ID# PH-0209; MA ID# AA000251; ME ID# LB-055; ME ID# LA-056; VT ID# AL254362; RI ID# TEM 00150.

Pace Analytical Services, LLC. - Woburn

22 Cummings Park, Woburn, Massachusetts 01801
781-935-3212 ~ E-Mail bostonaero@pacelabs.com

Laboratory Report

Client Project #: 501871.8406.0710
Client Reference: CT DOT - Bridge 06955, Berlin, CT
PO #: C501871
Client #: 297
Client Name: TRC Companies, Inc. (CT)

Batch: **NT 21432**
Method: NOB
Date Received: 2/24/2025
Date Analyzed: 2/25/2025
Date of Report: 2/25/2025

LAB ID	Field ID	Description:	Color	Initial Weight	% Asbestos Types						% Other Non-asb.	% Organic	% Carb.	Total % Asbestos	Analyzed / Charged	Prepped / Charged
					CHR	AMO	ACT	CRO	ANT	TRE						
NT153925 1		Coating inside Pipe		.2427	.00	.00	.00	.00	.00	.00	69.18	4.90	25.92	**ND**	Yes	No
NT153926 3		Coating on Large Pipe		.1020	.00	.00	.00	.00	.00	.00	20.00	71.47	8.53	**ND**	Yes	No

Comments:

Key: CHR = Chrysotile AMO = Amosite CRO = Crocidolite ACT = Actinolite TRE = Tremolite ANT = Anthophyllite TR = Trace = < 1% ND = None Detected

Aimee L Cormier

Aimee Cormier, Analyst

NT 21432

Aerobiology Laboratory Associates, Inc.

22 Cummings Park, Woburn, MA 01801 Ph. 781-935-3212 Fax 781-932-4857

TEM Bulk Chain of Custody Record

Date: 02/21/2025

PO#: **C501871** Analysis Type: Chatfield **EPA N.O.B** Qualitative

Client: TRC

Client Job#: 501871.8406.0710

Client Job Ref./Loc.: CT DOT- Bridge 06955, Berlin, CT

Relinquished by: K. Williamson

Received by: Dawn Tousard 2.24.25 9:30

Report to: KWilliamson@trccompanies.com; SArienti@trccompanies.com; EPlimpton@trccompanies.com; KGraff@trccompanies.com; DCarillo@trccompanies.com; MKostruba@trccompanies.com

Samplers Name: D. Heelon & C. Rekofsky

Turnaround Time: <12 Hour **<24 Hour** <48 Hour <3 Day 5 Day Other:

				For Lab Use Only	
Client ID #	**Lab ID#**	**Description**	**Location**	**Acceptable on Receipt**	**Comments**
1	66492	Coating	See COC		
3	66492	Coating			

For Lab Use Only	# Spies	Total	Client #	Batch #	Results Reported	Comments

NT 21432

TRC
21 GRIFFIN ROAD NORTH
WINDSOR, CONNECTICUT 06095
TELEPHONE (860) 298-9692
FAX (860) 298-6380

ASBESTOS BULK SAMPLING CHAIN OF CUSTODY

Edition: October 2009
Supersede Previous Edition

LAB ID #. 66492

PROJECT NUMBER	PROJECT NAME	PARAMETERS	TURNAROUND TIME
501871.8406.0710	ConnDOT — Bridge 06955; Berlin, CT, Glen Street, Berlin, CT		PLM: 8hr X 24hr 48hr 3day TEM: X 24hr 48hr 3day 5day
SIGNATURE: David Heelon	INSPECTOR: Chris Rekofsky,David Heelon		

FIELD SAMPLE NUMBER	DATE	TIME	TYPE: COMP	TYPE: GRAB	SAMPLE LOCATION	PLM EPA 600/R93/116 (POSITIVE STOP)	PLM EPA 600/R93/116 (w/ gravimetric reduction) (POSITIVE STOP)	ANALYZE BY LAYER	POINT COUNT (IF >1% & <10%)	TEM NY NOB 198.4 (IF PLM SERIES NEG)	MATERIAL
1	2/20/2025	11:50		X	Under bridge inside pipe culvert	X				X	PC1 - Coating inside pipe of the pipe culvert
2	2/20/2025	11:52		X	Under bridge inside pipe culvert	X					PC1 - Coating inside pipe of the pipe culvert
3	2/20/2025	12:42		X	On pipe, east of bridge	X				X	PC2 - Coating on large pipe to east of bridge
4	2/20/2025	12:44		X		X					PC2 - Coating on large pipe to east of bridge

Relinquished by: (Signature)	Date:	Received by: (Signature)	Relinquished by: (Signature)	Date:	Received by: (Signature)
David Heelon	2/20/25	Najaeat Bhuiyan 2/20/25 1500			
(Printed) David Heelon	Time: 1422	(Printed) Najaeat Bhuiyan	(Printed)	Time:	(Printed)

Remarks:
Email results to: S.arienti & D. Heelon. Thanks.

Condition of Samples:
Acceptable: Yes ✓ No
Comments:

80 Lupes Drive
Stratford, CT 06615

Tel: (203) 377-9984
Fax: (203) 377-9952
e-mail: cet1@cetlabs.com

Client: Mr. Stephen Arienti
TRC Environmental Consultants
21 Griffin Rd., North
Windsor, CT 06095

Analytical Report

CET# 25B0429

Report Date:February 24, 2025
Project: Bridge 06955, Glen Street, Berlin
Project Number: 501871.8406.0710

Connecticut Laboratory Certificate: PH 0116
Massachusetts Laboratory Certificate: M-CT903
Rhode Island Laboratory Certificate: 199

New York NELAP Accreditation: 11982
Pennsylvania Certificate: 68-02927

SAMPLE SUMMARY

The sample(s) were received at 22.0°C.

This report contains analytical data associated with following samples only.

Sample ID	Laboratory ID	Matrix	Collection Date/Time	Receipt Date
1	25B0429-01	Paint Chip	2/20/2025 13:05	02/21/2025

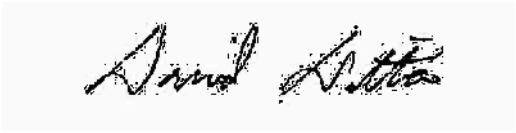
Analyte: Total Lead [EPA 6010D] **Analyst: SS**

Prep: EPA 3051A **Matrix: Paint Chip**

Laboratory ID	Client Sample ID	Result	RL	Units	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
25B0429-01	1	ND	0.10	%	1	BB52138	02/21/2025	02/24/2025 14:10	

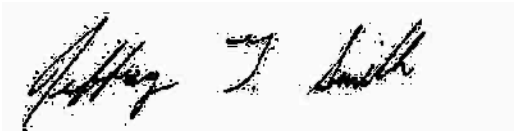
All questions related to this report should be directed to David Ditta, Timothy Fusco, or Jeffrey Smith at 203-377-9984.

Sincerely,



David Ditta
Laboratory Director

This technical report was reviewed by Jeffrey Smith



Project Manager

This report shall not be reproduced except in full, without the written approval of the laboratory

Report Comments:

Sample Result Flags:
E- The result is estimated, above the calibration range.
H- The surrogate recovery is above the control limits.
L- The surrogate recovery is below the control limits.
B- The compound was detected in the laboratory blank.
P- The Relative Percent Difference (RPD) of dual column analyses exceeds 40%.
D- The RPD between the sample and the sample duplicate is high. Sample Homogeneity may be a problem.
+- The Surrogate was diluted out.
*C1- The Continuing Calibration did not meet method specifications and was biased low for this analyte. Increased uncertainty is associated with the reported value which is likely to be biased low.
*C2- The Continuing Calibration did not meet method specifications and was biased high for this analyte. Increased uncertainty is associated with the reported value which is likely to be biased high.
*F1- The Laboratory Control Sample recovery is outside of control limits. Reported value for this analyte is likely to be biased on the low side.
*F2- The Laboratory Control Sample recovery is outside of control limits. Reported value for this analyte is likely to be biased on the high side.
*I- Analyte exceeds method limits from second source standard in Initial Calibration Verification (ICV). No directional bias.

All results met standard operating procedures unless indicated by a data qualifier next to a sample result, or a narration in the QC report.

For Percent Solids, if any of the following prep methods (3050B, 3540C, 3545A, 3550C, 5035 and 9013A) were used for samples pertaining to this report, the percent solids procedure is within that prep method.

Complete Environmental Testing is only responsible for the certified testing and is not directly responsible for the integrity of the sample before laboratory receipt.

ND is None Detected at or above the specified reporting limit
Reporting Limit (RL) is the limit of detection for an analyte after any adjustment made for dilution or percent moisture.
All analyses were performed in house unless a Reference Laboratory is listed.
Samples will be disposed of 30 days after the report date.

CET # : 25B0429
Project: Bridge 06955, Glen Street, Berlin
Project Number: 501871.8406.0710

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA 6010D in Solid	
Lead	CT,NY,PA

Complete Environmental Testing operates under the following certifications and accreditations:

Code	Description	Number	Expires
CT	Connecticut Public Health	PH0116	09/30/2026
NY	New York Certification (NELAC)	11982	04/01/2025
PA	Pennsylvania DEP	68-02927	05/31/2025

25B0429

TRC

21 GRIFFIN ROAD NORTH
WINDSOR, CONNECTICUT 06095
TELEPHONE (860) 298-9692
FAX (860) 298-6380

Edition: November 2013
Supersede Previous Edition

TCLP CHAIN OF CUSTODY

LAB ID #.

PROJECT NUMBER	PROJECT NAME	PARAMETERS	TURNAROUND TIME
501871.8406.0710	Bridge 06955 Glenstreet, Berlin, CT		✓ 24hr ☐ 48hr ☐ 3day ☐ 5day ☐ 24hr ☐ 48hr ☐ 3day ☐ 5day

INSPECTOR: (SIGNATURE)	(PRINTED)
David Heelon	David Heelon

FIELD SAMPLE NUMBER	DATE	TIME	TYPE COMP	TYPE GRAB	SAMPLE LOCATION	RCRA Pb	RCRA Pb, AS, CR, CD	8 RCRA Metals	TCLP Pb	SPLP Pb	Total Lead	MATERIAL
1	2/20/25	1305		✓	Pipe to east of Bridge						✓	Black paint-like coating on pipe.

Relinquished by: (Signature)	Date:	Received by: (Signature)	Relinquished by: (Signature)	Date:	Received by: (Signature)
David Heelon	2/20/25	2/21/25 0755		2/21/25	
(Printed) David Heelon	Time: 1410	(Printed) GREG GILDAY	(Printed) GREG GILDAY	Time:	(Printed)

Send results to email: Sarienti@trccompanies.com & dheelon@trccompanies.com

Page 1 of 1

Lead Based Paint Measurement Summary Table

Device(s) : Niton XLP301-A (Serial #24792) X Ray Fluorescence (XRF) Spectrum Analyzer
Client : ConnDOT
Site : Bridge 06955
Project # : 501871.8406.0710
Date(s) : 2/20/2025
Inspector : Chris Rekofsky

Number	Type	Bridge No.	Side	Structure	Material	Color	Condition	Reading (mg/cm^2)	Precision (mg/cm^2)	Depth Index	Duration (sec)	Date/Time
1	Shutter Calibration	06955						2.8	0.0		116.21	2/20/2025 13:15
2	Calibration	06955						0.4	0.1	1.23	3.0	2/20/2025 13:16
3	Calibration	06955						0.8	0.1	1.15	5.52	2/20/2025 13:17
4	Calibration	06955						1.5	0.3	1.16	3.26	2/20/2025 13:17
5	Exterior	06955	East	pipe	Metal	Black	Defective	0.0	0.0	1.0	4.52	2/20/2025 13:24
6	Exterior	06955	East	pipe	Metal	Black	Defective	0.0	0.0	1.0	4.52	2/20/2025 13:24
7	Exterior	06955	East	pipe	Metal	Black	Defective	0.0	0.0	1.03	4.01	2/20/2025 13:25
8	Calibration	06955						0.3	0.1	1.08	3.77	2/20/2025 13:32
9	Calibration	06955						0.7	0.2	1.12	3.01	2/20/2025 13:32
10	Calibration	06955						1.5	0.3	1.15	3.26	2/20/2025 13:32

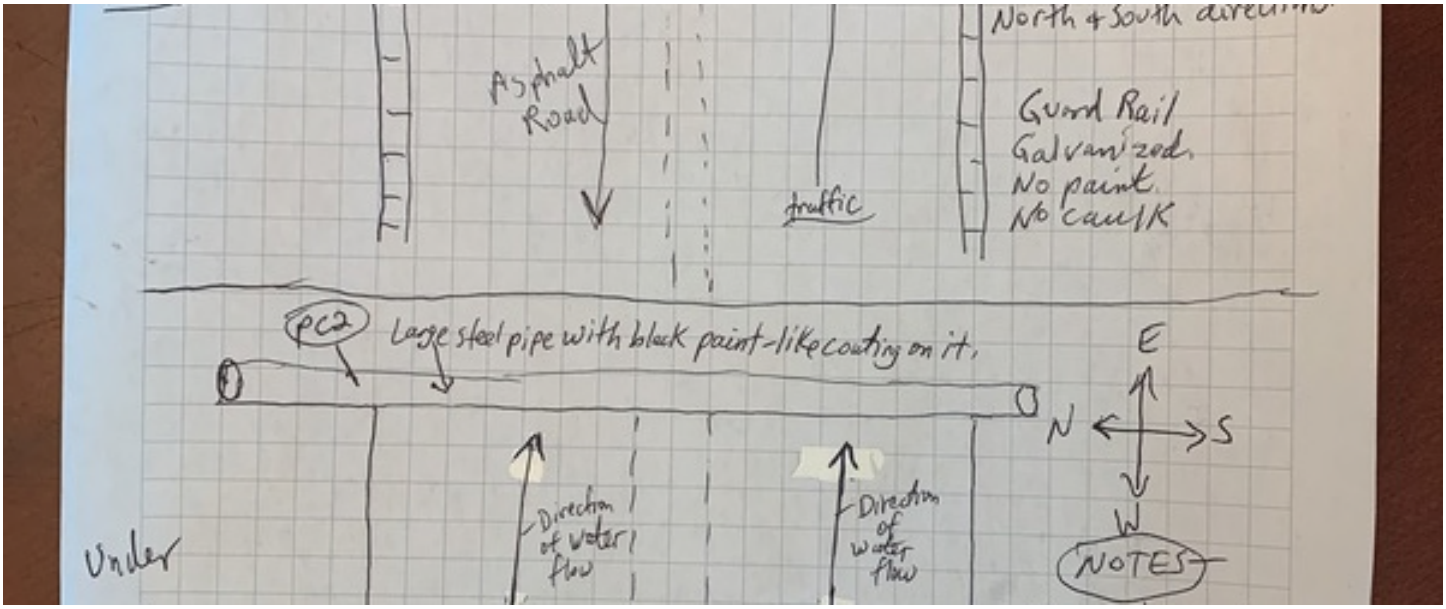
Lead paint includes paint found to contain **any detectable** amount of lead
by Atomic Absorption Spectrophotometry (AAS) or X-Ray Fluorescence (XRF).

Side A = Street side; Sides B,C,D follow clockwise

SIH - WinSIH HBM Survey

ConnDOT, Bridge 06955; Berlin, CT, Glen Street Berlin CT US

2/20/2025, 7:31:04 PM EST



CREATED

2/20/2025, 9:31:07 AM EST
by David Heelon

UPDATED

2/20/2025, 7:31:04 PM EST
by Christopher Rekofsky

STATUS

Complete

ASSIGNED TO

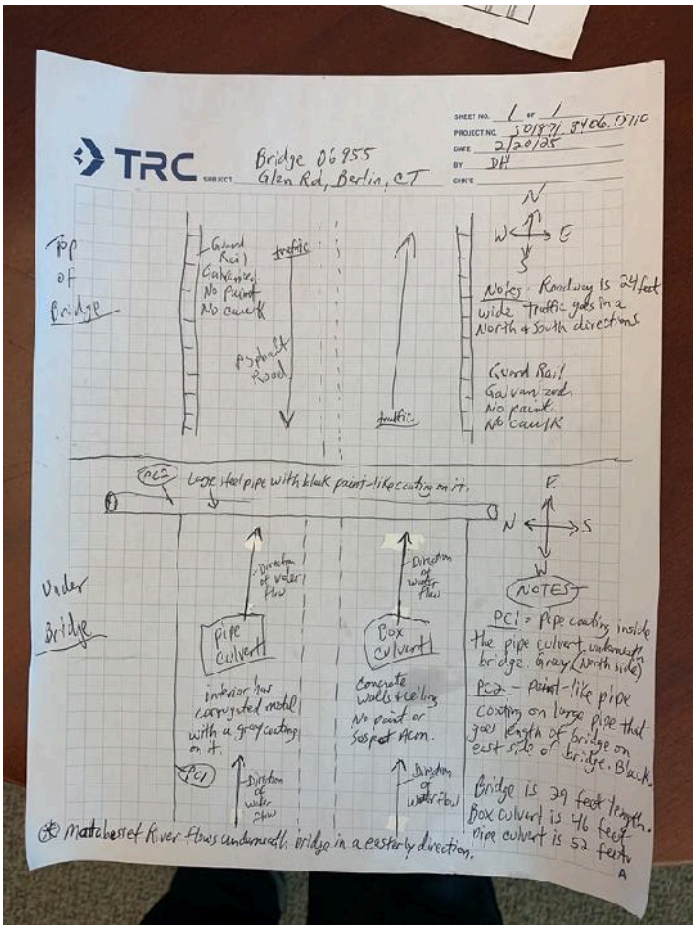
No Assignment

POWERED BY Fulcrum WWW.FULCRUMAPP.COM

JOB INFORMATION

Site Name	Bridge 06955; Berlin, CT
Address	Glen Street Berlin CT US
TRC Project Number	501871.8406.0710
Project Manager	Erik Plimpton, Stephen Arienti
Inspector(s)	David Heelon, Chris Rekofsky
Client	ConnDOT
Type of Asbestos Survey	Reno/Demo

Site Sketch Diagrams



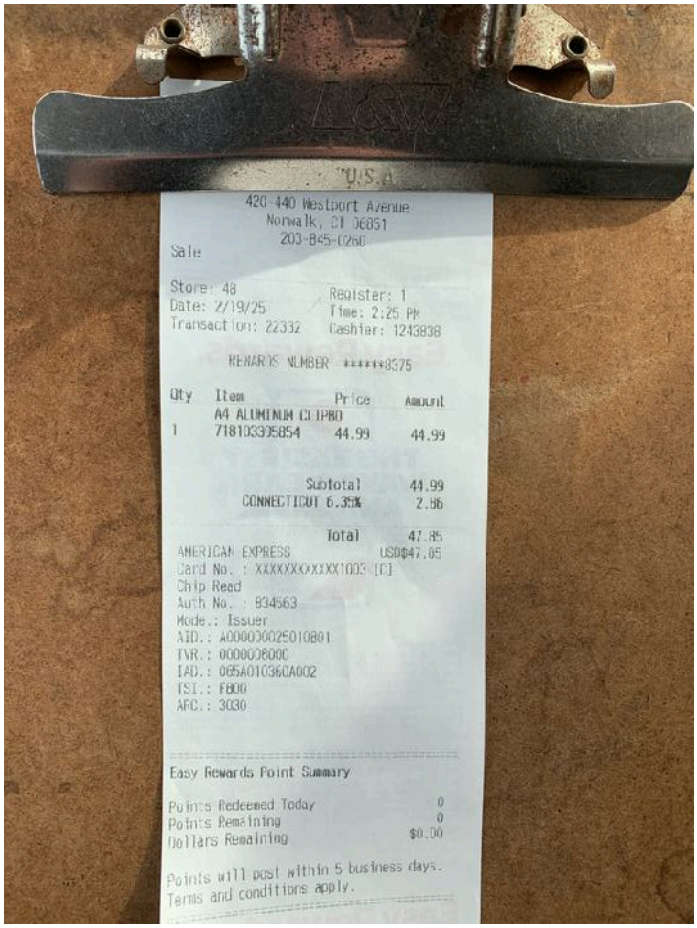
Additional Analysis for NOB Materials (Calc)	TEM NY NOB 198.4
PLM Turnaround Time (TAT)	24-hour
TEM Turnaround Time (TAT)	24-hour
Date	February 20, 2025
General Notes	

POWERED BY Fulcrum WWW.FULCRUMAPP.COM

Overview Photo

POWERED BY Fulcrum WWW.FULCRUMAPP.COM

No ACM within crack



U.S.A

420-440 Westport Avenue
Norwalk, CT 06851
203-845-0260

Sale

Store: 48 Register: 1
Date: 7/19/25 Time: 2:25 PM
Transaction: 22332 Cashier: 1243838

REWARDS NUMBER ******8575

Qty	Item	Price	Amount
	A4 ALUMINUM CLIPBD		
1	718103395854	44.99	44.99

Subtotal 44.99
CONNECTICUT 6.35% 2.86

Total 47.85
AMERICAN EXPRESS USD$47.85
Card No. : XXXXXXXXXXXX1005 [C]
Chip Read
Auth No. : 834563
Mode.: Issuer
AID.: A0000000250I0801
TVR.: 0000008000
IAD.: 065A01036CA002
TSI.: E800
ARC.: 3030

Easy Rewards Point Summary

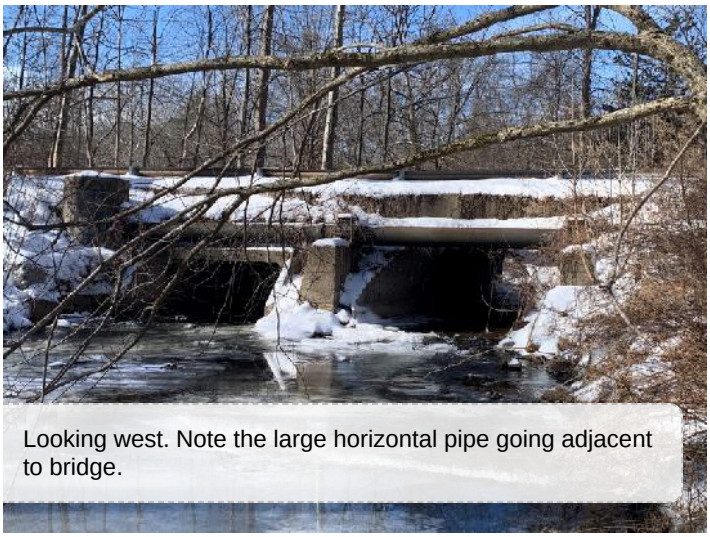
Points Redeemed Today 0
Points Remaining 0
Dollars Remaining $0.00

Points will post within 5 business days.
Terms and conditions apply.

No ACM within home

POWERED BY Fulcrum
WWW.FULCRUMAPP.COM

No ACM within hole



Looking west. Note the large horizontal pipe going adjacent to bridge.

POWERED BY Fulcrum WWW.FULCRUMAPP.COM

Looking south

Large steel pipe on east side of bridge

Box culvert under bridge looking east. Concrete with no paint or caulking.

Pipe Culvert tunnel under bridge looking east. Corrugated steel with gray coating on bottom part.

Options & Other Settings

Use auto-numbering?	No
Auto-fill gaps?	Yes
Alert user about missing site sketch?	Yes

POWERED BY Fulcrum WWW.FULCRUMAPP.COM

SURVEYS PERFORMED	Asbestos, XRF, Hazardous Materials Inventory, TCLP Sampling, Bridge/Signs/Light Pole/Traffic Signal Items

Asbestos Survey

Materials & Samples (2 Items)

Materials & Samples - 1. (2) Samples #1–2: PC1–Coating inside pipe of the pipe culvert

Sample Information

Asbestos Samples (2 Items)

Asbestos Samples - 1. Sample #1: PC1…Under bridge inside pipe culvert

Sample Number	1
Sample Location	Under bridge inside pipe culvert
Asbestos Bulk Analysis	PLM EPA 600/R93/116
Grab or Composite	Grab
Date	February 20, 2025
Time	11:50
Sample Location Photo	

Asbestos Samples - 2. Sample #2: PC1…Under bridge inside pipe culvert

Sample Number	2
Sample Location	Under bridge inside pipe culvert
Asbestos Bulk Analysis	PLM EPA 600/R93/116
Grab or Composite	Grab
Date	February 20, 2025
Time	11:52
Sample Location Photo	

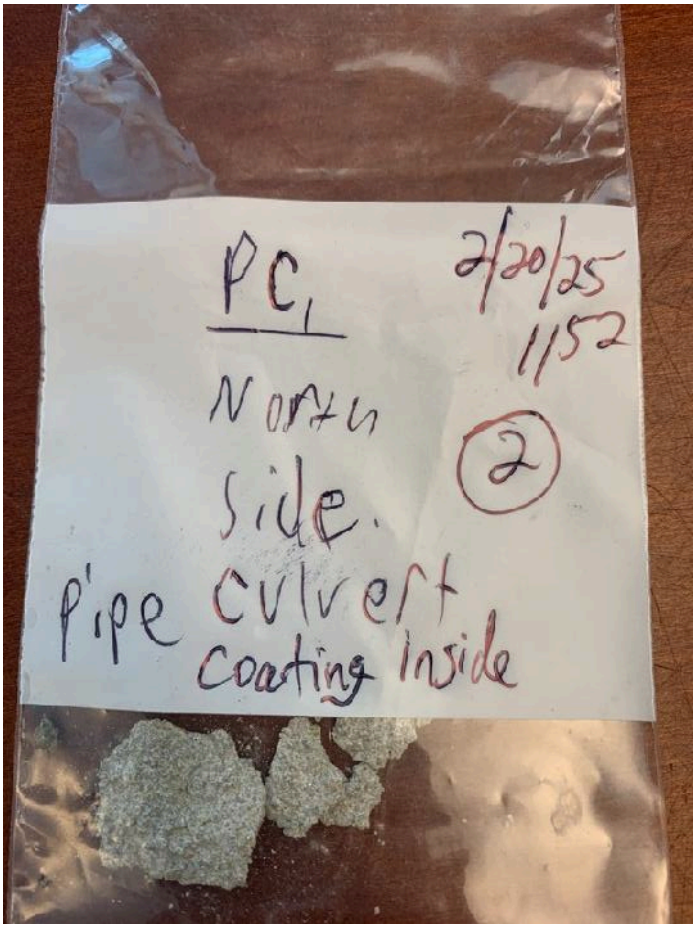
Material Information

Sampled or Assumed?	Sampled
Material Acronym	PC1

POWERED BY Fulcrum WWW.FULCRUMAPP.COM

Material Description	Coating inside pipe of the pipe culvert
Material Color	Light Grey

Representative Photos



Analyze by layer?	No
Is material non-friable organically bound (NOB)?	Yes
Homogeneous Area	
Total Approximate Quantity	
Notes	

Materials & Samples - 2. (2) Samples #3–4: PC2–Coating on large pipe to east of bridge

Sample Information

Asbestos Samples (2 Items)

Asbestos Samples - 1. Sample #3: PC2…On pipe, east of bridge

Sample Number	3

POWERED BY Fulcrum WWW.FULCRUMAPP.COM

Sample Location	On pipe, east of bridge
Asbestos Bulk Analysis	PLM EPA 600/R93/116
Grab or Composite	Grab
Date	February 20, 2025
Time	12:42
Sample Location Photo	

Asbestos Samples - 2. Sample #4: PC2…(no location provided yet)

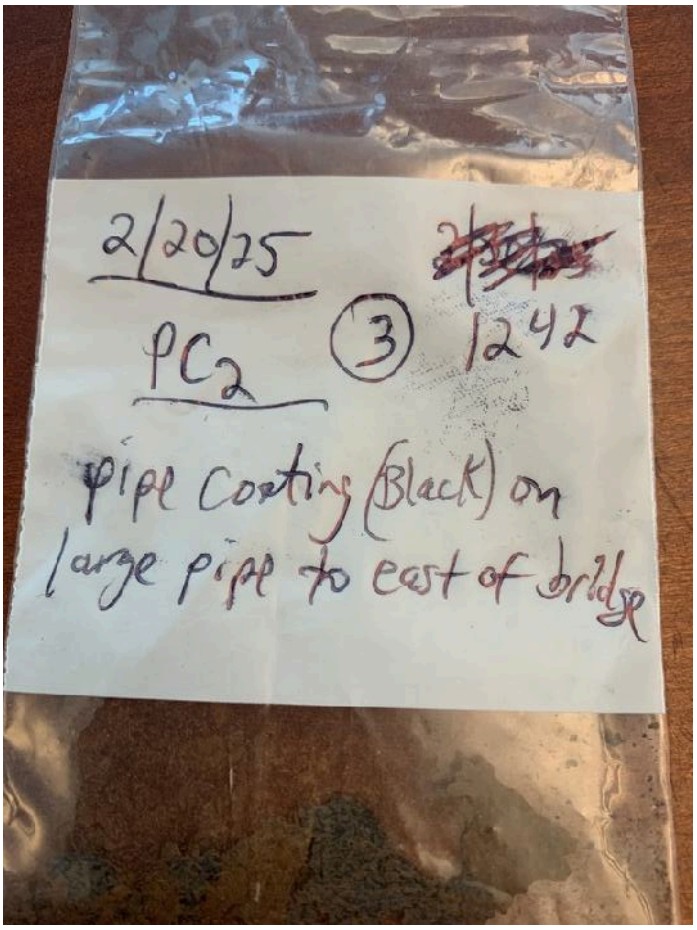
Sample Number	4
Sample Location	
Asbestos Bulk Analysis	PLM EPA 600/R93/116
Grab or Composite	Grab
Date	February 20, 2025
Time	12:44
Sample Location Photo	

Material Information

Sampled or Assumed?	Sampled
Material Acronym	PC2
Material Description	Coating on large pipe to east of bridge
Material Color	Black

POWERED BY Fulcrum WWW.FULCRUMAPP.COM

Representative Photos



POWERED BY Fulcrum WWW.FULCRUMAPP.COM

Analyze by layer?	No
Is material non-friable organically bound (NOB)?	Yes
Homogeneous Area	
Total Approximate Quantity	
Notes	

XRF Survey

Niton XRF Model No.	24792
XRF Survey Completed	Yes
XRF Data Downloaded	Yes
XRF Shots >1.0 on non-metallic building materials	No
Date Data Downloaded	February 20, 2025

HAZMAT Inventory

Inventory Areas

TCLP/SPLP/Total Lead Survey

Samples (1 Item)

Samples - 1. Black coating on large pipe to east of bridge

POWERED BY Fulcrum WWW.FULCRUMAPP.COM

TCLP/SPLP/Total Lead Sample Description	Black coating on large pipe to east of bridge

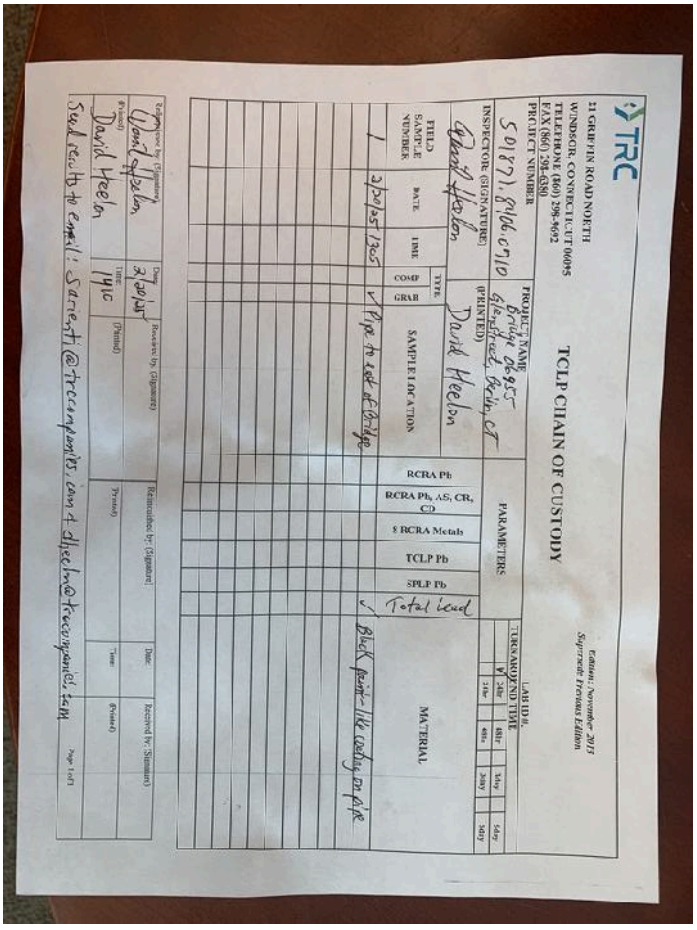
TCLP/SPLP/Total Lead Components

Type of Analysis	Total Lead
Sample Number	1
Grab or Composite	Grab
Date	February 20, 2025
Time	13:05
TCLP/SPLP/Total Lead Notes	

POWERED BY Fulcrum WWW.FULCRUMAPP.COM

TCLP/SPLP/Total Lead Photos

POWERED BY Fulcrum WWW.FULCRUMAPP.COM



TRC

21 GRIFFIN ROAD NORTH
WINDSOR, CONNECTICUT 06095
TELEPHONE (860) 298-9692
FAX (860) 298-6399
PROJECT NUMBER

TCLP CHAIN OF CUSTODY

Effective: November 2013
Supersedes Previous Edition

PROJECT NAME: Bridge @ 95 Glastonbury, Berlin, CT
INSPECTOR (SIGNATURE): David Heelon
(PRINTED): David Heelon
LAB I.D.#:
TURNAROUND TIME: 1 Day | 2 Day | 48hr | 3 Day | 4 Day | 2 Week | 3 Week

FIELD SAMPLE NUMBER	DATE	TIME	TYPE: COMP	TYPE: GRAB	SAMPLE LOCATION	PARAMETERS: RCRA Pb	RCRA Pb, AS, CR, CD	8 RCRA Metals	TCLP Pb	SPLP Pb	MATERIAL
1	3/20/25	1305		✓	Pipe to east of bridge					✓ Total Lead	Black paint-like coating on pipe

Relinquished by: (Signature) — Date: 3/20/25 — Time: 1410 — Received by: (Signature)
(Printed) David Heelon — (Printed)
Relinquished by: (Signature) — Date — Time — Received by: (Signature)
(Printed) — (Printed)
Turnaround Time Requested (TAT): (Please circle) Normal / Two Day / One Day
Data Package Options (Circle One): Summary / QC Summary / Full Data Package / State Specific
Special Instructions: Send results to email: Sarrienti@trccompanies.com, dheelon@trccompanies.com
Page 1 of 1

POWERED BY Fulcrum WWW.FULCRUMAPP.COM

Bridge/Signs/Light Pole/Traffic Signal Item Inventory

Items (1 Item)

Items - 1. Bridge 06955

Bridge/Sign/Light Pole/Traffic Signal No.	Bridge 06955
General Notes	
Accessibility	Accessible
Paint on Structure (s)?	Yes
Paint on what Components/Structure(s)?	Large pipe to east of bridge (is separate from bridge)
Suspect Asbestos Containing Materials Identified on Structure	Yes
Guano Present?	No
Homeless Activity	No
Bloodborne Pathogen Concerns?	No
Mice/Mouse Nests/Droppings	No

LAB & SAMPLE SUBMISSION INFO

Signature

Signed 2/20/2025, 2:15:30 PM EST

Asbestos Bulk Samples

Remarks to be added to the CoC	
Asbestos samples submitted to TRC lab?	Yes
Date Submitted to Lab	February 20, 2025
Asbestos bulk sample CoC data electronically sent to lab yet?	Yes
Asbestos bulk sample results reviewed?	No

POWERED BY Fulcrum WWW.FULCRUMAPP.COM

TCLP Samples

TCLP/SPLP Samples Submitted to Lab	Yes
TCLP/SPLP Samples Submitted To:	CET
Date Submitted to Lab	February 20, 2025

REPORT CREATION

Select one or more documents below to be generated. Once completed in the cloud, they will be sent to the listed email address.	
NOTE: Asbestos bulk sample CoC data must now be sent electronically to the lab by selecting "Asbestos chain-of-custody - Send to Lab" from the list below.	
What documents should be generated?	Asbestos chain-of-custody, Asbestos chain-of-custody - Send to Lab
Generate Documents	

PROJECT STATUS TRACKING

Has this survey been completed?	Yes
Has the report been written?	No
Has the report been reviewed?	No

POWERED BY Fulcrum WWW.FULCRUMAPP.COM

PROJECT DESCRIPTION
Project Number: 0007-0266
Town: Berlin, Connecticut
Bridge Number: 06955
Glen Street over Mattabesset River

Existing Conditions

The existing bridge was constructed in 1957 and consists of a southerly pre-cast concrete box culvert with a 12 foot span and a 5-foot rise and a northerly corrugated steel arch pipe culvert with a 11-foot 7-inch span and a 7-foot 5-inch rise. The structure length of the bridge is 29-feet while the length of the box culvert is approximately 46-feet and the length of the pipe culvert is approximately 52 feet. The bridge carries two travel lanes in a north-south direction over a roadway with a width of 24 feet while the Mattabesset River flows in an easterly direction under the bridge.

The concrete box culvert is currently rated to be in Good Condition with the roof and walls exhibiting transverse hairline cracks open up to 0.010 inches and roof joints exhibiting active leakage, light to heavy efflorescence, vertical misalignment up to 1 inch and joints open up to 1 ¼ inch. The culvert floor exhibits several random areas with light scale.

Based on recent emergency repairs completed in 2022 which included installation of concrete invert liner and steel sheet piling as cut-off walls at the inlet and outlet, the steel corrugated arch pipe is also rated to be in Good condition with bolted connections at the seams exhibiting light rust. Prior to the emergency repairs, the steel pipe arch culvert was rated to be in Critical Condition due to presence of extensive section loss and perforations in the invert and corner plates, infiltration of backfill material and distortion of the culvert shape. Based on comments from and a field meeting with DOT's Bridge Safety Inspectors in October 2021 (after Hurricane Ida), the Town completed emergency repairs in early 2022 to help stabilize the Arch Pipe invert until a full bridge replacement could be completed. However, the bridge continues to be posted for a 7-ton rating for all vehicles.

Purpose and Need Statement

The purpose of this project is to address the deficiencies in this bridge identified by recent inspections. Even though recent repairs have been performed to this bridge, the repairs are considered to be temporary in nature until a permanent replacement structure can be constructed.

Proposed Project

It is recommended that the existing bridge be removed and replaced with either a pre-cast concrete box culvert or a pre-cast 3-concrete sided rigid frame. The new bridge will provide a 24-foot minimum roadway width and the bridge rail system will comprise of either a concrete parapet or an open metal bridge rail system meeting current standards. The bridge will be designed to carry all applicable design loads based on current codes.

The approach roadway will be reconstructed, and new approach guiderails will be provided. No roadway realignment is anticipated, but the reconstruction would likely extend to the intersection with Robindale Drive to the North. An 18" diameter water line is present on the outlet side of the bridge and a gas main is present below the roadway. Both the utilities will require temporary support or relocation during construction. Additional utility modifications or relocations will be coordinated as necessary.

The presence of local detour routes and current traffic volumes do not require the existing bridge to remain open to traffic during construction. The new structure can be constructed in one season under a full detour, saving construction time and cost.

Site Information

The Mattabesset River flows below Bridge No. 06955 in a west to east direction. The project site is located within the Mattabesset River subregional drainage basin (#4600) of the Mattabesset regional drainage basin (#46). The bridge is located within Special Flood Hazard Zone AE according to FEMA Flood Insurance Rate Map #09003C0606F (effective date September 26, 2008).

Cultural Resources

This bridge is located within a residential zoning district in the Town of Berlin. This zone is defined as Single Family Residential (R-21) by a March 10, 2016, Town of Berlin Zoning map. The vicinity of the bridge is primarily residential dwellings and forested land.

The bridge is not located within any areas of historical significance according to the National Register of Historic Places Map (September 2020). According to the EPA's Environmental Justice Screening and Mapping Tool (Version 2020), there are no environmental or demographic indicators of concern in the project area.

Wetland and Environmental Resources

According to the National Wetlands Inventory, Mattabesset River is a riverine habitat (R5UBH), but it is worth noting that the project site is in close proximity to freshwater forested/shrub wetland (PFO1E). Wetlands will be delineated for this project in addition to what has previously been delineated for performing emergency repairs. Bridge No. 06955 is located in the Mattabesset River subregional drainage basin (4600). The bridge is not located within a regulated Aquifer Protection Area according to the CT DPH December 2021 mapping.

The project is not located in a Natural Diversity Database (NDDB) area per the June 2022 mapping. According to the U.S Fish and Wildlife Service Information for Planning and Consultation (IPaC) resource, the Northern Long-eared Bat and the Monarch Butterfly is a species that may be potentially affected by activities in this location. However, the project is not located in a critical habitat.

Ground disturbance is anticipated to be less than one acre.

AERIAL PHOTOGRAPH

EXISTING SITE PHOTOGRAPHS

Bridge No. 06955, East (Downstream) Elevation. The southerly culvert is a concrete box culvert while the northerly culvert is a corrugated steel pipe arch. Also, note presence of Water Main.

Glen Street looking North

Glen Street looking South

Mattabesset River looking downstream

Mattabesset River looking upstream

Bridge No. 06955 inlet. Note recent emergency repairs including concrete invert liner at pipe arch culvert and sheet piling cut off walls.

Bridge No. 06955 outlet

Inside view of Concrete Box Culvert

Condition of SE Wingwall with deteriorated concrete

Inside view of pipe arch culvert with recent concrete invert liner.

Wetland flag from Emergency Repairs found OHW #1

DOWN TO EARTH CONSULTING, LLC
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

FINAL DESIGN GEOTECHNICAL ENGINEERING REPORT

REPLACEMENT OF BRIDGE NO. 06955
GLEN STREET OVER MATTABESSET RIVER
BERLIN, CONNECTICUT

STATE PROJECT NO. 007-266

Prepared for:

Jacobs Engineering Group, Inc.
100 Great Meadow Road, Suite 707
Wethersfield, Connecticut 06109

Prepared by:

Down To Earth Consulting, LLC
27 Siemon Company Drive #363W
Watertown, Connecticut 06795

July 2025
File No. 0354-001.00

DOWN TO EARTH CONSULTING, LLC
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

December 17, 2024 (rev. July 11, 2025)
File No. 0354-001.00

Mr. Brian W. Chamberlin, P.E.
Jacobs Engineering Group, Inc.
100 Great Meadow Road, Suite 707
Wethersfield, Connecticut 06109

Via email: brian.chamberlin@jacobs.com

Re: Final Design Geotechnical Engineering Report
Glen Street over Mattabesset River (Bridge No. 06955)
Berlin, Connecticut

Dear Mr. Chamberlin:

Down To Earth Consulting, LLC (DTE) is pleased to submit this revised geotechnical engineering report for the proposed Bridge No. 06955 replacement project that will span Glen Street over the Mattabesset River in Berlin, Connecticut. We appreciate this opportunity to work with you. Please call if you have any questions.

Sincerely,

Down To Earth Consulting, LLC

Thomas J. Orszulak, P.E.
Project Manager

Raymond P. Janeiro, P.E.
Reviewer/Principal

TABLE OF CONTENTS

1.0 INTRODUCTION 1
2.0 BACKGROUND 1
3.0 SUBSURFACE DATA 2
3.1 GENERAL SITE GEOLOGY 2
3.2 SUBSURFACE EXPLORATIONS 2
3.3 LABORATORY TESTING 2
4.0 SUBSURFACE CONDITIONS 3
4.1 SUBSURFACE PROFILE 3
4.1.1 Miscellaneous Fill 3
4.1.2 Sandy Gravel and Sand & Gravel (Borings B-3 and B-4) 3
4.1.3 Glacial Till (Borings B-1 and B-3) 3
4.1.4 Bedrock 3
4.2 GROUNDWATER 3
5.0 GEOTECHNICAL DESIGN RECOMMENDATIONS 4
5.1 FOUNDATIONS 4
5.2 RETAINING STRUCTURES 5
5.3 SEISMIC DESIGN 6
6.0 MATERIALS RECOMMENDATIONS 6
6.1 ON-SITE MATERIALS 6
6.2 BACKFILL MATERALS 6
7.0 CONSTRUCTION RECOMMENDATIONS 6
7.1 SUBGRADE PREPARATION 6
7.2 BEDROCK REMOVAL 6
7.3 TEMPORARY EXCAVATIONS 7
7.4 TEMPORARY GROUNDWATER CONTROL 7
8.0 REVIEW OF FINAL DESIGN, PLANS, AND SPECIFICATIONS 7
9.0 CONSTRUCTION QUALITY CONTROL 7
10.0 LIMITATIONS 8

APPENDICES

APPENDIX 1 – FIGURES
APPENDIX 2 – TEST BORING LOGS (BY OTHERS)
APPENDIX 3 – LABORATORY TESTING RESULTS (BY OTHERS)
APPENDIX 4 – SPECIAL PROVISIONS
APPENDIX 5 – LIMITATIONS

1.0 INTRODUCTION

Down To Earth Consulting, LLC (DTE) is pleased to submit this final design geotechnical engineering report for the proposed replacement of Bridge No. 06955 that will span Glen Street over the Mattabesset River in Berlin, Connecticut. Refer to Figures 1 and 2 (in Appendix 1) for the approximate site and bridge location, respectively.

Our geotechnical engineering services included: reviewing project plans, test boring logs (by others), laboratory testing results (by others), characterizing subsurface conditions within the project limits, performing geotechnical engineering analyses, and providing geotechnical design and construction recommendations for the proposed bridge replacement. Our services were performed in accordance with our October 7, 2024, agreement which was based in part on the scope of work Jacobs Engineering Group, Inc. (Jacobs) developed for this project. We were also provided with the following documents:

- *Structure Drawings, Replacement of Bridge No. 06955, Glen Street over Mattabesset River, Berlin, CT*, prepared by Jacobs, plot dated December 17, 2024;
- *Rehabilitation Study Report*, State Project No. 0007-0266, prepared by CHA Consulting, Inc. (CHA), dated February 2024; and
- *Preliminary Design Geotechnical Engineering Report,* Replacement of Bridge No. 06955*,* prepared by Freeman Companies, LLC (Freeman), dated February 12, 2024.

Our recommendations are based on load and resistance factor design and the following references:

- 2024 AASHTO LRFD Bridge Design Specifications
- The Connecticut Department of Transportation (CTDOT) Geotechnical Manual, 2005 edition (revised February 2020)
- CTDOT Bridge and Roadway Structures Design Manual, 1st Release – January 2025
- CTDOT Standard Specifications for Roads, Bridges, and Incidental Construction, Form 819.

Elevations (El.) stated in this report are in feet and based on the North American Vertical Datum of 1988 (NAVD 88). The coordinates are based on the Connecticut State Plane Coordinate System, NAD 1983. Elevations and locations were provided to DTE in the referenced documents.

2.0 BACKGROUND

The proposed bridge replacement is located on Glen Street over the Mattabesset River in Berlin, Connecticut. The existing structure is located approximately 0.1 miles south of the intersection of Glen Street and Robindale Drive. Based on available information, we understand that the existing bridge consists of two, 29-foot-long, culverts. The southerly culvert consists of a precast concrete box with a 12-foot span and a 5-foot rise. The northerly culvert consists of a corrugated steel pipe arch with an approximate 11.6-foot span and 7.4-foot rise. We understand that Town personnel recently completed repairs to the arch culvert generally consisting of concrete lining and installing steel sheet piling with grouted riprap at the inlet and outlet of the structure (for scour protection).

We understand that the project will generally consist of demolishing the existing structures and constructing two, new concrete box culverts with headwalls and cut-off walls for scour protection. The northerly culvert will have a 20-foot span with an 8-foot rise, while the southerly culvert will have a 20-foot span with a 5.5-foot rise. The western inlet will have flared wingwalls and the eastern outlet will have U-shaped wingwalls.

We understand that CHA completed a preliminary scour evaluation for the project but has recently stated that the proposed culvert structure does not need to be evaluated for scour based on guidance in the BRSDM.

3.0 SUBSURFACE DATA

3.1 GENERAL SITE GEOLOGY

Published surficial and bedrock geological map data (*1:24,000 scale, Geologic Map of the Meriden Quadrangle, Connecticut, Penelope M. Hanshaw, 1962;* and *Bedrock Geological Map of the Meriden Quadrangle, New Haven, Hartford, Penelope M. Hanshaw, 1968*) was reviewed. The surficial material within the Site area is mapped as alluvium deposits overlying kame terrace deposits (sands and gravels) and glacial till. The underlying bedrock is mapped as relatively shallow light brown shale and sandstone (East Berlin Formation). Gray, massive basalt (Holyoke Basalt Formation) is also mapped just north of the Site.

3.2 SUBSURFACE EXPLORATIONS

New England Boring Contractors, Inc. advanced four test borings (B-1 through B-4) between May 18 and 22, 2023. The borings were observed and logged by Freeman Companies, LLC (Freeman). Exploration locations are depicted on Figure 2 (Appendix 1) and the logs are included in Appendix 2. Exploration locations and elevations were provided by Freeman. Drive and wash drilling methods were used to advance the borings to depths of approximately 25 to 37 feet (approximate El. 103 to 91) below existing roadway levels.

Soil samples were obtained in the borings by split barrel sampling procedures and rock coring was performed at each boring location. Recovery and Rock Quality Designation (RQD) are presented in the logs. Recovery is defined as the length of core obtained expressed as a percentage of the total length cored. RQD is the total length of core pieces, 4 inches or greater in length, expressed as a percentage of the total length cored. RQD provides an indication of the quality of the rock mass and relative extent of foliations and rock mass jointing.

Groundwater levels were also measured and recorded on the boring logs. Stabilized groundwater readings were also obtained from an observation well that was installed during the exploratory program (B-3(OW)). Refer to Figure 2 for the approximate observation well location.

3.3 LABORATORY TESTING

Soil and rock samples were submitted by Freeman to Geotesting Express, Inc. of Acton, Massachusetts. Six soil samples were submitted for grain size analyses and two rock core samples were submitted for compressive strength testing. The results of the laboratory analyses (by others) are included in Appendix 3.

4.0 SUBSURFACE CONDITIONS

4.1 SUBSURFACE PROFILE

The subsurface conditions from the borings were generally consistent with published geologic mapping and generally consisted of Miscellaneous Fill over Sandy Gravel/Sand & Gravel and/or Glacial Till overlying Bedrock. A subsurface profile is included in Figure 3 (Appendix 1). The following is a more detailed description of the primary subsurface materials encountered at the site.

4.1.1 Miscellaneous Fill

Miscellaneous Fill (Fill) was encountered at each exploration below the existing pavement structure and extended about 10 to 14 feet below grade (approximate El. 117 to 114.5) in the borings. This stratum typically consisted of medium dense, red, fine to coarse sand with trace to some amounts (0 to 35%) of fine to coarse gravel and silt. The thickness, character, and consistency of the Fill will vary between boring locations.

4.1.2 Sandy Gravel and Sand & Gravel (Borings B-3 and B-4)

A Sandy Gravel deposit and a Sand & Gravel deposit were encountered below the Fill at Borings B-3 and B-4, respectively, and extended to about 20 feet below grade (approximate El. 108). This stratum typically consisted of loose to medium dense, red to red-brown, fine to coarse gravel with some to and amounts (35 to 45%) of fine to coarse sand and little amounts (10 to 20%) of silt.

4.1.3 Glacial Till (Borings B-1 and B-3)

A Glacial Till stratum was encountered below the Fill (at Boring B-1) and below the Sandy Gravel (at Boring B-3(OW)) and extended to depths between about 14 and 21 feet bgs (El. 114 to 107). The Glacial Till was about 1 to 2 feet thick (where encountered). This stratum typically consisted of very dense, gray, fine to coarse gravel with varying amounts of fine to coarse sand and silt.

4.1.4 Bedrock

Bedrock was cored at each boring location at depths ranging from about 15 to 27 feet below roadway levels (approximate El. 101 to 103 along the southern Site limits and approximate El. 110 to 113 along the northern Site limits). Bedrock was documented on the logs at depths of 1 to 7 feet above the reported coring depths. Coring may not have been attempted at these depths due to the inferred weathered/fractured condition of the bedrock. The core recoveries and RQDs ranged from 68% to 97% and 28% to 90%, respectively. Bedrock was classified as Basalt in the boring logs.

4.2 GROUNDWATER

Groundwater was measured at about 10 feet below roadway levels (approximate El. 118) in Boring B-3(OW). Groundwater was not recorded in the other borings likely due to the utilized drilling methods which introduced water into the borehole. Groundwater levels measured in the boreholes may not have had sufficient time to stabilize and should be considered approximate.

Groundwater levels will vary depending on factors such as temperature, season, precipitation, Mattabesset Brook levels, construction activity, and other conditions, which may be different from those at the time of these measurements.

5.0 GEOTECHNICAL DESIGN RECOMMENDATIONS

We offer the following geotechnical design recommendations based on the subsurface conditions encountered at the site, available project information, and the proposed construction.

5.1 FOUNDATIONS

We recommend that the proposed culvert and wingwalls be founded below the Miscellaneous Fill and be supported on a minimum of twelve inches of compacted bedding (Granular Fill) placed on undisturbed, Gravelly Sand, Glacial Till, or Weathered Rock/Bedrock (see Section 7.1 for subgrade preparation recommendations). The existing Fill is not considered suitable bearing material and must be excavated (and replaced as necessary) in the area of the proposed culvert and walls during site preparation. The Granular Fill or Crushed Stone should extend two feet beyond the sidewalls of the box culverts.

The cutoff and return walls should also bear on a minimum twelve-inch thick pad of Granular Fill. A geotextile fabric separation layer should be placed over subgrade soils prior to placing Crushed Stone.

Footings should be constructed at a minimum depth of 48-inches below proposed site grades (and preferably below potential scour depths). The minimum footing width should be 24-inches.

Based on the recommended bearing materials and anticipated loads, we estimate that the footings will undergo less than one inch of total settlement and less than a half inch of differential settlement. Settlements will occur as the loads are applied and are expected to be complete at the end of construction. DTE should be provided with the final foundation loads and geometries once they are available to verify the above bearing capacity and settlement estimates.

Assuming that the culverts and wingwalls are backfilled with Pervious Structure Backfill in accordance with CTDOT standards, we recommend the following static design parameters:

<u>General:</u>

- Total Unit Weight of Miscellaneous Fill = 120 pcf
- Total Unit Weight of Pervious Structure Backfill (above water table)= 125 pcf
- Total Unit Weight of Pervious Structure Backfill (below water table)= 130 pcf
- Total Unit Weight of Sandy Gravel/ Sand & Gravel Deposits = 125 pcf
- Total Unit Weight of Glacial Till = 135 pcf
- Total Unit Weight of Bedrock = 165 pcf

- Soil Angle of Internal Friction (Misc. Fill), (φ') = 30°
- Soil Angle of Internal Friction (Sandy Gravel/ Sand & Gravel Deposits), (φ') = 34°
- Soil Angle of Internal Friction (Glacial Till), (φ') = 36°

Bearing:

- Bearing Resistance Factor – Strength Limit State (φ_b) = 0.45 Culvert
  0.55 Wingwalls
- Nominal Bearing Resistance (Strength Limit State) =
  - 142 kips per square foot – Competent Bedrock*
  - 20 kips per square foot – Weathered Rock (AASHTO 10.6.3.2.1)
  - 15 kips per square foot – Natural Soils and/or Granular Fill
- Factored Bearing Resistance (Strength Limit State) = φ_b x Nominal Bearing Resistance
  **AASHTO 10.6.3.2.2 - Nominal Bearing Resistance is limited to 30 percent of the compressive strength of Class PCC 03340 (M.03.02). The actual nominal bearing resistance of competent bedrock is greater.*

- Bearing Resistance Factor – Service Limit State (φ_b) = 1.00
- Nominal Bearing Resistance (Service Limit State) =
  - 120 kips per square foot – Competent Bedrock (AASHTO Table C10.6.2.5.1-1)
  - 20 kips per square foot – Weathered Rock (AASHTO Table C10.6.2.5.1-1)
  - 4.5 kips per square foot – Natural Soils and/or Granular Fill
- Factored Bearing Resistance (Service Limit State) = φ_b x Nominal Bearing Resistance

Sliding:

- Coefficient of Friction for Sliding (AASHTO LRFD Table 3.11.5.3-1) =
  0.45 – precast concrete
  0.6 – mass concrete
- Sliding Resistance Factor (φ_τ) = 0.9 – precast concrete
  0.8 – mass concrete
- Coefficient of Friction for Soil Against Formed Wall (tan delta) = 0.40
- Coefficient of At-Rest Earth Pressure (K_o) = 0.43
- Coefficient of Active Earth Pressure (K_a) = 0.25 – level backfill
  0.38 – 2H:1V sloped backfill
- Earth pressure calculations should assume a surface surcharge of a minimum of 24 inches of soil depth or 250 psf.

Walls that are free to rotate at the top and are not braced (e.g., wingwalls) should be designed to resist an active earth pressure distribution. Braced walls (e.g., culvert barrel) should be designed to resist an at-rest earth pressure distribution.

DTE should be provided with the final foundation loads and geometries once they are available to verify the above bearing capacity and settlement estimate.

5.2 RETAINING STRUCTURES

Culvert and wingwall drainage should be designed to comply with ConnDOT Standards. In accordance with the BRSDM, subsurface drainage is not required for the culvert. Subsurface drainage (e.g., weep holes or structure underdrain) is required for the wingwalls and should be installed to discharge above the normal water levels.

5.3 SEISMIC DESIGN

In accordance with CTDOT and AASHTO (Section 4.7.4.1) guidance, the bridge and wingwalls do not need to be designed for seismic forces. We recommend adopting a Seismic Site Class "C" for the site. Based on the standard penetration test results, visual soil classification, and design peak ground acceleration at this locale, the saturated site soils are not susceptible to liquefaction.

6.0 MATERIALS RECOMMENDATIONS

6.1 ON-SITE MATERIALS

Excavated materials are not anticipated to be suitable for re-use as Granular Fill or Pervious Structure Backfill. On-site materials can be reused as General Fill for site grading purposes.

6.2 BACKFILL MATERALS

We recommend that backfill materials conform to the following CTDOT Standards:

- Granular Fill - CTDOT Standard Form 819, Section M.02.01
- Crushed Stone - Size No. 6 per CTDOT Standard Form 819, Section M.01.02
- Pervious Structure Backfill - CTDOT Standard Form 819, Section M.02.05

7.0 CONSTRUCTION RECOMMENDATIONS

7.1 SUBGRADE PREPARATION

All existing substructures must be removed in their entirety within the limits of the proposed culvert and associated structures. Miscellaneous Fill must be removed down to the level of firm, natural soil deposits and the resulting excavations must be backfilled up to the bottom foundation levels with either Granular Fill or Crushed Stone compacted in accordance with Form 819.

Excavation to subgrade elevations should be performed using a smooth-edged bucket to minimize possible disturbance to the subgrade. Any soft or loose zones identified during subgrade preparation should be excavated and replaced with compacted Granular Fill or Crushed Stone, as necessary, and as recommended by the Engineer.

Final excavations should not be made until the area is ready for Granular Fill/Crushed Stone placement. The base of footing excavations should be free of water, frost, ice, organic material, and loose soils prior to placing Granular Fill or Crushed Stone. Compressed air, or other equivalent methods, should be utilized to remove loose rock and any other deleterious materials from a bedrock subgrade prior to placing Granular Fill/Crushed Stone.

7.2 BEDROCK REMOVAL

We anticipate that isolated weathered rock and/or bedrock removal may be required to reach subgrade elevations for the northern portions of the cut-off walls and wingwall 2A/2B foundations. Boulders and weathered rock may be able to be removed with an excavator. For limited sound

bedrock removal, hydraulic splitters or air rams may be required. Blasting is not recommended. A draft Condition Survey Special Provision is included in Appendix 4.

7.3 TEMPORARY EXCAVATIONS

It appears that excavations up to about 15 feet deep will be required to accommodate construction of the culvert and associated structures. The Fill and natural site soils are classified as OSHA Class "C" soil and can be cut at a maximum one vertical to one and a half horizontal (1V:1.5H) slope up to a maximum excavation depth of 20 feet. These maximum slope and excavation depths assume no surcharge load (i.e., stockpiles, construction equipment, traffic, etc.) at the top of the excavations or groundwater seepage.

Care should be taken to not undermine the adjacent roads, sidewalks, and utilities. If excavations cannot be sloped in accordance with OSHA requirements or will potentially undermine adjacent structures, temporary excavation support systems will be required. Due to the shallow depth to bedrock, it is anticipated that the proposed excavations may be achieved with internally braced sheetpiles. Proposed TERS systems should be chosen and installed by the contractor and designed by a Professional Engineer registered in the State of Connecticut.

7.4 TEMPORARY GROUNDWATER CONTROL

Construction will likely occur below the adjacent river and groundwater levels. Water inflows will need to be temporarily controlled using closed cofferdams and sump pumps to allow construction of the bridge substructures in the dry. Cofferdams should be adequately sealed to prevent brook and groundwater from infiltrating into the excavations and have sufficient basal stability and pumping systems designed (e.g., filters) to prevent soil migration.

The construction dewatering system means and methods should be chosen by the contractor and designed by a Professional Engineer registered in the State of Connecticut. This should include providing a discharge water management plan that avoids endangering public health and nearby property and meets applicable local, state, and environmental regulations.

A draft Special Provision (Appendix 4) has been developed to account for the coincident construction of cofferdam, dewatering, and TERS on this project.

8.0 REVIEW OF FINAL DESIGN, PLANS, AND SPECIFICATIONS

When project plans and specifications are available they should be provided to DTE for review of conformance with our geotechnical recommendations. If any changes are made to the proposed bridge, the recommendations provided in this report will need to be verified by DTE for applicability.

9.0 CONSTRUCTION QUALITY CONTROL

We recommend that DTE make field observations of excavations and foundation construction to monitor compliance with our recommendations and project specifications. Specifically, we recommend field observation of excavations, removal of unsuitable materials, bedrock removal,

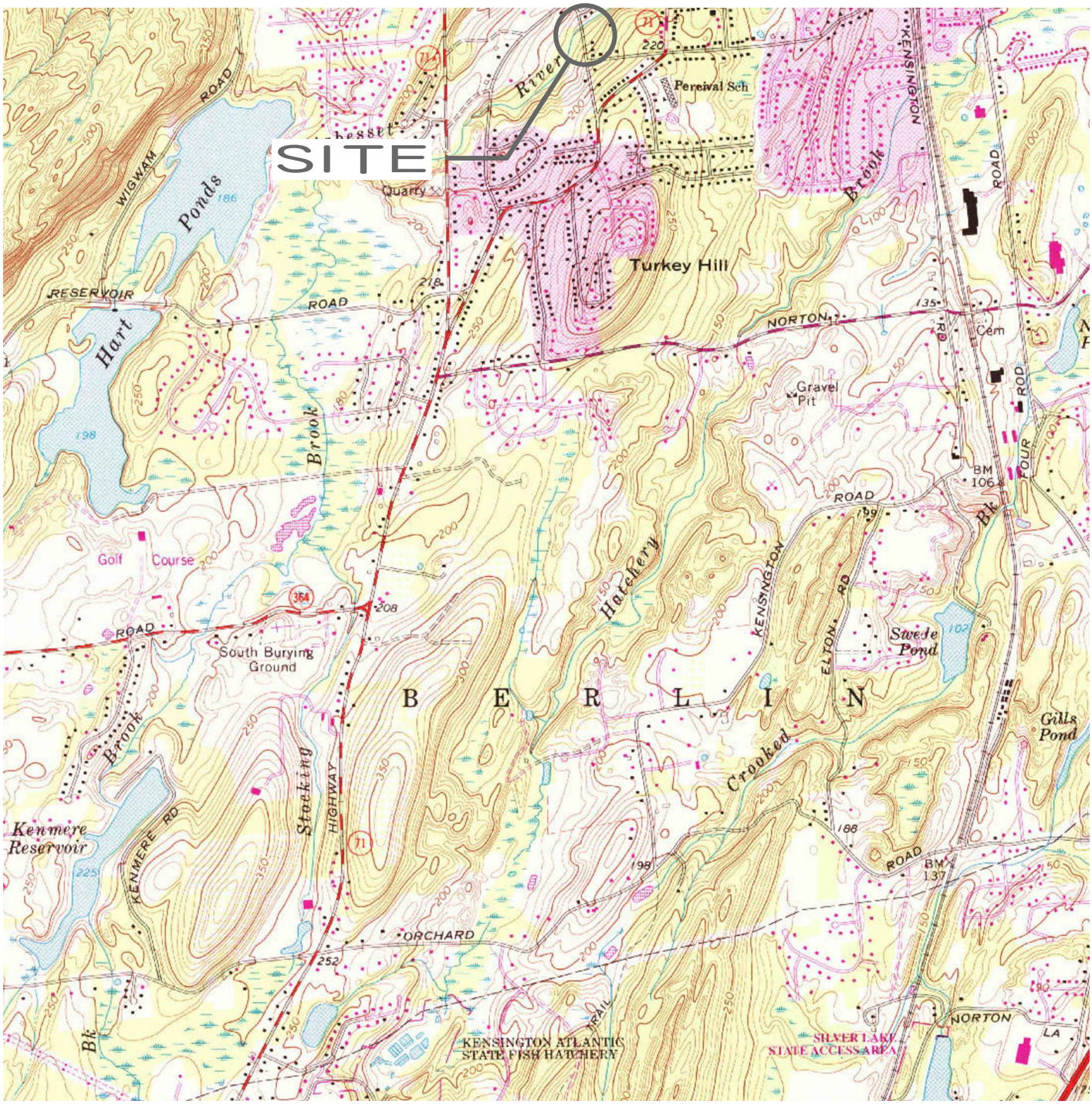
subgrade preparation, and Fill placement and compaction to monitor compliance with project specifications.

10.0 LIMITATIONS

This report is subject to the limitations included in Appendix 5.

APPENDIX 1 -

FIGURES



DOWN TO EARTH CONSULTING, LLC
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

27 SIEMON COMPANY DRIVE – SUITE 363W
WATERTOWN, CONNECTICUT 06795

DRAWN BY: TJO | REVIEWED BY: RPJ

QUADRANGLE LOCATION

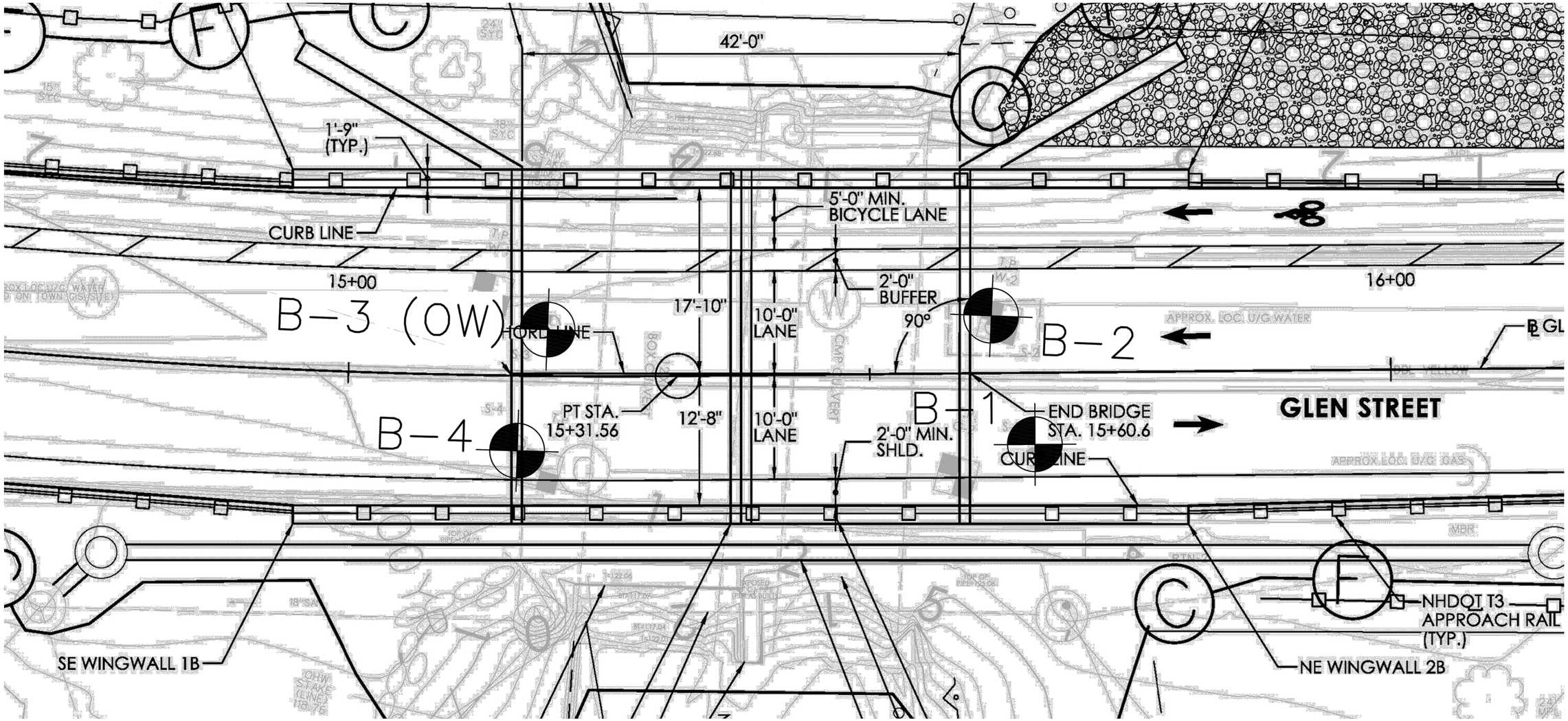
AREA PLAN
GLEN STREET OVER MATTABESSET RIVER
BRIDGE NO. 06955
BERLIN, CONNECTICUT

REFERENCE:
USGS TOPOGRAPHIC QUADRANGLE: MERIDEN, CT

SCALE 1"= 2,000'

2,000' 1,000' 0 2,000'

PROJECT NO. 0354-001.00
DATE: 11/14/24
FIGURE NO. 1



LEGEND:

B-1	TEST BORINGS
OW	MONITORING WELL

NOTES:
1. BASE PLAN PREPARED FROM PLANS PROVIDED BY CHA ON FEBRUARY 9, 2024.
2. EXPLORATION LOCATIONS WERE SURVEYED BY J. PELLETIER FROM CTDOT.
3. REFER TO THE TEXT AND APPENDICES FOR ADDITIONAL INFORMATION.

NOTES:
1) SITE AND EXPLORATION LOCATION PLAN WERE TAKEN FROM THE REPORT TITLED "PRELIMINARY DESIGN GEOTECHNICAL ENGINEERING REPORT, GLEN STREET OVER MATTABESSET RIVER, BERLIN, CONNECTICUT" PREPARED BY FREEMAN COMPANIES DATED FEBRUARY 12, 2024.

DESIGNED BY OTHERS						
DRAWN BY OTHERS						
CHECKED BY TJO						
APPROVED BY RPJ	NO.	DATE	REVISIONS	DRWN.	CHKD	APPVD

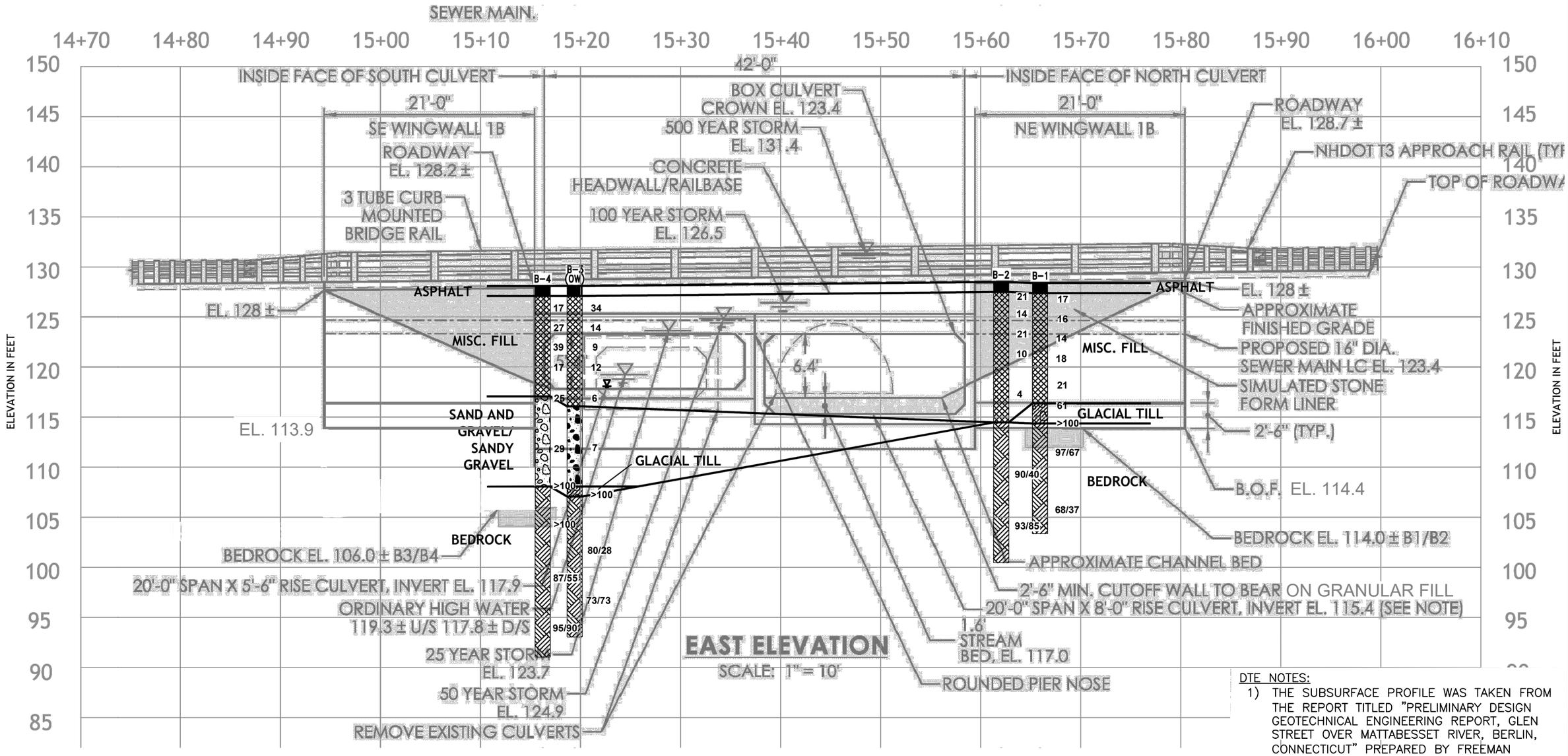
SCALE 1"= 10'
10' 5' 0 10'

DOWN TO EARTH CONSULTING, LLC
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING
27 SIEMON COMPANY DRIVE #363W
WATERTOWN, CONNECTICUT 06795

PROJECT
GLEN ST OVER MATTABESSET RIVER
BRIDGE NO. 06955
BERLIN, CONNECTICUT

DWG. TITLE.
SITE AND EXPLORATION LOCATION PLAN

DTE FILE NO. 0354-001.00
STATE PROJ. NO. 0007-0266
SCALE AS NOTED
DATE 11/14/24
FIGURE NO. 2



LEGEND

21	SPT N–VALUE
100/40	RECOVERY% / RQD%
▽	OBSERVED GROUNDWATER LEVEL

NOTE:

1) THE INTERPRETED STRATA BOUNDARIES INDICATED ARE KNOWN ONLY AT THE BORING LOCATIONS AND WILL VARY BETWEEN LOCATIONS
2) BASE PLAN PREPARED FROM PLANS PROVIDED BY CHA ON FEBRUARY 9, 2024.

DTE NOTES:

1) THE SUBSURFACE PROFILE WAS TAKEN FROM THE REPORT TITLED "PRELIMINARY DESIGN GEOTECHNICAL ENGINEERING REPORT, GLEN STREET OVER MATTABESSET RIVER, BERLIN, CONNECTICUT" PREPARED BY FREEMAN COMPANIES DATED FEBRUARY 12, 2024.

DESIGNED BY OTHERS							
DRAWN BY OTHERS							
CHECKED BY TJO	NO.	DATE		DRWN.	CHKD	APPVD	
APPROVED BY RPJ	REVISIONS						

SCALE 1"= 10'
10' 5' 0 10'

DOWN TO EARTH CONSULTING, LLC
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING
27 SIEMON COMPANY DRIVE #363W
WATERTOWN, CONNECTICUT 06795

PROJECT
GLEN ST OVER MATTABESSET RIVER
BRIDGE NO. 06955
BERLIN, CONNECTICUT

DWG. TITLE.
SUBSURFACE PROFILE

DTE FILE NO. 0354–001.00
STATE PROJ. NO. 0007–0266
SCALE AS NOTED
DATE 03/31/25
FIGURE NO. 3

APPENDIX 2 -

TEST BORING LOGS
(BY OTHERS)

Driller:	K. Smith	**Connecticut DOT Boring Report**		Hole No.:	B-1
Inspector:	M. Cyr	Town:	Berlin	Stat./Offset:	15+66/8
Engineer:	A. McCauliffe	Project No.:	007-266	Northing:	788145
Start Date:	5-18-23	Route No.:	Glen Street	Easting:	989978
Finish Date:	5-18-23	Bridge No.:	06955	Surface Elevation:	128.4
Project Description:	Glen Street Bridge 06955				
Casing Size/Type:	4-in. Casing	Sampler Type/Size:	1-3/8 inch ID	Core Barrel Type:	NX
Hammer Wt.:	300lb Fall: 30in.	Hammer Wt.:	140lb Fall: 30in.		
Groundwater Observations:	Not Recorded				

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0	S-1	27 10 7 7	24	8		Asphalt	ASPHALT, (0-1 feet)	
						Misc. Fill	Red f SAND, some c-f gravel, some silt	
	S-2	5 8 8 5	24	12			Red f SAND, some c-f gravel, some silt	125
5	S-3	7 7 7 7	24	8			Red f SAND, some silt, trace f gravel	
	S-4	4 8 10 11	24	14			Red f SAND, some c-f gravel, some silt	120
10	S-5	20 12 9 8	24	10			m-f c-f Red ~~c-f~~ GRAVEL and ~~f~~ SAND, some silt	
	S-6	7 34 27 87	24	18			Red f SAND, some c-f gravel, some silt, Top 9 inches	
						Glacial Till	Gray c-f GRAVEL, Bottom 9 inches	115
	S-7	50/3"	3	0		Bedrock	Gray c-f GRAVEL, little silt, From tip	
15	C-1		60	58	67		Gray, BASALT, fine, intensely fractured to moderately fractured, highly weathered, medium strong, 0° to 60° bedding angle, 3-3-3-2.5-3	110
20	C-2		60	41	37		Gray, BASALT, fine, intensely fractured to slightly fractured, highly weathered, medium strong, 0° to 75° bedding angle, 2-3.5-3-4.5-3.5	105
25							END OF BORING 25ft	

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test

Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 14ft Rock: 11ft No. of Soil Samples: 7 No. of Core Runs: 2	NOTES: DTE EDITS (BASED ON LAB TESTING RESULTS)	Sheet 1 of 1 SM-001-M REV. 1/02

Driller:	K. Smith/M. St. John	**Connecticut DOT Boring Report**		Hole No.:	B-2
Inspector:	M. Cyr	Town:	Berlin	Stat./Offset:	15+62/4
Engineer:	A. McCauliffe	Project No.:	007-266	Northing:	788138
Start Date:	5-19-23	Route No.:	Glen Street	Easting:	989967
Finish Date:	5-22-23	Bridge No.:	06955	Surface Elevation:	128.5
Project Description:	Glen Street Bridge 06955				
Casing Size/Type:	4-in. Casing	Sampler Type/Size:	1-3/8 inch ID	Core Barrel Type:	NX
Hammer Wt.:	300lb Fall: 30in.	Hammer Wt.:	140lb Fall: 30in.		
Groundwater Observations:	Not Recorded				

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0	S-1	23 12 9	18	12		Asphalt	ASPHALT, (0-1 feet)	
						Misc. Fill	Red f SAND, some c-f gravel, some silt (driller took 18" sample to begin next sample at an even interval)	
	S-2	6 7 7 6	24	12			m-f c-f Red ~~c-f~~ GRAVEL and ~~f~~ SAND, little silt	125
5	S-3	4 8 13 9	24	10			Red f SAND, some c-f gravel, some silt	
	S-4	6 6 4 5	24	13			Red f-c SAND, some c-f gravel, some silt	120
10	S-5	4 3 1 5	24	8			Red f-c SAND, some c-f gravel, some silt	
						Bedrock	Driller indicated start of bedrock due to an increase in drilling pressure needed	115
15							Driller indicated potential weathered or fractured rock based on drilling effort	
								110
20	C-1		60	54	40		Gray, BASALT, fine, intensely fractured to moderately fractured, completely weathered, medium strong, 0° to 45° bedding angle, 3-5-4-4.5-4	
								105
25								

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test

Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 14ft Rock: 14ft No. of Soil Samples: 5 No. of Core Runs: 2	NOTES: DTE EDITS (BASED ON LAB TESTING RESULTS)	Sheet 1 of 2 SM-001-M REV. 1/02

Driller:	K. Smith/M. St. John	**Connecticut DOT Boring Report**		Hole No.:	B-2
Inspector:	M. Cyr	Town:	Berlin	Stat./Offset:	15+62/4
Engineer:	A. McCauliffe	Project No.:	007-266	Northing:	788138
Start Date:	5-19-23	Route No.:	Glen Street	Easting:	989967
Finish Date:	5-22-23	Bridge No.:	06955	Surface Elevation:	128.5
Project Description:	Glen Street Bridge 06955				
Casing Size/Type:	4-in. Casing	Sampler Type/Size:	1-3/8 inch ID	Core Barrel Type:	NX
Hammer Wt.:	300lb Fall: 30in.	Hammer Wt.:	140lb Fall: 30in.		
Groundwater Observations:	Not Recorded				

Depth (ft)	SAMPLES: Sample Type/No.	SAMPLES: Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
25	C-2		60	56	85	Bedrock *(con't)*	Gray, BASALT, fine, highly fractured, completely weathered, medium strong, 0° to 30° bedding angle, 6-6-5-5-5	
							END OF BORING 28ft	100
30								
								95
35								
								90
40								
								85
45								
								80
50								

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test

Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 14ft Rock: 14ft	NOTES:	Sheet 2 of 2
No. of Soil Samples: 5 No. of Core Runs: 2		SM-001-M REV. 1/02

Connecticut DOT Boring Report

Driller:	M. St. John			Hole No.:	B-3 (OW)
Inspector:	M. Cyr	Town:	Berlin	Stat./Offset:	15+19/5
Engineer:	A. McCauliffe	Project No.:	007-266	Northing:	788097
Start Date:	5-19-23	Route No.:	Glen Street	Easting:	989978
Finish Date:	5-19-23	Bridge No.:	06955	Surface Elevation:	128.1

Project Description: Glen Street Bridge 06955

Casing Size/Type: 3-in. Casing	Sampler Type/Size: 1-3/8 inch ID	Core Barrel Type: NX
Hammer Wt.: 300lb Fall: 30in.	Hammer Wt.: 140lb Fall: 30in.	

Groundwater Observations: @10 ft ATD, @10 ft after 24 hrs

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Asphalt	ASPHALT, (0-1 feet)	
	S-1	15 19 15 12	24	4		Misc. Fill	Red c-f SAND, little c-f gravel, trace silt, trace asphalt	
	S-2	14 8 6 6	24	14			Red c-f SAND, little c-f gravel, little silt	125
5	S-3	2 4 5 6	24	10			Red c-f SAND, little c-f gravel, little silt	
	S-4	4 5 7 7	24	6			Red c-f SAND, little c-f gravel, little silt	120
10	S-5	2 2 4 3	24	7			Red f SAND, some f-m gravel, some silt	
						Sandy Gravel		115
15	S-6	3 4 3 5	24	6			c-f Red c-f GRAVEL, little ~~f~~ sand, little silt	
								110
20	S-7	7 38 70/4"	16	4		Glacial Till	Gray c GRAVEL	
						Bedrock	Driller indicated start of bedrock due to an increase in drilling pressure needed	
								105
25								

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test

Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in

Earth: 21ft Rock: 14ft

No. of Soil Samples: 7 No. of Core Runs: 2

NOTES: Well Construction: Well set at 20 ft, screen from 10-20 feet, Riser from 0-10 feet; Sand from 8-20 feet, Betonite from 5-8 feet, Spoils from 1-5 feet, Roadbox and concrete from 0-1 feet.

DTE EDITS (BASED ON LAB TESTING RESULTS)

Driller:	M. St. John	**Connecticut DOT Boring Report**		Hole No.:	B-3 (OW)
Inspector:	M. Cyr	Town:	Berlin	Stat./Offset:	15+19/5
Engineer:	A. McCauliffe	Project No.:	007-266	Northing:	788097
Start Date:	5-19-23	Route No.:	Glen Street	Easting:	989978
Finish Date:	5-19-23	Bridge No.:	06955	Surface Elevation:	128.1
Project Description:	Glen Street Bridge 06955				
Casing Size/Type:	3-in. Casing	Sampler Type/Size:	1-3/8 inch ID	Core Barrel Type:	NX
Hammer Wt.:	300lb Fall: 30in.	Hammer Wt.:	140lb Fall: 30in.		
Groundwater Observations:	@10 ft ATD, @10 ft after 24 hrs				

Depth (ft)	SAMPLES: Sample Type/No.	SAMPLES: Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
25						Bedrock *(con't)*		
	C-1		60	48	28		Gray, BASALT, fine, intensely fractured, slightly weathered, medium strong, 0° to 75° bedding angle, Seams with orange discoloration; 4-4-4-4-4.5	100
30								
	C-2		60	44	73		Gray, BASALT, fine, highly fractured, slightly weathered, medium strong, 0° to 45° bedding angle, 5-6-5-5-5	95
35							END OF BORING 35ft	
								90
40								
								85
45								
								80
50								

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test

Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 21ft Rock: 14ft No. of Soil Samples: 7 No. of Core Runs: 2	NOTES: Well Construction: Well set at 20 ft, screen from 10-20 feet, Riser from 0-10 feet; Sand from 8-20 feet, Betonite from 5-8 feet, Spoils from 1-5 feet, Roadbox and concrete from 0-1 feet.	Sheet 2 of 2 SM-001-M REV. 1/02

Connecticut DOT Boring Report

Driller:	M. St. John			Hole No.:	B-4
Inspector:	M. Cyr	Town:	Berlin	Stat./Offset:	15+16/7
Engineer:	A. McCauliffe	Project No.:	007-266	Northing:	788097
Start Date:	5-18-23	Route No.:	Glen Street	Easting:	989990
Finish Date:	5-18-23	Bridge No.:	06955	Surface Elevation:	128.1

Project Description: Glen Street Bridge 06955

Casing Size/Type: 3-in. Casing	Sampler Type/Size: 1-3/8 inch ID	Core Barrel Type: NX
Hammer Wt.: 300lb Fall: 30in.	Hammer Wt.: 140lb Fall: 30in.	

Groundwater Observations: Not Recorded

Depth (ft)	Sample Type/No.	Blows on Sampler per 6 inches	Pen. (in.)	Rec. (in.)	RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
0						Asphalt	ASPHALT, (0-1 feet)	
						Misc. Fill		
	S-1	10 10 7 6	24	15			Red c-f SAND, little c-f gravel, trace silt.	
	S-2	7 12 15 17	24	4			Red c-f SAND, little c-f gravel, trace silt.	125
5	S-3	12 19 20 22	24	5			Red c-f SAND, little c-f gravel, trace silt.	
	S-4	9 9 8 6	24	5			Red and black c-f SAND, some f-m gravel, trace silt	120
10	S-5	6 6 19 18	24	13		Sandy Gravel	Red and brown c-f ~~f-m~~ GRAVEL, some ~~f~~ c-f sand, some silt	
								115
15	S-6	14 13 16 21	24	0			No recovery	
								110
20	S-7	84 50/1"	7	4		Bedrock	Bedrock fragments	
								105
25								

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test

Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in Earth: 20ft Rock: 17ft No. of Soil Samples: 8 No. of Core Runs: 2	NOTES: DTE EDITS (BASED ON LAB TESTING RESULTS)	Sheet 1 of 2 SM-001-M REV. 1/02

Driller:	M. St. John	**Connecticut DOT Boring Report**		Hole No.:	B-4
Inspector:	M. Cyr	Town:	Berlin	Stat./Offset:	15+16/7
Engineer:	A. McCauliffe	Project No.:	007-266	Northing:	788097
Start Date:	5-18-23	Route No.:	Glen Street	Easting:	989990
Finish Date:	5-18-23	Bridge No.:	06955	Surface Elevation:	128.1

Project Description: Glen Street Bridge 06955

Casing Size/Type: 3-in. Casing	Sampler Type/Size: 1-3/8 inch ID	Core Barrel Type: NX
Hammer Wt.: 300lb Fall: 30in.	Hammer Wt.: 140lb Fall: 30in.	

Groundwater Observations: Not Recorded

Depth (ft)	SAMPLES: Sample Type/No.	SAMPLES: Blows on Sampler per 6 inches	SAMPLES: Pen. (in.)	SAMPLES: Rec. (in.)	SAMPLES: RQD %	Generalized Strata Description	Material Description and Notes	Elevation (ft)
25	S-8	50/0"	0	0		Bedrock *(con't)*	No Recovery	
	C-1		60	52	55		Gray, BASALT, fine, intesenly fractured, slightly weathered, medium strong, 0° to 60° bedding angle, Seams with orange discoloratio; 5-5-5-5-5	100
30								
	C-2		60	57	90		Gray, BASALT, fine, highly fractured, slightly weathered, medium strong, 0° to 45° bedding angle, Seams with orange discoloration; 5-5-5-5-5	95
35								
							END OF BORING 37ft	90
40								
								85
45								
								80
50								

Sample Type: S = Split Spoon C = Core UP = Undisturbed Piston V = Vane Shear Test

Proportions Used: Trace = 1 - 10%, Little = 10 - 20%, Some = 20 - 35%, And = 35 - 50%

Total Penetration in	NOTES:	Sheet
Earth: 20ft Rock: 17ft		2 of 2
No. of Soil Samples: 8 No. of Core Runs: 2		SM-001-M REV. 1/02

Rock Core Data Sheet

Project No.		Project Description	Town	Route No.	Bridge No.	Driller	Inspector	Engineer	Start Date	End Date
SPN: 0007-0266	FPN: 2017-0802.22	Replacement of Glen Street over Mattabesset River	Berlin	Glen Street	6955	K. Smith/ M. St. John	M. Cyr	Freeman Companies, LLC	5/18/2023	5/22/2023

Boring No.	Sample No.	Sample Depth (ft.)	Rock Type	Color	Grain Size	Bedding	Fracturing	Weathering	Strength	Drill Rates (min/ft)					Pen. (in)	Rec. (in)	Rec. (%)	RQD (%)
B-1	C1	15 - 20	BASALT	Gray	Fine Grained	Laminated	Highly fractured	Highly Weathered	Medium Strong	3	3	3	2.5	3	60	58	97%	67%
B-1	C2	20 - 25	BASALT	Gray	Fine Grained	Laminated	Moderately fractured	Highly Weathered	Medium Strong	2	3.5	3	4.5	3.5	60	41	68%	37%
B-2	C1	18 - 23	BASALT	Gray	Fine Grained	Laminated	Highly fractured	Highly Weathered	Medium Strong	3	5	4	4.5	4	60	54	90%	40%
B-2	C2	23 - 28	BASALT	Gray	Fine Grained	Laminated	Highly fractured	Highly Weathered	Medium Strong	6	6	5	5	5	60	56	93%	85%

FREEMAN COMPANIES
LAND DEVELOPMENT | ENGINEERING DESIGN | CONSTRUCTION SERVICES

NOTES:

Casing Type/Size:	4in Driven Casing
Hammer Weight:	300 lbs
Hammer Fall:	30 in
Core Barrel Type:	NX

Rock Core Data Sheet

Project No.		Project Description	Town	Route No.	Bridge No.	Driller	Inspector	Engineer	Start Date	End Date
SPN: 0007-0266	FPN: 2017-0802.22	Replacement of Glen Street over Mattabesset River	Berlin	Glen Street	6955	M. St. John	M. Cyr	Freeman Companies, LLC	5/18/2023	5/19/2023

Boring No.	Sample No.	Sample Depth (ft.)	Rock Type	Color	Grain Size	Bedding	Fracturing	Weathering	Strength	Drill Rates (min/ft)					Pen. (in)	Rec. (in)	Rec. (%)	RQD (%)
B-4	C1	27 - 32	BASALT	Gray	Fine Grained	Laminated	Intensely fractured	Slightly Weathered	Medium Strong	5	5	5	5	5	60	52	87%	55%
B-4	C2	32 - 37	BASALT	Gray	Fine Grained	Laminated	Highly fractured	Slightly Weathered	Medium Strong	5	5	5	5	5	60	57	95%	90%
B-3	C1	25 - 30	BASALT	Gray	Fine Grained	Laminated	Intensely fractured	Slightly Weathered	Medium Strong	4	4	4	4	4.5	60	48	80%	28%
B-3	C2	30 - 35	BASALT	Gray	Fine Grained	Laminated	Highly fractured	Slightly Weathered	Medium Strong	5	6	5	5	5	60	44	73%	73%

FREEMAN COMPANIES
LAND DEVELOPMENT | ENGINEERING DESIGN | CONSTRUCTION SERVICES

NOTES:

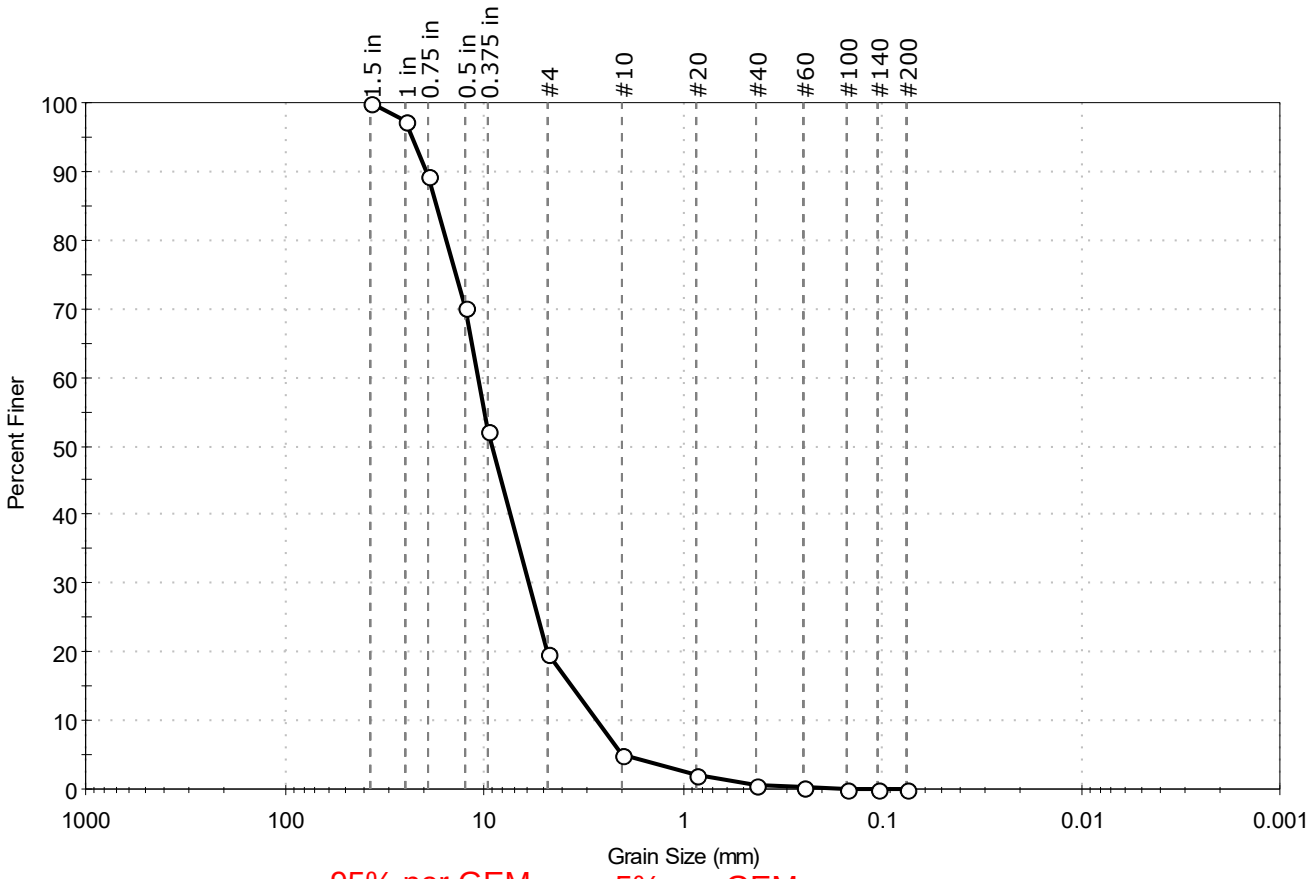
Casing Type/Size:	3in Driven Casing
Hammer Weight:	300 lbs
Hammer Fall:	30 in
Core Barrel Type:	NX

APPENDIX 3 -

LABORATORY TESTING RESULTS (BY OTHERS)

Client:	Freeman Companies, LLC				
Project:	007-266 Glen St Bridge Over Mattabesset River Berl				
Location:	Berlin, CT			Project No:	GTX-316869
Boring ID:	Downstream	Sample Type:	bag	Tested By:	ckg
Sample ID:	Composite	Test Date:	03/10/23	Checked By:	ank
Depth :	0-0.5	Test Id:	707461		
Test Comment:	---				
Visual Description:	Wet, very dark brown gravel with sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



~95% per GEM ~5% per GEM

% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	80.3	19.6	0.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1.5 in	37.50	100		
1 in	25.00	97		
0.75 in	19.00	89		
0.5 in	12.50	70		
0.375 in	9.50	52		
#4	4.75	20		
#10	2.00	5		
#20	0.85	2		
#40	0.42	1		
#60	0.25	0		
#100	0.15	0		
#140	0.11	0		
#200	0.075	0.1		

Coefficients

D_{85} = 17.2741 mm	D_{30} = 5.9098 mm
D_{60} = 10.6806 mm	D_{15} = 3.5940 mm
D_{50} = 9.0458 mm	D_{10} = 2.6774 mm
C_u = 3.989	C_c = 1.221

Classification

ASTM — Poorly graded GRAVEL with Sand (GP)

AASHTO — Stone Fragments, Gravel and Sand (A-1-a (1))

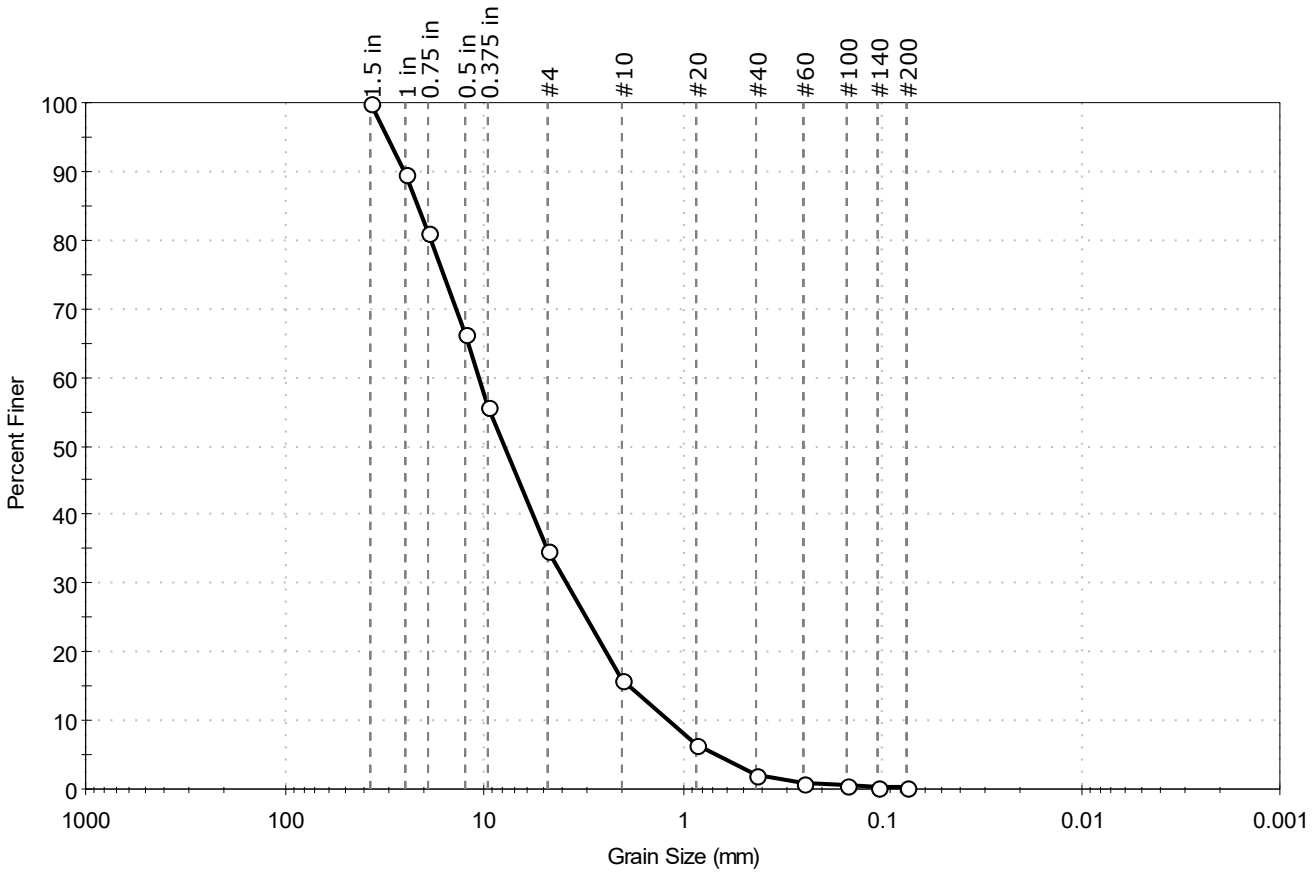
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Freeman Companies, LLC				
Project:	007-266 Glen St Bridge Over Mattabesset River Berl				
Location:	Berlin, CT			Project No:	GTX-316869
Boring ID:	Upstream	Sample Type:	bag	Tested By:	ckg
Sample ID:	Composite	Test Date:	03/09/23	Checked By:	ank
Depth :	0-0.5	Test Id:	707460		
Test Comment:	---				
Visual Description:	Wet, very dark brown gravel with sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



~84% per GEM ~16% per GEM

% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	65.2	34.5	0.3

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1.5 in	37.50	100		
1 in	25.00	90		
0.75 in	19.00	81		
0.5 in	12.50	66		
0.375 in	9.50	56		
#4	4.75	35		
#10	2.00	16		
#20	0.85	7		
#40	0.42	2		
#60	0.25	1		
#100	0.15	0		
#140	0.11	0		
#200	0.075	0.3		

Coefficients

D_{85} = 21.4525 mm	D_{30} = 3.8083 mm
D_{60} = 10.6071 mm	D_{15} = 1.8332 mm
D_{50} = 7.8599 mm	D_{10} = 1.1664 mm
C_u = 9.094	C_c = 1.172

Classification

ASTM — Well-graded GRAVEL with Sand (GW)

AASHTO — Stone Fragments, Gravel and Sand (A-1-a (1))

Sample/Test Description

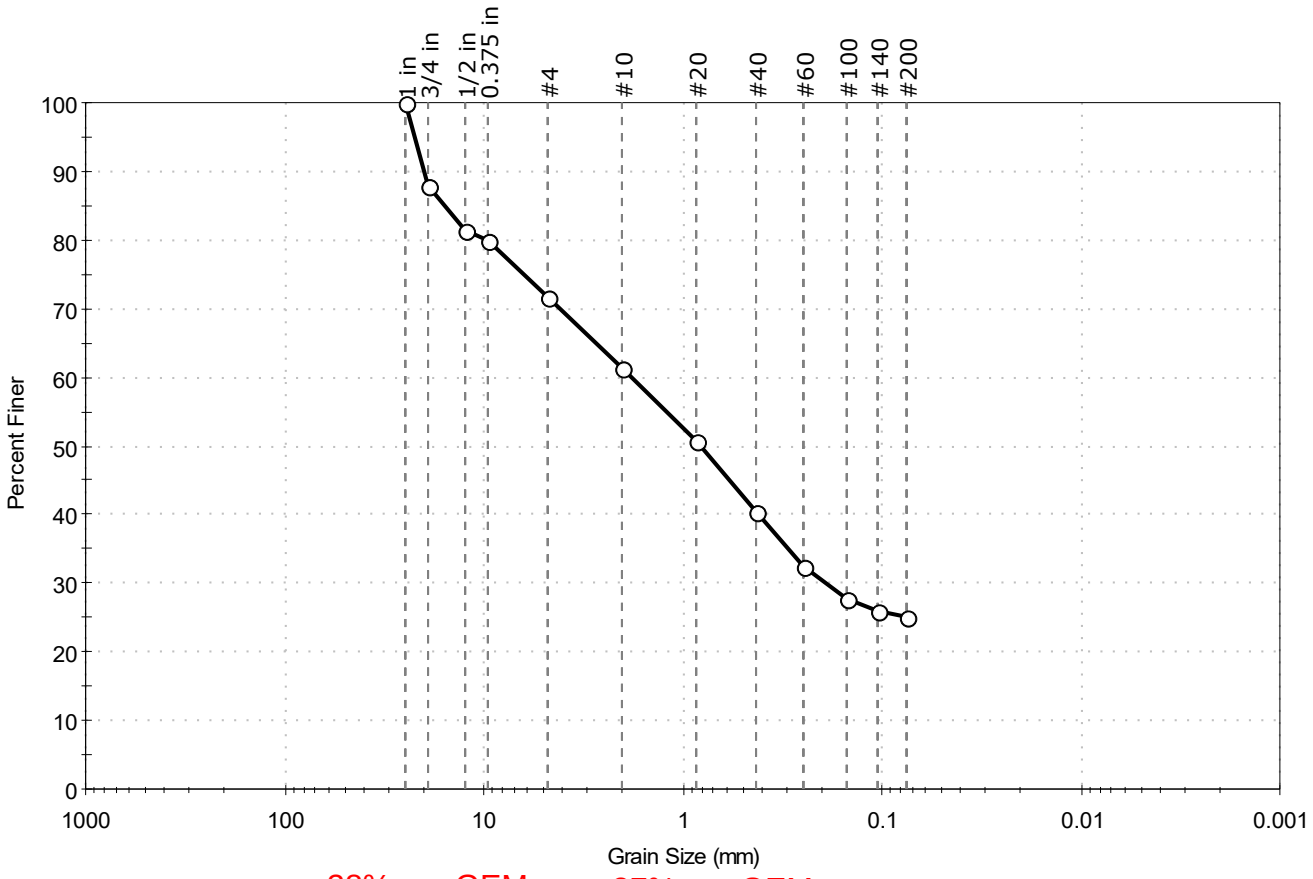
Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

GeoTesting EXPRESS

Client:	Freeman Companies, LLC				
Project:	007-266 Glen St Bridge Over Mattabesset River Berl				
Location:	Berlin, CT			Project No:	GTX-316869
Boring ID:	B-1	Sample Type:	bag	Tested By:	ckg
Sample ID:	S5	Test Date:	06/06/23	Checked By:	ank
Depth :	9-11	Test Id:	718239		
Test Comment:	---				
Visual Description:	Moist, dark reddish brown silty sand with gravel				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



~38% per GEM ~37% per GEM

% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	28.4	46.6	25.0

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1 in	25.00	100		
3/4 in	19.00	88		
1/2 in	12.50	82		
0.375 in	9.50	80		
#4	4.75	72		
#10	2.00	61		
#20	0.85	51		
#40	0.42	40		
#60	0.25	32		
#100	0.15	28		
#140	0.11	26		
#200	0.075	25		

Coefficients

D_{85} = 15.6426 mm	D_{30} = 0.1931 mm
D_{60} = 1.7991 mm	D_{15} = N/A
D_{50} = 0.8083 mm	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

Sample/Test Description

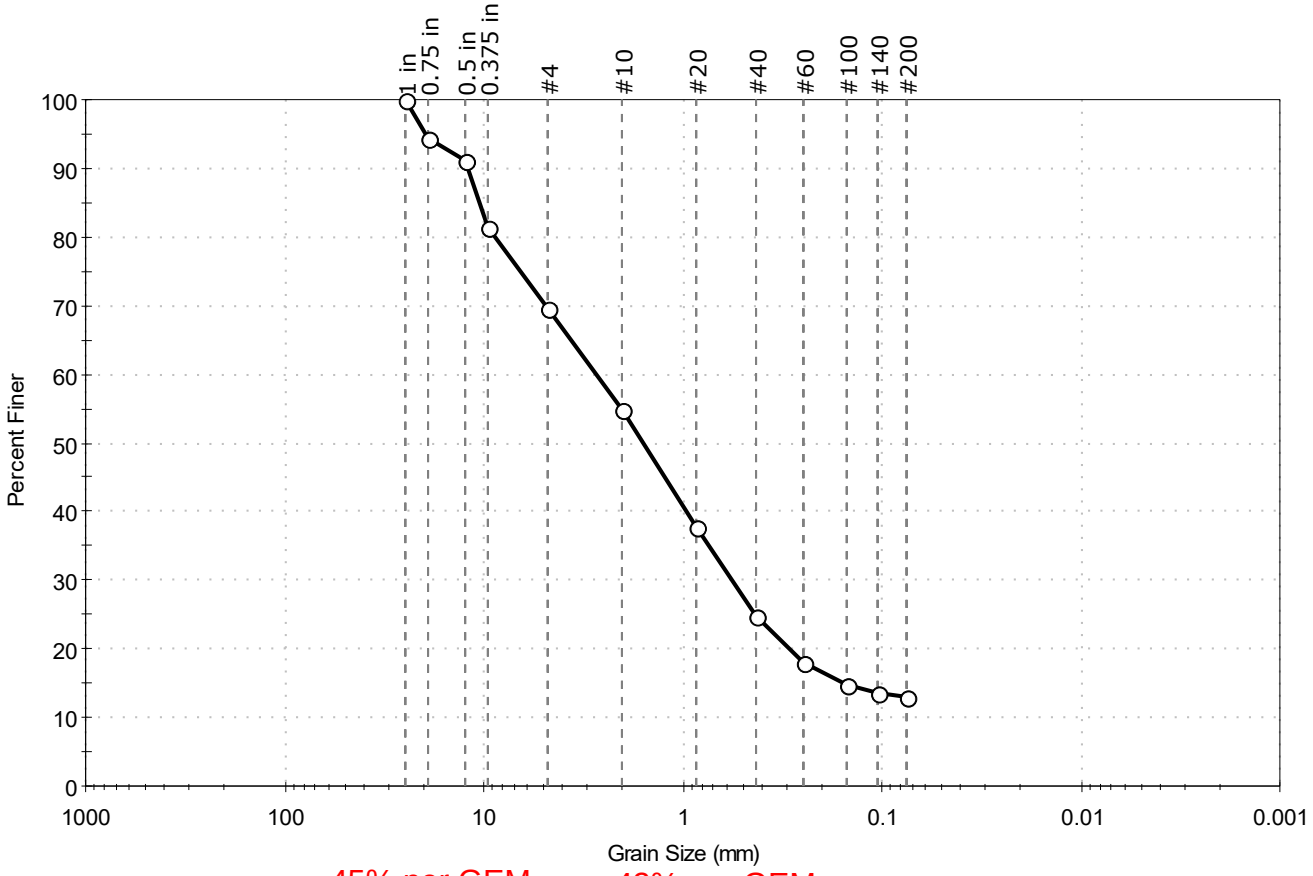
Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

GeoTesting EXPRESS

Client:	Freeman Companies, LLC				
Project:	007-266 Glen St Bridge Over Mattabesset River Berl				
Location:	Berlin, CT			Project No:	GTX-316869
Boring ID:	B-2	Sample Type:	bag	Tested By:	ckg
Sample ID:	S2	Test Date:	06/06/23	Checked By:	ank
Depth :	2-4	Test Id:	718240		
Test Comment:	---				
Visual Description:	Moist, dark reddish brown silty sand with gravel				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



~45% per GEM ~42% per GEM

% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	30.4	56.6	13.0

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1 in	25.00	100		
0.75 in	19.00	94		
0.5 in	12.50	91		
0.375 in	9.50	82		
#4	4.75	70		
#10	2.00	55		
#20	0.85	38		
#40	0.42	25		
#60	0.25	18		
#100	0.15	15		
#140	0.11	14		
#200	0.075	13		

Coefficients

D_{85} = 10.4856 mm	D_{30} = 0.5630 mm
D_{60} = 2.6956 mm	D_{15} = 0.1532 mm
D_{50} = 1.5608 mm	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

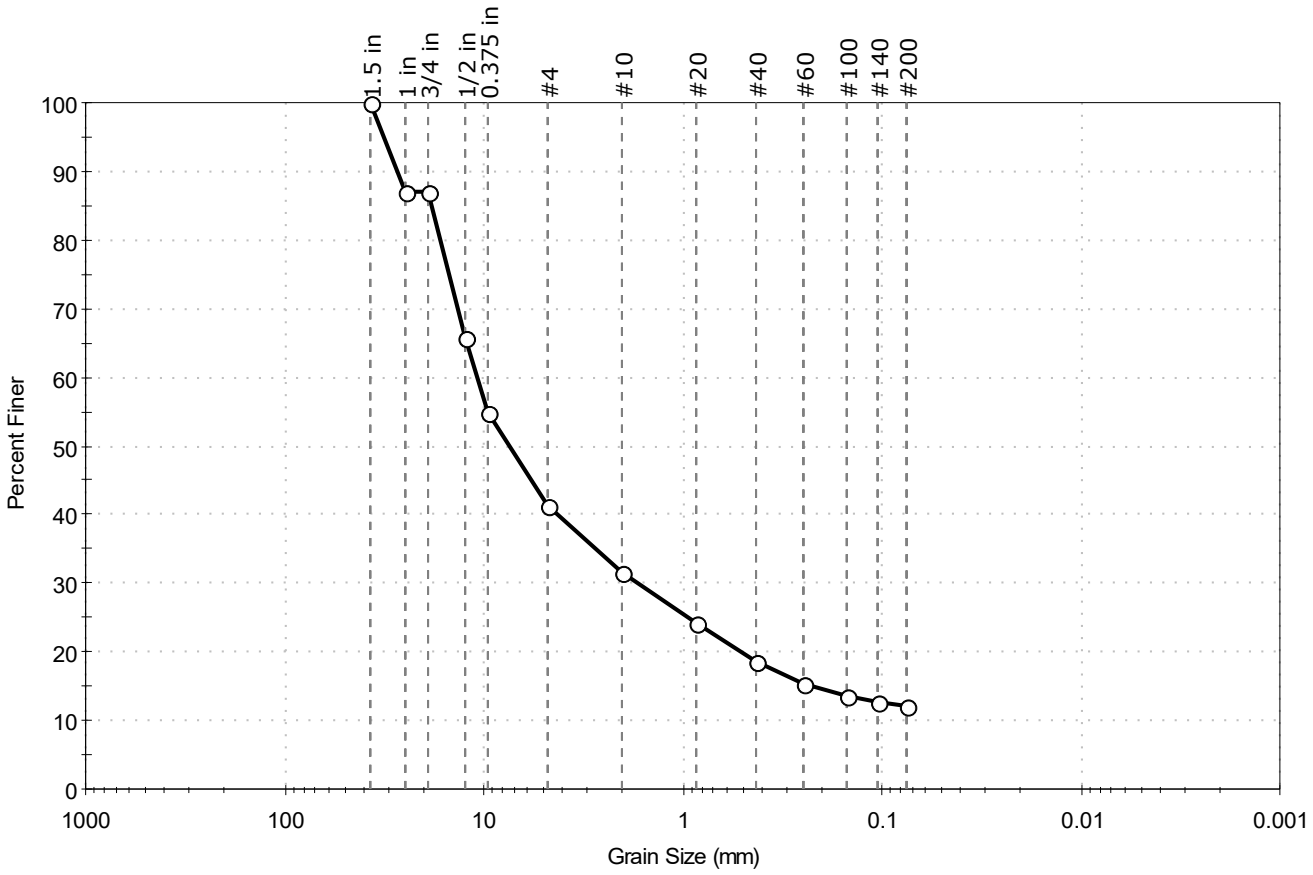
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Freeman Companies, LLC				
Project:	007-266 Glen St Bridge Over Mattabesset River Berl				
Location:	Berlin, CT			Project No:	GTX-316869
Boring ID:	B-3	Sample Type:	bag	Tested By:	ckg
Sample ID:	S6	Test Date:	06/06/23	Checked By:	ank
Depth :	15-17	Test Id:	718241		
Test Comment:	---				
Visual Description:	Moist, dark reddish brown silty gravel with sand				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



~69% per GEM ~19% per GEM

% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	58.8	29.0	12.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1.5 in	37.50	100		
1 in	25.00	87		
3/4 in	19.00	87		
1/2 in	12.50	66		
0.375 in	9.50	55		
#4	4.75	41		
#10	2.00	31		
#20	0.85	24		
#40	0.42	19		
#60	0.25	15		
#100	0.15	13		
#140	0.11	13		
#200	0.075	12		

Coefficients

D_{85} = 18.2417 mm	D_{30} = 1.6866 mm
D_{60} = 10.7790 mm	D_{15} = 0.2341 mm
D_{50} = 7.4020 mm	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO Stone Fragments, Gravel and Sand (A-1-a (0))

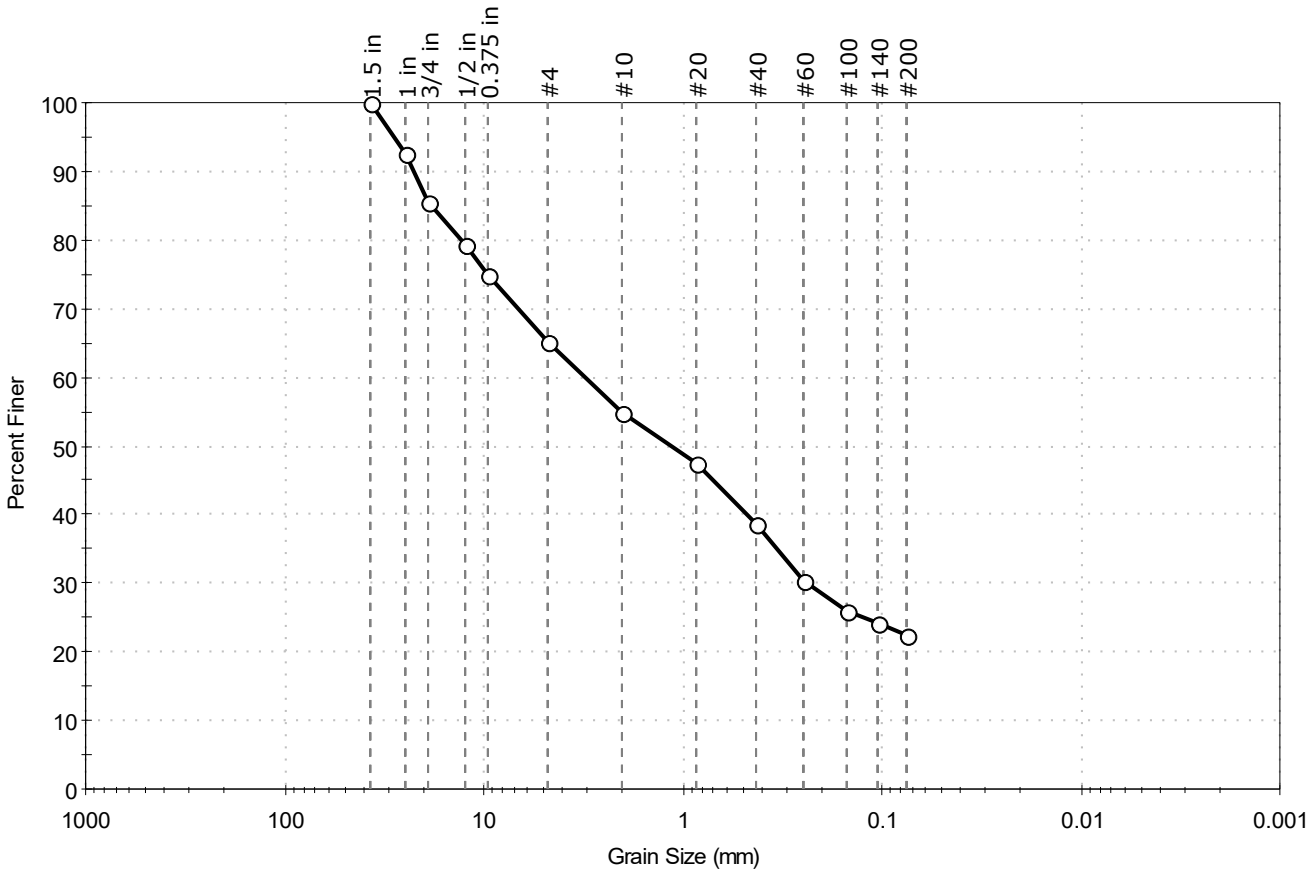
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Freeman Companies, LLC				
Project:	007-266 Glen St Bridge Over Mattabesset River Berl				
Location:	Berlin, CT			Project No:	GTX-316869
Boring ID:	B-4	Sample Type:	bag	Tested By:	ckg
Sample ID:	S5	Test Date:	06/06/23	Checked By:	ank
Depth :	10-12	Test Id:	718242		
Test Comment:	---				
Visual Description:	Moist, dark brown silty sand with gravel				
Sample Comment:	---				

Particle Size Analysis - ASTM D6913



~45% per GEM ~33% per GEM

% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	34.7	42.9	22.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1.5 in	37.50	100		
1 in	25.00	93		
3/4 in	19.00	86		
1/2 in	12.50	79		
0.375 in	9.50	75		
#4	4.75	65		
#10	2.00	55		
#20	0.85	48		
#40	0.42	39		
#60	0.25	30		
#100	0.15	26		
#140	0.11	24		
#200	0.075	22		

Coefficients

D_{85} = 18.1589 mm	D_{30} = 0.2372 mm
D_{60} = 3.0561 mm	D_{15} = N/A
D_{50} = 1.1331 mm	D_{10} = N/A
C_u = N/A	C_c = N/A

Classification

ASTM N/A

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Freeman Companies, LLC				
Project:	007-266 Glen St Bridge Over Mattabesset River Berl				
Location:	Berlin, CT			Project No:	GTX-316869
Boring ID:	---	Sample Type:	---	Tested By:	tlm
Sample ID:	---	Test Date:	06/21/23	Checked By:	smd
Depth :	---	Test Id:	718319		

Bulk Density and Compressive Strength of Rock Core Specimens by ASTM D7012 Method C

Boring ID	Sample Number	Depth	Bulk Density, pcf	Compressive strength, psi	Failure Type	Meets ASTM D4543	Note(s)
B-1	C1	18-19 ft	169	20712	1	Yes	---
B-4	C2	32.5-33 ft	163	10477	1	No	2,*

Notes: Density determined on core samples by measuring dimensions and weight and then calculating.

All specimens tested at the approximate as-received moisture content and at standard laboratory temperature.

The axial load was applied continuously at a stress rate that produced failure in a test time between 2 and 15 minutes.

Failure Type: 1 = Intact Material Failure; 2 = Discontinuity Failure; 3 = Intact Material and Discontinuity Failure (See attached photographs)

1: Best effort end preparation. See Tolerance report for details.
2: The as-received core did not meet the ASTM side straightness tolerance due to irregularities in the sample as cored.
3: Specimen L/D < 2.
4: The as-received core did not meet the ASTM minimum diameter tolerance of 1.875 inches.
5: Specimen diameter is less than 10 times maximum particle size.
6: Specimen diameter is less than 6 times maximum particle size.

*Because the indicated tested specimens did not meet the ASTM D4543 standard tolerances, the results reported here may differ from those for a test specimen within tolerances.

Client:	Freeman Companies, LLC	Test Date:	6/21/2023
Project Name:	007-266 Glen St Bridge Over Mattabesset River Berl	Tested By:	te
Project Location:	Berlin, CT	Checked By:	smd
GTX #:	316869		
Boring ID:	B-1		
Sample ID:	C1		
Depth:	18-19		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D4543

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.42	4.42	4.42
Specimen Diameter, in:	1.99	1.99	1.99
Specimen Mass, g:	610.08		
Bulk Density, lb/ft^3	169	**Minimum Diameter Tolerence Met?**	YES
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	YES

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? YES

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? YES

END FLATNESS AND PARALLELISM (Procedure FP1)

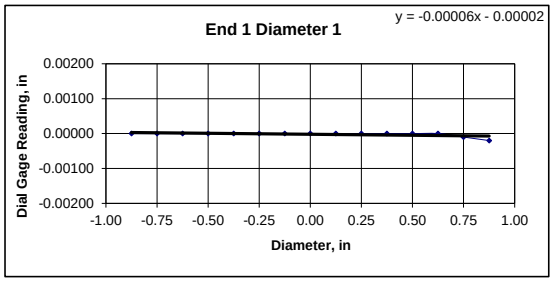
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00020
Diameter 2, in (rotated 90°)	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00020	-0.00020	-0.00030

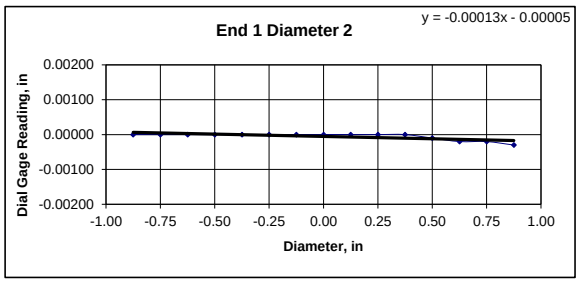
Difference between max and min readings, in:
0° = 0.00020 90° = 0.00030

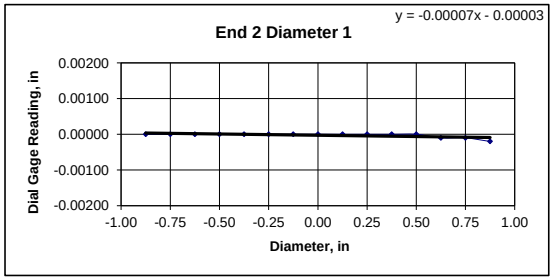
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00010	-0.00020
Diameter 2, in (rotated 90°)	-0.00020	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00010	0.00010	0.00010

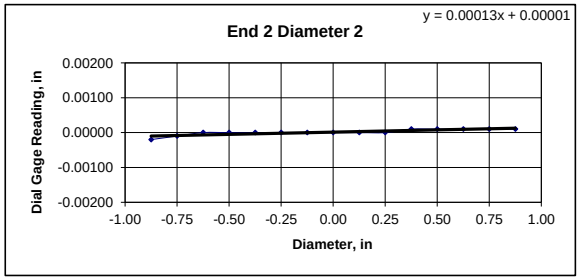
Difference between max and min readings, in:
0° = 0.0002 90° = 0.0003

Maximum difference must be < 0.0020 in. Difference = ± 0.00015
Flatness Tolerance Met? YES









DIAMETER 1

End 1:
Slope of Best Fit Line 0.00006
Angle of Best Fit Line: 0.00327

End 2:
Slope of Best Fit Line 0.00007
Angle of Best Fit Line: 0.00409

Maximum Angular Difference: 0.00082

Parallelism Tolerance Met? YES
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line 0.00013
Angle of Best Fit Line: 0.00769

End 2:
Slope of Best Fit Line 0.00013
Angle of Best Fit Line: 0.00737

Maximum Angular Difference: 0.00033

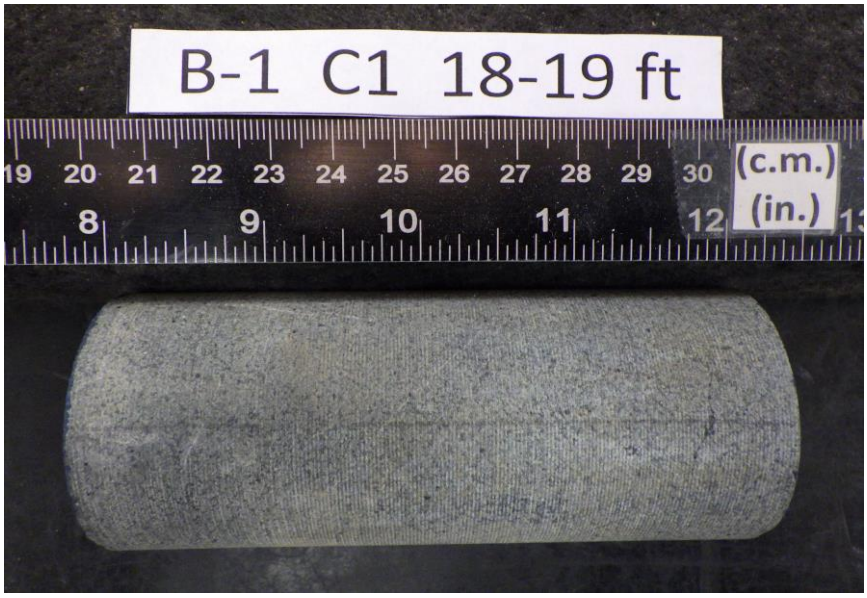
Parallelism Tolerance Met? YES
Spherically Seated

PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00020	1.990	0.00010	0.006	YES
Diameter 2, in (rotated 90°)	0.00030	1.990	0.00015	0.009	YES
END 2					
Diameter 1, in	0.00020	1.990	0.00010	0.006	YES
Diameter 2, in (rotated 90°)	0.00030	1.990	0.00015	0.009	YES

Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? YES

Client:	Freeman Companies, LLC
Project Name:	007-266 Glen St Bridge Over Mattabesset River Berl
Project Location:	Berlin, CT
GTX #:	316869
Test Date:	6/21/2023
Tested By:	te
Checked By:	smd
Boring ID:	B-1
Sample ID:	C1
Depth, ft:	18-19



After cutting and grinding

After break

Client:	Freeman Companies, LLC	Test Date:	6/21/2023
Project Name:	007-266 Glen St Bridge Over Mattabesset River Berl	Tested By:	te
Project Location:	Berlin, CT	Checked By:	smd
GTX #:	316869		
Boring ID:	B-4		
Sample ID:	C2		
Depth:	32.5-33 ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D4543

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.19	4.19	4.19
Specimen Diameter, in:	1.98	1.99	1.99
Specimen Mass, g:	556.78		
Bulk Density, lb/ft^3	163	**Minimum Diameter Tolerence Met?**	YES
Length to Diameter Ratio:	2.1	**Length to Diameter Ratio Tolerance Met?**	YES

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:
Is the maximum gap ≤ 0.02 in.? NO

Maximum difference must be < 0.020 in.
Straightness Tolerance Met? NO

END FLATNESS AND PARALLELISM (Procedure FP1)

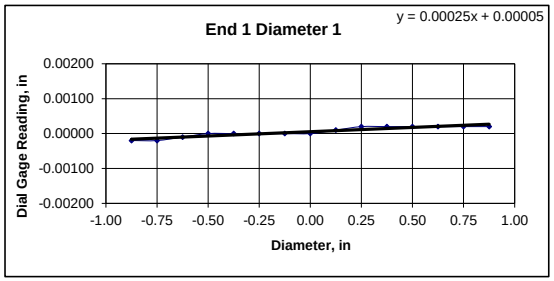
END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00020	-0.00020	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00020	0.00020	0.00020	0.00020	0.00020	0.00020
Diameter 2, in (rotated 90°)	-0.00020	-0.00020	-0.00020	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

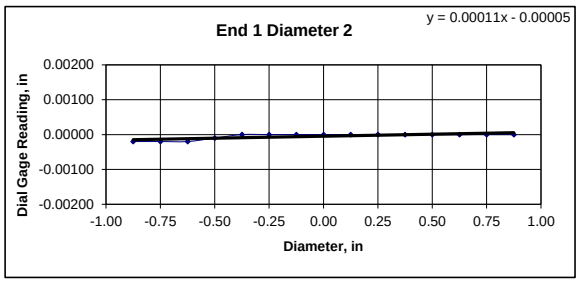
Difference between max and min readings, in:
0° = 0.00040 90° = 0.00020

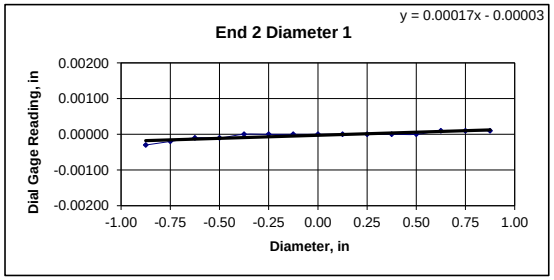
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00030	-0.00020	-0.00010	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00010
Diameter 2, in (rotated 90°)	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00000	0.00000	0.00000	0.00010	0.00010	0.00010	0.00000	-0.00010	-0.00010

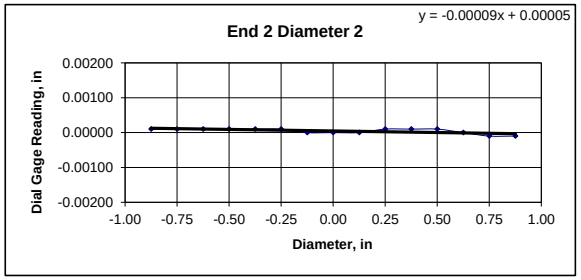
Difference between max and min readings, in:
0° = 0.0004 90° = 0.0002

Maximum difference must be < 0.0020 in. Difference = ± 0.00020
Flatness Tolerance Met? YES









DIAMETER 1

End 1:
Slope of Best Fit Line 0.00025
Angle of Best Fit Line: 0.01408

End 2:
Slope of Best Fit Line 0.00017
Angle of Best Fit Line: 0.00982

Maximum Angular Difference: 0.00426

Parallelism Tolerance Met? YES
Spherically Seated

DIAMETER 2

End 1:
Slope of Best Fit Line 0.00011
Angle of Best Fit Line: 0.00655

End 2:
Slope of Best Fit Line 0.00009
Angle of Best Fit Line: 0.00507

Maximum Angular Difference: 0.00147

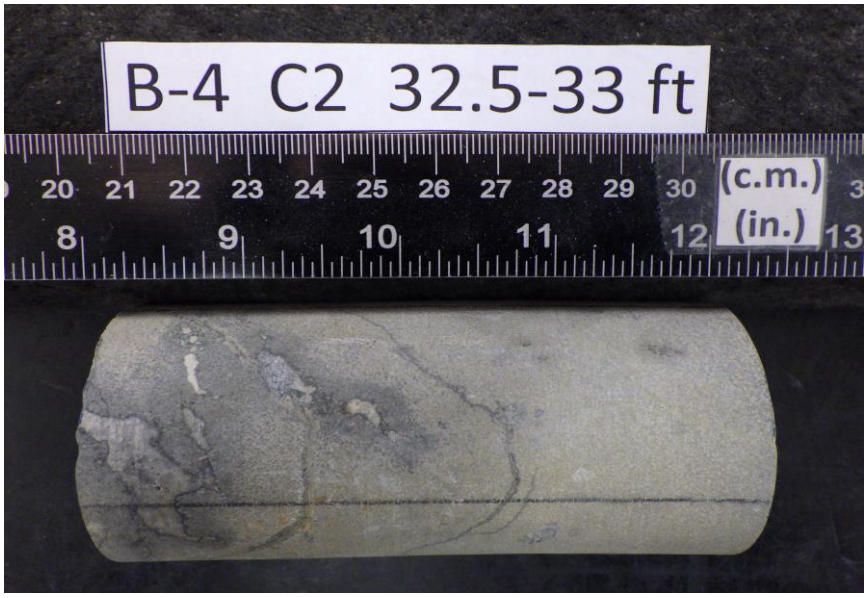
Parallelism Tolerance Met? YES
Spherically Seated

PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

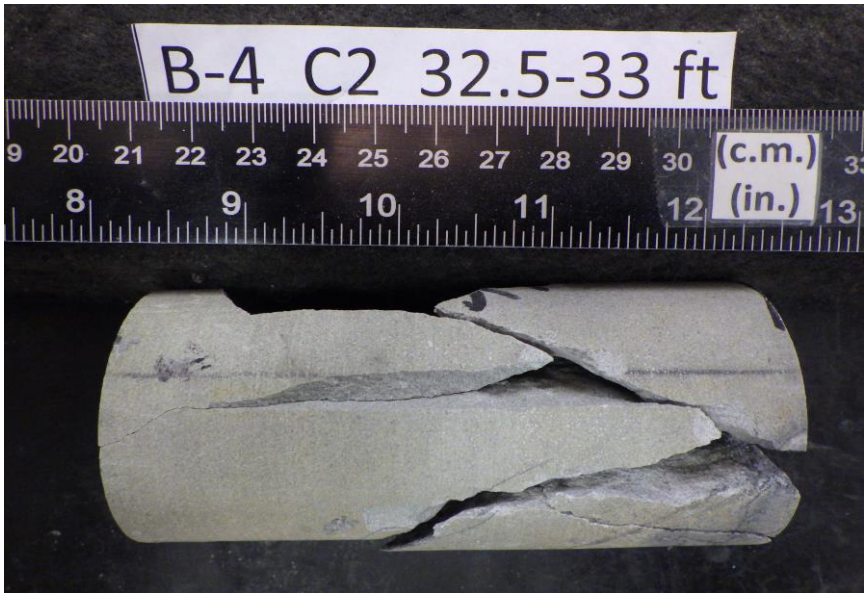
END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00040	1.985	0.00020	0.012	YES
Diameter 2, in (rotated 90°)	0.00020	1.985	0.00010	0.006	YES
END 2					
Diameter 1, in	0.00040	1.985	0.00020	0.012	YES
Diameter 2, in (rotated 90°)	0.00020	1.985	0.00010	0.006	YES

Maximum angle of departure must be ≤ 0.25°
Perpendicularity Tolerance Met? YES

Client:	Freeman Companies, LLC
Project Name:	007-266 Glen St Bridge Over Mattabesset River Berl
Project Location:	Berlin, CT
GTX #:	316869
Test Date:	6/21/2023
Tested By:	te
Checked By:	smd
Boring ID:	B-4
Sample ID:	C2
Depth, ft:	32.5-33



After cutting and grinding



After break

APPENDIX 4 -

SPECIAL PROVISIONS

ITEM #0202911A – CONDITION SURVEY (SITE NO. 1)

Description: Work under this item consists of performing condition surveys and monitoring of existing structures at 215 Robindale Drive and 85 Glen Street.

Work shall include, but not necessarily be limited to:

1. Conducting pre- and post-construction condition surveys.
2. Laying out, furnishing, installing, protecting, maintaining, monitoring, and preparing reports for all monitoring instrumentation: Crack Monitors, Deformation Monitoring Points, and Vibration Monitors.
3. Replacement of failed, damaged, or stolen instrumentation.
4. Notifying the Engineer and taking immediate remedial action to prevent the limiting values from being reached. Meeting with the Engineer to review current field conditions to determine further steps to be taken, before exceeding the limiting values.
5. Making adjustments to construction operations in order to not exceed the limiting values.
6. Removal of all monitoring instruments (Crack Monitors, Deformation Monitoring Points, and Vibration Monitors) as specified herein, or as directed by the Engineer, at the completion of construction activities.

Materials:

Crack Monitors: Crack monitors shall be two-piece acrylic plate type monitors with crosshairs on one piece and fine grid on the other, mounted on each side of the crack with appropriate screws or quick setting epoxy as manufactured by Avongard Products, U.S.A., Ltd., Preservation Resource Group, Inc. (PRG) or approved equal.

Deformation Monitoring Points (DMPs): These are to be used as targets in monitoring by conventional survey methods. The target shall be the head of a stainless or galvanized steel bolt drilled and grouted into the structure or other devices approved by the Engineer that will allow repeatable and reproducible elevation readings when measured with conventional survey equipment.

Vibration Monitors: Provide three-component seismographs or vibration monitors, capable of measuring and recording particle velocity data and frequency in three mutually perpendicular directions. The Contractor's vibration specialist shall install, maintain, and calibrate the vibration monitoring instruments in accordance with the instrument manufacturer's recommendations. Any instrument showing indication of damage, malfunction, or erratic functioning shall be immediately replaced with a calibrated, functioning instrument. The Contractor's vibration specialist shall have a minimum of 5 years of experience with implementing a vibration monitoring program on similar projects.

Construction Methods:

Pre- and Post-Conditions Surveys and Crack Monitoring:

The Contractor shall engage the services of a qualified, independent professional, acceptable to the Engineer to conduct pre- and post- construction surveys of the main structure. Work under this item included furnishing all necessary labor, equipment and materials to perform the condition surveys and monitor cracks. Work also includes contacting the owner by certified letter to obtain permission for entry required for the work.

A pre-construction condition survey shall be completed and 5 copies of the survey and initial monitoring measurements submitted at least 10 days prior to the start of ground improvement or at an earlier stage of construction if requested by the Engineer. Initial crack monitoring measurements are to be included in this report.

The pre-construction condition survey shall consist of a visual inspection, photograph and video documentation, and written description of existing structures. Descriptions shall identify any existing cracks, damage, or other defects and shall include such information to make it possible to determine the effect, if any, of the construction operations on the defect. Where significant cracks or damage exists, or for defects too complicated to describe in words, photographs shall be taken and made part of the record. In addition, the significant cracks shall, with consent of the owner, be instrumented with crack monitors to record any movement of the crack. Where crack monitors are not installed, crack width measurements shall be made with suitable measuring devices. Initial crack monitoring measurements shall be recorded in the presence of Engineer and Owner's representative. All parties shall sign the record copy of the form used to record the initial readings.

The initial record of each property examined shall be signed by the representatives present and, if practicable, by the Owners of the property, whether or not they are present at the examinations.

A post-construction condition survey will be conducted upon completion of construction activities, or at a later date if requested by the Engineer.

The post-construction condition survey shall repeat the process used in the preconstruction survey, paying particular attention to any areas where complaints of damage have been received or damage claims have been filed. Notice shall be given to all interested parties so that they may be present during the post-construction condition survey. A form shall be provided to all representatives attending the post-construction survey showing the initial crack reading measurements and shall provide a location to record the final measurements. Crack monitors shall be read during the final examination and can be removed if no change is noted from the initial readings. If a change is noted, the crack gauge shall remain in place until approval is given by the Engineer to remove the crack monitor. Mounting hardware or adhesives shall be removed and the surface restored when the crack gauges are removed. Representatives present shall sign the record copy of the monitoring form used to record the final readings. Crack monitors shall not be removed until the Owner or Owner's representative signs the record copy of the form recording the final crack monitoring readings.

The final record of the examined structures shall be signed by the representatives present and, if practicable, by the Owner, whether or not they are present at the examinations.

The Contractor shall submit 5 copies of the pre- and post-construction condition surveys including all documentation to the Engineer within 10 days of the completion of the post- construction condition survey.

Monitoring Requirements:

A. Monitoring Instrumentation Installation:

1. Install the DMPs and Vibration Monitors at the locations as directed by the Engineer. A minimum of two DMP locations and one Vibration Monitor locations shall be established.

2. Crack Monitor locations will be determined and installed as part of the pre-construction condition survey.

3. All DMPs and Crack Monitors shall be installed in the presence of the Engineer.

4. Contractor to coordinate uninterrupted access, power supply (if applicable), and wireless signal (if applicable).

5. All DMPs and Crack Monitors shall be securely fixed at the approved locations and position, so that the instruments are capable of resisting disturbance from vandalism. Establish the initial elevation and location of DMPs to an eighth of an inch precision.

6. DMP benchmarks shall be selected by the contractor and protected from damage for the duration of the work.

7. The Engineer reserves the right to modify the DMP and Vibration Monitor layout as is deemed necessary to monitor the impact of the Contractor's proposed method of construction. The DMPs shall be arranged so that monitoring can continue until completion without interruption. Adequate access for maintenance and reading of the DMPs shall be provided.

B. Monitoring Schedule and Submittal:

1. All DMPs and Crack Monitors / crack measurement points shall be installed and initial readings completed with the pre-construction condition survey as noted above.

2. In addition to the initial readings, DMPs and Crack Monitors / crack measurement points shall be monitored:

    - Prior to the start of and then at least daily during bedrock removal to accommodate foundation subgrade preparations

- One week after completion of foundation subgrade preparations, and then weekly until there is no change in readings.

The Engineer may increase the frequency of monitoring at no additional cost should there be any changes in the measurements or other indications of movement. Measurements shall the Engineer by the morning after the day the readings were taken. A typed and signed form shall be submitted on a weekly basis during periods requiring monitoring, unless the Engineer approves submittal less frequently.

3. The Contractor's vibration specialist shall maintain a log of all vibration producing activities for which ground vibrations were monitored. The vibration monitoring log shall include the recorded maximum peak particle velocity and the associated frequency and the date and time for each event recorded and the type and location of the vibration producing activity, location of monitoring instruments, and the closest distance from the vibration producing activity to the monitoring instrument. In addition to immediate verbal and email notifications of significant vibrations, the vibration specialist shall submit weekly reports of vibration monitoring to the Engineer during periods when such monitoring is required. The monitoring reports shall include the vibration monitoring record data, a location plan showing areas of construction activity and monitoring locations, and a written narrative summarizing the vibration monitoring performed and the results.

C. The Contractor shall respond to the monitored readings from instrumentation as follows:

1. Implement remedial action if readings approach the Limiting Values of ½" for DMPs, 1/8" for Crack Monitors / crack measurement points, and a peak particle velocity (i.e. ground vibrations) of 0.5 inch per second. The term "peak particle velocity" shall be considered to mean the resultant vector sum of particle velocities in three mutually perpendicular directions at any instant in time.

2. Take all necessary steps so that the limiting values are not exceeded. The Contractor may be directed to suspend activities in the affected area with the exception of those actions necessary to avoid exceeding the limiting value.

3. If any readings exceed 50 percent of the limiting values, the Contractor shall:

   a) Halt operations that are causing the instrument response values to reach 50 percent of the limiting value.

   b) Meet with the Engineer to discuss response actions.

   c) Implement the reviewed plan of action, which includes modifications to the Contractor means and methods necessary to reduce the potentially damaging effects of the construction activities such that the limiting values are not reached.

D. Damage to Instrumentation:

The Contractor shall protect all DMPs, Crack Monitors, and Vibration Monitors from damage due to construction operations, weather, and vandalism. If an instrument is damaged or unusable, the Contractor's instrumentation personnel shall replace the damaged DMP or Crack Monitor within 72 hours, at no additional cost to the State. The Engineer will be the sole judge of work stoppage in the vicinity of the damaged or unusable instrument until it is again operational, at no additional cost to the State.

E. Removal of Instruments:

Prior to completion of the Contract, the Contractor shall remove all DMPs and restore the surface to the Engineer's satisfaction. All instruments or portions thereof removed by the Contractor shall become the property of the Contractor.

Method of Measurement:

Within sixty (60) calendar days of the award of the Contract, the Contractor shall submit to the Engineer for approval a cost breakdown of the lump sum bid prices for these items. The submission must include substantiation showing that the cost breakdowns submitted are reasonable based on the Contractor's lump sum bids. The cost breakdown shall be in accordance with the following payment schedule:

Pre-Construction Surveys: The cost to develop and perform pre-construction surveys meeting site requirements. The cost shall not exceed 20 percent of the lump sum value.

Furnishing and Installation of Monitoring Devices: The cost to procure and install all required devices at each site. The cost shall not exceed 20 percent of the lump sum value.

Monitoring and Maintenance of Devices: The number of months and monthly cost to perform the required monitoring and prepare documentation at each site. The cost shall be a minimum of 40 percent of the lump sum value.

Post-Construction Surveys and Removal of Monitoring Devices: The cost to perform the post-construction surveys and remove monitoring devices at each site. The cost shall be a minimum of 5 percent of the lump sum value.

Basis of Payment: This work will be paid for at the contract lump sum price for "Condition Survey (Site No. 1)" which price shall include all materials, tools, equipment and labor for the required work at each site including: the services of an independent professional to perform the pre- and post-construction surveys; furnishing, installation, monitoring, and removal of DMPs; preparation of
reports; notification of the Engineer of any readings which reach 50 percent of the limiting values; and adjusting the means and methods in order not to exceed the limiting values.

Pay Item	Pay Unit
Condition Survey (Site No. 1)	LS

ITEM #0204001A – COFFERDAM AND DEWATERING

Work under this item shall conform to Section 2.04 – Cofferdam and Dewatering, amended as follows:

2.04.01 – Description:

Work under this item shall consist of the design, construction, maintenance and removal of a cofferdam, the support/retainage of existing facilities, and necessary dewatering within the cofferdam, as shown on the plans. If designated on the plans, the installed cofferdam material shall be left in place. For the purposes of this specification, cofferdam shall be understood to mean a structure, the type of which the Contractor elects to build, to fully enclose, confine, and support an area to be pumped dry to enable construction to be carried out.

APPENDIX 5 -

LIMITATIONS

LIMITATIONS

Explorations

1. The analyses and recommendations submitted in this report are based in part upon the data obtained from subsurface explorations by Down To Earth Consulting, LLC (DTE) and others. 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. These data have been reviewed and interpretations have been made in the text of this report. However, it must be noted that fluctuations in the level of the groundwater may occur due to variations in rainfall, tidal, 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 structures are planned, the conclusions and recommendations 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 DTE. 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.

Construction

5. It is recommended that this firm be retained to provide soil engineering services during construction of the earthworks and foundation phases of the work. This is to observe compliance with the design concepts, specifications, and recommendations and to allow design changes in the event that subsurface conditions differ from those anticipated prior to start of construction.

Use of Report

6. This report has been prepared for the exclusive use of Jacobs Engineering Group, Inc. for specific application to the project noted in this geotechnical report in accordance with generally accepted soil and foundation engineering practices. No other warranty, express or implied, is made.

7. This soil and foundation engineering report has been prepared for this project by DTE. This report 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.

8. This report may contain comparative cost estimates for the purpose of evaluating alternative foundation schemes. These estimates may also involve approximate quantity evaluations. It should be noted that quantity estimates may not be accurate enough for construction bids. Since DTE has no control over labor and materials cost and design, the estimates of construction costs have been made on the basis of experience. DTE does not guarantee the accuracy of cost estimates as compared to contractor's bids for construction costs.

CONSTUCTION CONTRACTS - REQUIRED CONTRACT PROVISIONS (FHWA FUNDED CONTRACTS)

See following page

Construction Contracts - Required Contract Provisions
(FHWA and State Funded Contracts)

Index

1. Federal Highway Administration (FHWA) Form 1273 (Revised October 2023)

2. Title VI of the Civil Rights Act of 1964 / Nondiscrimination Requirements

3. Requirements of Title 49, CFR, Part 26, Participation by DBEs

4. Contract Wage Rates

5. Americans with Disabilities Act of 1990, as Amended

6. Connecticut Statutory Labor Requirements

    a. Construction, Alteration or Repair of Public Works Projects; Wage Rates
    b. Debarment List - Limitation on Awarding Contracts
    c. Construction Safety and Health Course
    d. Awarding of Contracts to Occupational Safety and Health Law Violators Prohibited
    e. Residents Preference in Work on Other Public Facilities (Not Applicable to Federal Aid Contracts)

7. Tax Liability - Contractor's Exempt Purchase Certificate (CERT – 141)

8. Executive Orders (State of CT)

9. Non-Discrimination Requirement and Certification (pursuant to section 4a-60 and 4a- 60a of the Connecticut General Statutes, as revised)

10. Whistleblower Provision

11. Connecticut Freedom of Information Act

    a. Disclosure of Records
    b. Confidential Information

12. Service of Process

13. Substitution of Securities for Retainages on State Contracts and Subcontracts

14. Health Insurance Portability and Accountability Act of 1996 (HIPAA)

15. Forum and Choice of Law

16. Summary of State Ethics Laws
17. Audit and Inspection of Plants, Places of Business and Records
18. Campaign Contribution Restriction
19. Tangible Personal Property
20. Bid Rigging and/or Fraud – Notice to Contractor
21. Consulting Agreement Representation
22. Federal Cargo Preference Act Requirements (46 CFR 381.7(a)-(b))
23. Sovereign Immunity
24. Large State Contract Representation for Contractor
25. Large State Contract Representation for Official or Employee of State Agency
26. Iran Energy Investment Certification
27. Access to Contract and State Data
28. Affirmative Action Policy Statement
29. Compliance with Consumer Data Privacy and Online Monitoring

Index of Exhibits

EXHIBIT A – FHWA Form 1273 (Begins on page 17)
EXHIBIT B – Title VI Contractor Assurances (page 31)
EXHIBIT C – Health Insurance Portability and Accountability Act of 1996 (HIPAA) (page 33)
EXHIBIT D – Affirmative Action Policy Statement (page 41)
EXHIBIT E – State Wage Rates & Other Related Information (Attached at the end)
EXHIBIT F – Federal Wage Rates (Attached at the end)

1. Federal Highway Administration (FHWA) Form 1273

The Contractor shall comply with the Federal Highway Administration (FHWA), Form 1273 attached at Exhibit A, as revised, which is hereby made part of this contract. The Contractor shall also require its subcontractors to comply with the FHWA – Form 1273 and include the FHWA – Form 1273 as an attachment to all subcontracts and purchase orders.

2. Title VI of the Civil Rights Act of 1964 / Nondiscrimination Requirements

The Contractor shall comply with Title VI of the Civil Rights Act of 1964 as amended (42 U.S.C. 2000 et seq.), all requirements imposed by the regulations of the United States Department of Transportation (49 CFR Part 21) issued in implementation thereof, and the Title VI Contractor Assurances attached hereto at Exhibit B, all of which are hereby made a part of this Contract.

3. Requirements of Title 49, Code of Federal Regulations (CFR), Part 26, Participation by DBEs, as may be revised.

Pursuant to 49 CFR 26.13, the following paragraph is part of this Contract and shall be included in each subcontract the Contractor enters into with a subcontractor:

"The Contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26, Participation by DBEs, in the award and administration of U.S. DOT-assisted contracts. Failure by the Contractor to carry out these requirements is a material breach of this Contract, which may result in the termination of this contract or such other remedy as ConnDOT (recipient) deems appropriate, which may include, but is not limited to: (1) Withholding monthly progress payments, (2) Assessing sanctions, (3) Liquidated damages; and/or, (4) Disqualifying the contractor from future bidding as non-responsible."

4. Contract Wage Rates

The Contractor shall comply with:

The Federal and State wage rate requirements indicated in Exhibits F and G hereof, as revised, are hereby made part of this Contract. The Federal wage rates (Davis-Bacon Act) applicable to this Contract shall be the Federal wage rates that are current on the US Department of Labor website (http://www.wdol.gov/dba.aspx) as may be revised 10 days prior to bid opening. These applicable Federal wage rates will be physically incorporated in the final contract document executed by both parties. The Department will no longer physically include revised Federal wage rates in the bid documents or as part of addenda documents, prior to the bid opening date. During the bid advertisement period, bidders are responsible for obtaining the appropriate Federal wage rates from the US Department of Labor website.

To obtain the latest Federal wage rates go to the US Department of Labor website (link above). Under Davis-Bacon Act, choose "Selecting DBA WDs" and follow the instruction to search the latest wage rates for the State, County and Construction Type. Refer to the Notice to Contractor (NTC) - Federal Wage Determinations (Davis Bacon Act).

If a conflict exists between the Federal and State wage rates, the higher rate shall govern.

Prevailing Wages for Work on State Highways; Annual Adjustments. With respect to contracts for work on state highways and bridges on state highways, the Contractor shall comply with the provisions of Section 31-54 and 31-55a of the Connecticut General Statutes, as revised.

As required by Section 1.05.12 (Payrolls) of the State of Connecticut, Department of Transportation's Standard Specification for Roads, Bridges and Incidental Construction (FORM 819), as may be revised, every Contractor or subcontractor performing project work on a Federal aid project is required to post the relevant prevailing wage rates as determined by the United States Secretary of Labor. The wage rate determinations shall be posted in prominent and easily accessible places at the work site.

5. Americans with Disabilities Act of 1990, as Amended

This provision applies to those Contractors who are or will be responsible for compliance with the terms of the Americans with Disabilities Act of 1990, as amended (42 U.S.C. 12101 et seq.), (Act), during the term of the Contract. The Contractor represents that it is familiar with the terms of this Act and that it is in compliance with the Act. Failure of the Contractor to satisfy this standard as the same applies to performance under this Contract, either now or during the term of the Contract as it may be amended, will render the Contract voidable at the option of the State upon notice to the contractor. The Contractor warrants that it will hold the State harmless and indemnify the State from any liability which may be imposed upon the State as a result of any failure of the Contractor to be in compliance with this Act, as the same applies to performance under this Contract.

6. Connecticut Statutory Labor Requirements

(a) Construction, Alteration or Repair of Public Works Projects; Wage Rates. The Contractor shall comply with Section 31-53 of the Connecticut General Statutes, as revised. The wages paid on an hourly basis to any person performing the work of any mechanic, laborer or worker on the work herein contracted to be done and the amount of payment or contribution paid or payable on behalf of each such person to any employee welfare fund, as defined in subsection (i) of section 31-53 of the Connecticut General Statutes, shall be at a rate equal to the rate customary or prevailing for the same work in the same trade or occupation in the town in which such public works project is being constructed. Any contractor who is not obligated by agreement to make payment or contribution on behalf of such persons to any such employee welfare fund shall pay to each mechanic, laborer or worker as part of such person's wages the amount of payment or contribution for such person's classification on each pay day.

(b) Debarment List. Limitation on Awarding Contracts. The Contractor shall comply with Section 3l-53a of the Connecticut General Statutes, as revised.

(c) Construction Safety and Health Course. The Contractor shall comply with section 31-53b of the Connecticut General Statutes, as revised. The contractor shall furnish proof to the Labor Commissioner with the weekly certified payroll form for the first week each employee begins work on such project that any person performing the work of a mechanic, laborer or worker pursuant to the classifications of labor under section 31-53 of the Connecticut General Statutes, as revised, on such public works project, pursuant to such contract, has completed a course of at least ten hours in duration in construction safety and health approved by the federal Occupational Safety and Health Administration or, has completed a new miner training program approved by the Federal Mine Safety and Health Administration in accordance with 30 CFR 48 or, in the case of telecommunications employees, has completed at least ten hours of training in accordance with 29 CFR 1910.268.

Any employee required to complete a construction safety and health course as required that has not completed the course, shall have a maximum of fourteen (14) days to complete the course. If the employee has not been brought into compliance, they shall be removed from the project until such time as they have completed the required training.

Any costs associated with this notice shall be included in the general cost of the contract. In addition, there shall be no time granted to the contractor for compliance with this notice. The contractor's compliance with this notice and any associated regulations shall not be grounds for claims as outlined in Section 1.11 – "Claims".

(d) Awarding of Contracts to Occupational Safety and Health Law Violators Prohibited. The Contract is subject to Section 31-57b of the Connecticut General Statutes, as revised.

(e) Residents Preference in Work on Other Public Facilities. NOT APPLICABLE TO FEDERAL AID CONTRACTS. Pursuant to Section 31-52a of the Connecticut General Statutes, as revised, in the employment of mechanics, laborers or workmen to perform the work specified herein, preference shall be given to residents of the state who are, and continuously for at least six months prior to the date hereof have been, residents of this state, and if no such person is available, then to residents of other states.

7. Tax Liability - Contractor's Exempt Purchase Certificate (CERT – 141)

The Contractor shall comply with Chapter 219 of the Connecticut General Statutes pertaining to tangible personal property or services rendered that is/are subject to sales tax. The Contractor is responsible for determining its tax liability. If the Contractor purchases materials or supplies pursuant to the Connecticut Department of Revenue Services' "Contractor's Exempt Purchase Certificate (CERT-141)," as may be revised, the Contractor acknowledges and agrees that title to such materials and supplies installed or placed in the project will vest in the State simultaneously with passage of title from the retailers or vendors thereof, and the Contractor will have no property rights in the materials and supplies purchased.

Forms and instructions are available anytime by:

Internet: Visit the DRS website at www.ct.gov/DRS to download and print Connecticut tax forms; or **Telephone**: Call 1-800-382-9463 (Connecticut calls outside the Greater Hartford calling area only) and select Option 2 or call 860-297-4753 (from anywhere).

8. Executive Orders and Other Enactments

(a) All references in this Contract to any Federal, State, or local law, statute, public or special act, executive order, ordinance, regulation or code (collectively, "Enactments") shall mean Enactments that apply to the Contract at any time during its term, or that may be made applicable to the Contract during its term. This Contract shall always be read and interpreted in accordance with the latest applicable wording and requirements of the Enactments. Unless otherwise provided by Enactments, the Contractor is not relieved of its obligation to perform under this Contract if it chooses to contest the applicability of the Enactments or the Client Agency's authority to require compliance with the Enactments.

(b) This Contract is subject to the provisions of Executive Order No. Three of Governor Thomas J. Meskill, promulgated June 16, 1971, concerning labor employment practices, Executive Order No. Seventeen of Governor Thomas J. Meskill, promulgated February 15, 1973, concerning the listing of employment openings and Executive Order No. Sixteen of Governor John G. Rowland promulgated August 4, 1999, concerning violence in the workplace, all of which are incorporated into and are made a part of this Contract as if they had been fully set forth in it.

(c) This Contract may be subject to (1) Executive Order No. 14 of Governor M. Jodi Rell, promulgated April 17, 2006, concerning procurement of cleaning products and services; and (2) Executive Order No. 61 of Governor Dannel P. Malloy promulgated December 13, 2017, concerning the Policy for the Management of State Information Technology Projects, as issued by the Office of Policy and Management, Policy ID IT-SDLC-17-
04. If any of the Executive Orders referenced in this subsection is applicable, it is deemed to be incorporated into and made a part of this Contract as if fully set forth in it.

9. Non-Discrimination Requirement and Certification (pursuant to section 4a-60 and 4a-60a o f the Connecticut General Statutes, as revised): References to "minority business enterprises" in this Section are not applicable to Federal-aid projects/contracts. Federal-aid projects/contracts are instead subject to the Federal Disadvantaged Business Enterprise Program.

(a) For purposes of this Section, the following terms are defined as follows:

i. "Commission" means the Commission on Human Rights and Opportunities;

ii. "Contract" and "contract" include any extension or modification of the Contract or contract;

iii. "Contractor" and "contractor" include any successors or assigns of the Contractor or contractor;

iv. "Gender identity or expression" means a person's gender-related identity, appearance or behavior, whether or not that gender-related identity, appearance or behavior is different from that traditionally associated with the person's physiology or assigned sex at birth, which gender-related identity can be shown by providing evidence including, but not limited to, medical history, care or treatment of the gender-related identity, consistent and uniform assertion of the gender-related identity or any other evidence that the gender-related identity is sincerely held, part of a person's core identity or not being asserted for an improper purpose;

v. "good faith" means that degree of diligence which a reasonable person would exercise in the performance of legal duties and obligations;

vi. "good faith efforts" includes, but is not limited to, those reasonable initial efforts necessary to comply with statutory or regulatory requirements and additional or substituted efforts when it is determined that such initial efforts will not be sufficient to comply with such requirements;

vii. "marital status" means being single, married as recognized by the state of Connecticut, widowed, separated or divorced;

viii. "mental disability" means one or more mental disorders, as defined in the most recent edition of the American Psychiatric Association's "Diagnostic and Statistical Manual of Mental Disorders", or a record of or regarding a person as having one or more such disorders;

ix. "minority business enterprise" means any small contractor (1) fifty-one per cent or more of the capital stock, if any, or assets of which are owned by a person or persons who (a) exercise operational authority over the daily affairs of the enterprise, (b) have the power to direct the management and policies and receive the beneficial interest of the enterprise, (c) possess managerial and technical competence and experience directly related to the principal business activities of the enterprise, and (d) are members of a minority, as defined in C.G.S. § 32-9n, or are individuals with a disability, or (2) which is a nonprofit corporation in which fifty-one per cent or more of the persons who exercise operational authority over the enterprise, (a) possess managerial and technical competence and experience directly related to the principal business activities of the enterprise, (b) have the power to direct the management and policies of the enterprise, and (c) are member of a minority, as defined in C.G.S. § 32-9n, or are individuals with a disability; and

x. "public works contract" means any agreement (A) for construction, rehabilitation, conversion, extension, demolition or repair of changes or improvements in real property, and (B) that is financed in whole or in part by the state, including, but not limited to, matching expenditures, grants, loans, insurance or guarantees where such funding equals one hundred fifty thousand dollars or more.

For purposes of this Section, the terms “Contract” and “contract” do not include a contract where each contractor is (1) a political subdivision of the state, including, but not limited to, a municipality, unless the contract is a public works contract, (2) any other state, including but not limited to any federally recognized Indian tribal governments, as defined in C.G.S. § 1-267, (3) the federal government, (4) a foreign government, or (5) an agency of a subdivision, state or government described in the immediately preceding enumerated items (1), (2), (3),or (4).

(b) (1) The Contractor agrees and warrants that in the performance of the Contract such Contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color, religious creed, age, marital status, national origin, ancestry, sex, sexual orientation, gender identity or expression, status as a veteran, status as a victim of domestic violence, status as a victim of sexual assault or status as a victim of trafficking in persons, intellectual disability, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by such Contractor that such disability prevents performance of the work involved, in any manner prohibited by the laws of the United States or of the State of Connecticut; and the Contractor further agrees to take affirmative action to ensure that applicants with job-related qualifications are employed and that employees are treated when employed without regard to their race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, sexual orientation, status as a veteran, status as a victim of domestic violence, status as a victim of sexual assault or status as a victim of trafficking in persons,

intellectual disability, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by the Contractor that such disability prevents performance of the work involved;

(2) the Contractor agrees, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, to state that it is an "affirmative action-equal opportunity employer" in accordance with regulations adopted by the Commission;

(3) the Contractor agrees to provide each labor union or representative of workers with which the Contractor has a collective bargaining Agreement or other contract or understanding and each vendor with which the Contractor has a contract or understanding, a notice to be provided by the Commission, advising the labor union or workers' representative of the Contractor's commitments under this Section and to post copies of the notice in conspicuous places available to employees and applicants for employment;

(4) the Contractor agrees to comply with each provision of this Section and Connecticut General Statutes §§ 46a-68e and 46a-68f and with each regulation or relevant order issued by said Commission pursuant to Connecticut General Statutes §§ 46a-56, 46a-68e, 46a-68f and 46a-86; and

(5) the Contractor agrees to provide the Commission with such information requested by the Commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the Contractor as relate to the provisions of this Section and Connecticut General Statutes § 46a-56. If the contract is a public works contract, the Contractor agrees and warrants that he or she will make good faith efforts to employ minority business enterprises as subcontractors and suppliers of materials on such public works projects.

(c) Determination of the Contractor's good faith efforts shall include, but shall not be limited to, the following factors: The Contractor's employment and subcontracting policies, patterns and practices; the timing and value of bids; affirmative advertising, recruitment and training; technical assistance activities and such other reasonable activities or efforts as the Commission may prescribe that are designed to ensure the participation of minority business enterprises in public works projects.

(d) The Contractor shall develop and maintain adequate documentation, in a manner prescribed by the Commission, of its good faith efforts.

(e) The Contractor shall include the provisions of subsection (b) of this Section in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the State, and in every subcontract entered into in order to fulfill any obligation of a public works contract, and such provisions shall be binding on a subcontractor, vendor or manufacturer unless exempted by regulations or orders of the Commission. The Contractor shall take such action with respect to any such subcontract or purchase order as the Commission may direct as a means of enforcing such provisions, including sanctions for noncompliance in accordance with Connecticut General Statutes § 46a-56; provided, if such Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the Commission, the Contractor may request the State of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the State and the State may so enter.

(f) The Contractor agrees to comply with the regulations referred to in this Section as they exist on the date of this Contract and as they may be adopted or amended from time to time during the term of this Contract and any amendments thereto.

(g) Pursuant to subsection (c) of section 4a-60 of the Connecticut General Statutes, the Contractor, for itself and its authorized signatory of this Contract, affirms that it understands the obligations of this Section and that it will maintain a policy for the duration of the Contract to assure that the Contract will be performed in compliance with the nondiscrimination requirements of such section. The Contractor and its authorized signatory of this Contract demonstrate their understanding of this obligation by (A) having provided an affirmative response in the required online bid or response to a proposal question which asks if the contractor understands its obligations under such sections, (B) signing this Contract, or (C) initialing this nondiscrimination affirmation in the following box: ☐

10. Whistleblower Provision

The following clause is applicable if the Contract has a value of Five Million Dollars ($5,000,000) or more.

Whistleblowing. This Contract may be subject to the provisions of Section 4-61dd of the Connecticut General Statutes. In accordance with this statute, if an officer, employee or appointing authority of the Contractor takes or threatens to take any personnel action against any employee of the Contractor in retaliation for such employee's disclosure of information to any employee of the contracting state or quasi-public agency or the Auditors of Public Accounts or the Attorney General under the provisions of subsection (a) of such statute, the Contractor shall be liable for a civil penalty of not more than five thousand dollars for each offense, up to a maximum of twenty per cent of the value of this Contract. Each violation shall be a separate and distinct offense and in the case of a continuing violation, each calendar day's continuance of the violation shall be deemed to be a separate and distinct offense. The State may request that the Attorney General bring a civil action in the Superior Court for the Judicial District of Hartford to seek imposition and recovery of such civil penalty. In accordance with subsection (f) of such statute, each large state contractor, as defined in the statute, shall post a notice of the provisions of the statute relating to large state contractors in a conspicuous place which is readily available for viewing by the employees of the Contractor.

11. Connecticut Freedom of Information Act

(a) Disclosure of Records. This Contract may be subject to the provisions of section 1-218 of the Connecticut General Statutes. In accordance with this statute, each contract in excess of two million five hundred thousand dollars between a public agency and a person for the performance of a governmental function shall (a) provide that the public agency is entitled to receive a copy of records and files related to the performance of the governmental function, and (b) indicate that such records and files are subject to FOIA and may be disclosed by the public agency pursuant to FOIA. No request to inspect or copy such records or files shall be valid unless the request is made to the public agency in accordance with FOIA. Any complaint by a person who is denied the right to inspect or copy such records or files shall be brought to the Freedom of Information Commission in accordance with the provisions of sections 1-205 and 1-206 of the Connecticut General Statutes.

(b) Confidential Information. The State will afford due regard to the Contractor's request for the protection of proprietary or confidential information which the State receives from the Contractor. However, all materials associated with the Contract are subject to the terms of the FOIA and all corresponding rules, regulations and

interpretations. In making such a request, the Contractor may not merely state generally that the materials are proprietary or confidential in nature and not, therefore, subject to release to third parties. Those particular sentences, paragraphs, pages or sections that the Contractor believes are exempt from disclosure under the FOIA must be specifically identified as such. Convincing explanation and rationale sufficient to justify each exemption consistent with the FOIA must accompany the request. The rationale and explanation must be stated in terms of the prospective harm to the competitive position of the Contractor that would result if the identified material were to be released and the reasons why the materials are legally exempt from release pursuant to the FOIA. To the extent that any other provision or part of the Contract conflicts or is in any way inconsistent with this section, this section controls and shall apply, and the conflicting provision or part shall not be given effect. If the Contractor indicates that certain documentation is submitted in confidence, by specifically and clearly marking the documentation as "CONFIDENTIAL," DOT will first review the Contractor's claim for consistency with the FOIA (that is, review that the documentation is actually a trade secret or commercial or financial information and not required by statute), and if determined to be consistent, will endeavor to keep such information confidential to the extent permitted by law. See, *e.g.,* Conn. Gen. Stat. §1- 210(b)(5) (A-B). The State, however, has no obligation to initiate, prosecute or defend any legal proceeding or to seek a protective order or other similar relief to prevent disclosure of any information that is sought pursuant to a FOIA request. Should the State withhold such documentation from a Freedom of Information requester and a complaint be brought to the Freedom of Information Commission, the Contractor shall have the burden of cooperating with DOT in defense of that action and in terms of establishing the availability of any FOIA exemption in any proceeding where it is an issue. In no event shall the State have any liability for the disclosure of any documents or information in its possession which the State believes are required to be disclosed pursuant to the FOIA or other law.

12. Service of Process

The Contractor, if not a resident of the State of Connecticut, or, in the case of a partnership, the partners, if not residents, hereby appoints the Secretary of State of the State of Connecticut, and his successors in office, as agent for service of process for any action arising out of or as a result of this Contract; such appointment to be in effect throughout the life of this Contract and six (6) years thereafter.

13. Substitution of Securities for Retainages on State Contracts and Subcontracts

This Contract is subject to the provisions of Section 3-ll2a of the General Statutes of the State of Connecticut, as revised.

14. Health Insurance Portability and Accountability Act of 1996 (HIPAA)

The Contractor shall comply, if applicable, with the Health Insurance Portability and Accountability Act of 1996 and, pursuant thereto, the provisions attached at Exhibit D, and hereby made part of this Contract.

15. Forum and Choice of Law

The parties deem the Contract to have been made in the City of Hartford, State of Connecticut. Both parties agree that it is fair and reasonable for the validity and construction of the Contract to be, and it shall be, governed by the laws and court decisions of the State of Connecticut, without giving effect to its principles of conflicts of laws. To the extent that any immunities provided by Federal law or the laws of the State of Connecticut do not bar an action against the State, and to the extent that these courts are courts of competent jurisdiction, for the purpose of venue, the complaint shall be made returnable to the Judicial District of Hartford only or shall be brought in the United States District Court for the District of Connecticut only, and shall not be transferred to any other court, provided, however, that nothing here constitutes a waiver or compromise of the sovereign immunity of the State of Connecticut. The Contractor waives any objection which it may now have or will have to the laying of venue of any Claims in any forum and further irrevocably submits to such jurisdiction in any suit, action or proceeding.

16. Summary of State Ethics Laws

Pursuant to the requirements of section 1-101qq of the Connecticut General Statutes (a) the State has provided to the Contractor the summary of State ethics laws developed by the Office of State Ethics pursuant to section 1-81b of the Connecticut General Statutes, which summary is incorporated by reference into and made a part of this Contract as if the summary had been fully set forth in this Contract; (b) the Contractor represents that the chief executive officer or authorized signatory of the Contract and all key employees of such officer or signatory have read and understood the summary and agree to comply with the provisions of state ethics law; (c) prior to entering into a contract with any subcontractors or consultants, the Contractor shall provide the summary to all subcontractors and consultants and each such contract entered into with a subcontractor or consultant on or after July 1, 2021, shall include a representation that each subcontractor or consultant and the key employees of such subcontractor or consultant have read and understood the summary and agree to comply with the provisions of state ethics law; (d) failure to include such representations in such contracts with subcontractors or consultants shall be cause for termination of the Contract; and (e) each contract with such contractor, subcontractor or consultant shall incorporate such summary by reference as a part of the contract terms.

17. Audit and Inspection of Plants, Places of Business and Records

(a) The State and its agents, including, but not limited to, the Connecticut Auditors of Public Accounts, Attorney General and State's Attorney and their respective agents, may, at reasonable hours, inspect and examine all of the parts of the Contractor's and Contractor Parties' plants and places of business which, in any way, are related to, or involved in, the performance of this Contract. For the purposes of this Section, "Contractor Parties" means the Contractor's members, directors, officers, shareholders, partners, managers, principal officers, representatives, agents, servants, consultants, employees or any one of them or any other person or entity with whom the Contractor is in privity of oral or written contract and the Contractor intends for such other person or entity to Perform under the Contract in any capacity.

(b) The Contractor shall maintain and shall require each of the Contractor Parties to maintain, accurate and complete Records. The Contractor shall make all of its and the Contractor Parties' Records available at all reasonable hours for audit and inspection by the State and its agents.

(c) The State shall make all requests for any audit or inspection in writing and shall provide the Contractor with at least twenty-four (24) hours' notice prior to the requested audit and inspection date. If the State suspects fraud or other abuse, or in the event of an emergency, the State is not obligated to provide any prior notice.

(d) The Contractor shall keep and preserve or cause to be kept and preserved all of its and Contractor Parties' Records until three (3) years after the latter of (i) final payment under this Agreement, or (ii) the expiration or earlier termination of this Agreement, as the same may be modified for any reason. The State may request an audit or inspection at any time during this period. If any Claim or audit is started before the expiration of this period, the Contractor shall retain or cause to be retained all Records until all Claims or audit findings have been resolved.

(e) The Contractor shall cooperate fully with the State and its agents in connection with an audit or inspection. Following any audit or inspection, the State may conduct, and the Contractor shall cooperate with an exit conference.

(f) The Contractor shall incorporate this entire Section verbatim into any contract or other agreement that it enters into with any Contractor Party.

18. Campaign Contribution Restriction

Campaign Contribution Restriction. For all State contracts, defined in section 9-612 of the Connecticut General Statutes as having a value of $50,000 or more, or a combination or series of such agreements or contracts having a value of $100,000 or more in a calendar year, the authorized signatory to this Agreement represents that they have received the State Elections Enforcement Commission's notice advising state contractors of state campaign contribution and solicitation prohibitions, and will inform its principals of the contents of the notice.

19. Tangible Personal Property

(a) The Contractor on its behalf and on behalf of its Affiliates, as defined below, shall comply with the provisions of Conn. Gen. Stat. §12-411b, as follows:

(1) For the term of the Contract, the Contractor and its Affiliates shall collect and remit to the State of Connecticut, Department of Revenue Services, any Connecticut use tax due under the provisions of Chapter 219 of the Connecticut General Statutes for items of tangible personal property sold by the Contractor or by any of its Affiliates in the same manner as if the Contractor and such Affiliates were engaged in the business of selling tangible personal property for use in Connecticut and had sufficient nexus under the provisions of Chapter 219 to be required to collect Connecticut use tax;

(2) A customer's payment of a use tax to the Contractor or its Affiliates relieves the customer of liability for the use tax;

(3) The Contractor and its Affiliates shall remit all use taxes they collect from customers on or before the due date specified in the Contract, which may not be later than the last day of the month next succeeding the end of a calendar quarter or other tax collection period during which the tax was collected;

(4) The Contractor and its Affiliates are not liable for use tax billed by them but not paid to them by a customer; and

(5) Any Contractor or Affiliate who fails to remit use taxes collected on behalf of its customers by the due date specified in the Contract shall be subject to the interest and penalties provided for persons required to collect sales tax under chapter 219 of the general statutes.

(b) For purposes of this section of the Contract, the word "Affiliate" means any person, as defined in section 12-1 of the general statutes, that controls, is controlled by, or is under common control with another person. A person controls another person if the person owns, directly or indirectly, more than ten per cent of the voting securities of the other person. The word "voting security" means a security that confers upon the holder the right to vote for the election of members of the board of directors or similar governing body of the business, or

that is convertible into, or entitles the holder to receive, upon its exercise, a security that confers such a right to vote. "Voting security" includes a general partnership interest.

(c) The Contractor represents and warrants that each of its Affiliates has vested in the Contractor plenary authority to so bind the Affiliates in any agreement with the State of Connecticut. The Contractor on its own behalf and on behalf of its Affiliates shall also provide, no later than 30 days after receiving a request by the State's contracting authority, such information as the State may require to ensure, in the State's sole determination, compliance with the provisions of Chapter 219 of the Connecticut General Statutes, including, but not limited to, §12-411b.

20. Bid Rigging and/or Fraud – Notice to Contractor

The Connecticut Department of Transportation is cooperating with the U.S. Department of Transportation and the Justice Department in their investigation into highway construction contract bid rigging and/or fraud.

A toll-free "HOT LINE" telephone number 800-424-9071 has been established to receive information from contractors, subcontractors, manufacturers, suppliers or anyone with knowledge of bid rigging and/or fraud, either past or current. The "HOT LINE" telephone number will be available during normal working hours (8:00 am – 5:00 pm EST). Information will be treated confidentially, and anonymity respected.

21. Consulting Agreement Representation

Pursuant to section 4a-81 of the Connecticut General Statutes, the person signing this Contract on behalf of the Contractor represents, to their best knowledge and belief and subject to the penalty of false statement as provided in section 53a-157b of the Connecticut General Statutes, that the Contractor has not entered into any consulting agreements in connection with this Contract, except for the agreements listed below or in an attachment to this Contract. "Consulting agreement" means any written or oral agreement to retain the services, for a fee, of a consultant for the purposes of

(A) providing counsel to a contractor, vendor, consultant or other entity seeking to conduct, or conducting, business with the State, (B) contacting, whether in writing or orally, any executive, judicial, or administrative office of the State, including any department, institution, bureau, board, commission, authority, official or employee for the purpose of solicitation, dispute resolution, introduction, requests for information, or (C) any other similar activity related to such contracts. "Consulting agreement" does not include any agreements entered into with a consultant who is registered under the provisions of chapter 10 of the Connecticut General Statutes as of the date such contract is executed in accordance with the provisions of section 4a-81 of the Connecticut General Statutes.

Consultant's Name and Title _____ Name of Firm (if applicable) _____

Start Date _____ End Date _____ Cost _____

The basic terms of the consulting agreement are: _____

Description of Services Provided: _____

Is the consultant a former State employee or former public official? ☐ YES ☐ NO If YES: _____

Name of Former State Agency Termination Date of Employment

22. Cargo Preference Act Requirements (46 CFR 381.7(a)-(b)) – Use of United States Flag Vessels

The Contractor agrees to comply with the following:

(a) ***Agreement Clauses***.

(1) Pursuant to Pub. L. 664 (43 U.S.C. 1241(b)) at least 50 percent of any equipment, materials or commodities procured, contracted for or otherwise obtained with funds granted, guaranteed, loaned, or advanced by the U.S. Government under this agreement, and which may be transported by ocean vessel, shall be transported on privately owned United States-flag commercial vessels, if available.

(2) Within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (a)(1) of this section shall be furnished to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of- lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.

(b) ***Contractor and Subcontractor Clauses.*** The contractor agrees—

(1) To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels.

(2) To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean

bill-of-lading in English for each shipment of cargo described in paragraph (b) (1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.

(3) To insert the substance of the provisions of this clause in all subcontracts issued pursuant to this contract.

23. Sovereign Immunity

The parties acknowledge and agree that nothing in the Solicitation or the Contract shall be construed as a modification, compromise or waiver by the State of any rights or defenses of any immunities provided by Federal law or the laws of the State of Connecticut to the State or any of its officers and employees, which they may have had, now have or will have with respect to all matters arising out of the Contract. To the extent that this section conflicts with any other section, this section shall govern.

24. Large State Contract Representation for Contractor

Pursuant to section 4-252 of the Connecticut General Statutes and Acting Governor Susan Bysiewicz Executive Order No. 21-2, promulgated July 1, 2021, the Contractor, for itself and on behalf of all of its principals or key personnel who submitted a bid or proposal, represents:

(1) That no gifts were made by (A) the Contractor, (B) any principals and key personnel of the Contractor, who participate substantially in preparing bids, proposals or negotiating State contracts, or (C) any agent of the Contractor or principals and key personnel, who participates substantially in preparing bids, proposals or negotiating State contracts, to (i) any public official or State employee of the State agency or quasi- public agency soliciting bids or proposals for State contracts, who participates substantially in the preparation of bid solicitations or requests for proposals for State contracts or the negotiation or award of State contracts, or (ii) any public official or State employee of any other State agency, who has supervisory or appointing authority over such State agency or quasi-public agency;

(2) That no such principals and key personnel of the Contractor, or agent of the Contractor or of such principals and key personnel, knows of any action by the Contractor to circumvent such prohibition on gifts by providing for any other principals and key personnel, official, employee or agent of the Contractor to provide a gift to any such public official or State employee; and

(3) That the Contractor is submitting bids or proposals without fraud or collusion with any person.

25. Large State Contract Representation for Official or Employee of State Agency

Pursuant to section 4-252 of the Connecticut General Statutes and Acting Governor Susan Bysiewicz Executive Order No. 21-2, promulgated July 1, 2021, the State agency official or employee represents that the selection of the person, firm or corporation was not the result of collusion, the giving of a gift or the promise of a gift, compensation, fraud or inappropriate influence from any person.

26. Iran Investment Energy Certification

(a) Pursuant to section 4-252a of the Connecticut General Statutes, the Contractor certifies that it has not made a direct investment of twenty million dollars or more in the energy sector of Iran on or after October 1, 2013, as described in Section 202 of the Comprehensive Iran Sanctions, Accountability and Divestment Act of 2010, and has not increased or renewed such investment on or after said date.

(b) If the Contractor makes a good faith effort to determine whether it has made an investment described in subsection (a) of this section, then the Contractor shall not be deemed to be in breach of the Contract or in violation of this section.

A "good faith effort" for purposes of this subsection includes a determination that the Contractor is not on the list of persons who engage in certain investment activities in Iran created by the Department of General Services of the State of California pursuant to Division 2, Chapter 2.7 of the California Public Contract Code. Nothing in this subsection shall be construed to impair the ability of the State agency or quasi-public agency to pursue a breach of contract action for any violation of the provisions of the Contract.

27. Access to Contract and State Data

The Contractor shall provide to the Client Agency access to any data, as defined in Conn. Gen Stat. Sec. 4e-1, concerning the Contract and the Client Agency that are in the possession or control of the Contractor upon demand and shall provide the data to the Client Agency in a format prescribed by the Client Agency and the State Auditors of Public Accounts at no additional cost.

28. Affirmative Action Policy Statement

The Contractor shall comply with the Affirmative Action Policy Statement, as applicable, attached at Exhibit E and hereby made part of this Contract.

29. Compliance with Consumer Data Privacy and Online Monitoring

Pursuant to section 4e-72a of the Connecticut General Statutes, Contractor shall at all times comply with all applicable provisions of sections 42-515 to 42-525, inclusive, of the Connecticut General Statutes, as the same may be revised or modified.

EXHIBIT A

FHWA-1273 – Revised October 23, 2023

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

I. General
II. Nondiscrimination
III. Non-segregated Facilities
IV. Davis-Bacon and Related Act Provisions
V. Contract Work Hours and Safety Standards Act Provisions
VI. Subletting or Assigning the Contract
VII. Safety: Accident Prevention
VIII. False Statements Concerning Highway Projects
IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
X. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion
XI. Certification Regarding Use of Contract Funds for Lobbying
XII. Use of United States-Flag Vessels:

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under title 23, United States Code, as required in 23 CFR 633.102(b) (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services). 23 CFR 633.102(e).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider. 23 CFR 633.102(e).

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services) in accordance with 23 CFR 633.102. The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in solicitation-for-bids or request-for-proposals documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract). 23 CFR 633.102(b).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract. 23 CFR 633.102(d).

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. 23 U.S.C. 114(b). The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors. 23 U.S.C. 101(a).

II. NONDISCRIMINATION (23 CFR 230.107(a); 23 CFR Part 230, Subpart A, Appendix A; EO 11246)

The provisions of this section related to 23 CFR Part 230, Subpart A, Appendix A are applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR Part 60, 29 CFR Parts 1625-1627, 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding $10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR Part 60, and 29 CFR Parts 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), and Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR Part 230, Subpart A, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal Employment Opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (*see* 28 CFR Part 35, 29 CFR Part 1630, 29 CFR Parts 1625-1627, 41 CFR Part 60 and 49 CFR Part 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140, shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR Part 35 and 29 CFR Part 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract. 23 CFR 230.409 (g)(4) & (5).

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, sexual orientation, gender identity, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action or are substantially involved in such action, will be made fully cognizant of and will implement the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to ensure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action

within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs (i.e., apprenticeship and on-the-job training programs for the geographical area of contract performance). In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. 23 CFR 230.409. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established thereunder. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors, suppliers, and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurances Required:

a. The requirements of 49 CFR Part 26 and the State DOT's FHWA-approved Disadvantaged Business Enterprise (DBE) program are incorporated by reference.

b. The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:
(1) Withholding monthly progress payments;
(2) Assessing sanctions;
(3) Liquidated damages; and/or
(4) Disqualifying the contractor from future bidding as non-responsible.

c. The Title VI and nondiscrimination provisions of U.S. DOT Order 1050.2A at Appendixes A and E are incorporated by reference. 49 CFR Part 21.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women.

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of more than $10,000. 41 CFR 60-1.5.

As prescribed by 41 CFR 60-1.8, the contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, sexual orientation, gender identity, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location under the contractor's control where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size), in accordance with 29 CFR 5.5. The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. 23 U.S.C. 113. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. 23 U.S.C. 101. Where applicable law requires that projects be treated as a project on a Federal-aid highway, the provisions of this subpart will apply regardless of the location of the project. Examples include: Surface Transportation Block Grant Program projects funded under 23 U.S.C. 133 [excluding recreational trails projects], the Nationally Significant Freight and Highway Projects funded under 23 U.S.C. 117, and National Highway Freight Program projects funded under 23 U.S.C. 167.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 “Contract provisions and related matters” with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages (29 CFR 5.5)

a. *Wage rates and fringe benefits.* All laborers and mechanics employed or working upon the site of the work (or otherwise working in construction or development of the project under a development statute), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of basic hourly wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. As provided in paragraphs (d) and (e) of 29 CFR 5.5, the appropriate wage determinations are effective by operation of law even if they have not been attached to the contract. Contributions made or costs reasonably anticipated for bona fide fringe benefits under the Davis-Bacon Act (40 U.S.C. 3141(2)(B)) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.e. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics must be paid the appropriate wage rate and fringe benefits on the wage determination for the classification(s) of work actually performed, without regard to skill, except as provided in paragraph 4. of this section. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: *Provided,* That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph 1.c. of this section) and the Davis-Bacon poster (WH–1321) must be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. *Frequently recurring classifications.* (1) In addition to wage and fringe benefit rates that have been determined to be prevailing under the procedures set forth in 29 CFR part 1, a wage determination may contain, pursuant to § 1.3(f), wage and fringe benefit rates for classifications of laborers and mechanics for which conformance requests are regularly submitted pursuant to paragraph 1.c. of this section, provided that:

(i) The work performed by the classification is not performed by a classification in the wage determination for which a prevailing wage rate has been determined;

(ii) The classification is used in the area by the construction industry; and

(iii) The wage rate for the classification bears a reasonable relationship to the prevailing wage rates contained in the wage determination.

(2) The Administrator will establish wage rates for such classifications in accordance with paragraph 1.c.(1)(iii) of this section. Work performed in such a classification must be paid at no less than the wage and fringe benefit rate listed on the wage determination for such classification.

c. *Conformance.* (1) The contracting officer must require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract be classified in conformance with the wage determination. Conformance of an additional classification and wage rate and fringe benefits is appropriate only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is used in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) The conformance process may not be used to split, subdivide, or otherwise avoid application of classifications listed in the wage determination.

(3) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken will be sent by the contracting officer by email to DBAconformance@dol.gov. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30–day period that additional time is necessary.

(4) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer will, by email to DBAconformance@dol.gov, refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30–day period that additional time is necessary.

(5) The contracting officer must promptly notify the contractor of the action taken by the Wage and Hour Division under paragraphs 1.c.(3) and (4) of this section. The contractor must furnish a written copy of such determination to each affected worker or it must be posted as a part of the wage determination. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 1.c.(3) or (4) of this section must be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

d. *Fringe benefits not expressed as an hourly rate.* Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor may either pay the benefit as stated in the wage determination or may pay another bona fide fringe benefit or an hourly cash equivalent thereof.

e. *Unfunded plans.* If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, *Provided,* That the Secretary of Labor has found, upon the written request of the contractor, in accordance with the criteria set forth in § 5.28, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

f. *Interest.* In the event of a failure to pay all or part of the wages required by the contract, the contractor will be required to pay interest on any underpayment of wages.

2. Withholding (29 CFR 5.5)

a. *Withholding requirements.* The contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for the full amount of wages and monetary relief, including interest, required by the clauses set forth in this section for violations of this contract, or to satisfy any such liabilities required by any other Federal contract, or federally assisted contract subject to Davis-Bacon labor standards, that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to Davis-Bacon labor standards requirements and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld. In the event of a contractor's failure to pay any laborer or mechanic, including any apprentice or helper working on the site of the work all or part of the wages required by the contract, or upon the contractor's failure to submit the required records as discussed in paragraph 3.d. of this section, the contracting agency may on its own initiative and after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with paragraph

2.a. of this section or Section V, paragraph 3.a., or both, over claims to those funds by:

(1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;

(2) A contracting agency for its reprocurement costs;

(3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;

(4) A contractor's assignee(s);

(5) A contractor's successor(s); or

(6) A claim asserted under the Prompt Payment Act, 31 U.S.C. 3901–3907.

3. Records and certified payrolls (29 CFR 5.5)

a. *Basic record requirements* (1) *Length of record retention.* All regular payrolls and other basic records must be maintained by the contractor and any subcontractor during the course of the work and preserved for all laborers and mechanics working at the site of the work (or otherwise working in construction or development of the project under a development statute) for a period of at least 3 years after all the work on the prime contract is completed.

(2) *Information required.* Such records must contain the name; Social Security number; last known address, telephone number, and email address of each such worker; each worker's correct classification(s) of work actually performed; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in 40 U.S.C. 3141(2)(B) of the Davis-Bacon Act); daily and weekly number of hours actually worked in total and on each covered contract; deductions made; and actual wages paid.

(3) *Additional records relating to fringe benefits.* Whenever the Secretary of Labor has found under paragraph 1.e. of this section that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in 40 U.S.C. 3141(2)(B) of the Davis-Bacon Act, the contractor must maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits.

(4) *Additional records relating to apprenticeship.* Contractors with apprentices working under approved programs must maintain written evidence of the registration of apprenticeship programs, the registration of the apprentices, and the ratios and wage rates prescribed in the applicable programs.

b. *Certified payroll requirements* (1) *Frequency and method of submission.* The contractor or subcontractor must submit weekly, for each week in which any DBA- or Related Acts-covered work is performed, certified payrolls to the contracting agency. The prime contractor is responsible for the submission of all certified payrolls by all subcontractors. A contracting agency or prime contractor may permit or require contractors to submit certified payrolls through an electronic system, as long as the electronic system requires a legally valid electronic signature; the system allows the contractor, the contracting agency, and the Department of Labor to access the certified payrolls upon request for at least 3 years after the work on the prime contract has been completed; and the contracting agency or prime contractor permits other methods of submission in situations where the contractor is unable or limited in its ability to use or access the electronic system.

(2) *Information required.* The certified payrolls submitted must set out accurately and completely all of the information required to be maintained under paragraph 3.a.(2) of this section, except that full Social Security numbers and last known addresses, telephone numbers, and email addresses must not be included on weekly transmittals. Instead, the certified payrolls need only include an individually identifying number for each worker (*e.g.,* the last four digits of the worker's Social Security number). The required weekly certified payroll information may be submitted using Optional Form WH–347 or in any other format desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division website at *https://www.dol.gov/sites/dolgov/files/WHD/legacy/files/wh347/.pdf* or its successor website. It is not a violation of this section for a prime contractor to require a subcontractor to provide full Social Security numbers and last known addresses, telephone numbers, and email addresses to the prime contractor for its own records, without weekly submission by the subcontractor to the contracting agency.

(3) *Statement of Compliance.* Each certified payroll submitted must be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor, or the contractor's or subcontractor's agent who pays or supervises the payment of the persons working on the contract, and must certify the following:

(i) That the certified payroll for the payroll period contains the information required to be provided under paragraph 3.b. of this section, the appropriate information and basic records are being maintained under paragraph 3.a. of this section, and such information and records are correct and complete;

(ii) That each laborer or mechanic (including each helper and apprentice) working on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR part 3; and

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification(s) of work actually performed, as specified in the applicable wage determination incorporated into the contract.

(4) *Use of Optional Form WH–347.* The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 will satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(3) of this section.

(5) *Signature.* The signature by the contractor, subcontractor, or the contractor's or subcontractor's agent must be an original handwritten signature or a legally valid electronic signature.

(6) *Falsification.* The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 3729.

(7) *Length of certified payroll retention.* The contractor or subcontractor must preserve all certified payrolls during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

c. *Contracts, subcontracts, and related documents.* The contractor or subcontractor must maintain this contract or subcontract and related documents including, without limitation, bids, proposals, amendments, modifications, and extensions. The contractor or subcontractor must preserve these contracts, subcontracts, and related documents during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

d. *Required disclosures and access* (1) *Required record disclosures and access to workers.* The contractor or subcontractor must make the records required under paragraphs 3.a. through 3.c. of this section, and any other documents that the contracting agency, the State DOT, the FHWA, or the Department of Labor deems necessary to determine compliance with the labor standards provisions of any of the applicable statutes referenced by § 5.1, available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and must permit such representatives to interview workers during working hours on the job.

(2) *Sanctions for non-compliance with records and worker access requirements.* If the contractor or subcontractor fails to submit the required records or to make them available, or refuses to permit worker interviews during working hours on the job, the Federal agency may, after written notice to the contractor, sponsor, applicant, owner, or other entity, as the case may be, that maintains such records or that employs such workers, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available, or to permit worker interviews during working hours on the job, may be grounds for debarment action pursuant to § 5.12. In addition, any contractor or other person that fails to submit the required records or make those records available to WHD within the time WHD requests that the records be produced will be precluded from introducing as evidence in an administrative proceeding under 29 CFR part 6 any of the required records that were not provided or made available to WHD. WHD will take into consideration a reasonable request from the contractor or person for an extension of the time for submission of records. WHD will determine the reasonableness of the request and may consider, among other things, the location of the records and the volume of production.

(3) *Required information disclosures.* Contractors and subcontractors must maintain the full Social Security number and last known address, telephone number, and email address of each covered worker, and must provide them upon request to the contracting agency, the State DOT, the FHWA, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or other compliance action.

4. Apprentices and equal employment opportunity (29 CFR 5.5)

a. *Apprentices* (1) *Rate of pay.* Apprentices will be permitted to work at less than the predetermined rate for the work they perform when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship (OA), or with a State Apprenticeship Agency recognized by the OA. A person who is not individually registered in the program, but who has been certified by the OA or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice, will be permitted to work at less than the predetermined rate for the work they perform in the first 90 days of probationary employment as an apprentice in such a program. In the event the OA or a State Apprenticeship Agency recognized by the OA withdraws approval of an apprenticeship program, the contractor will no longer be permitted to use apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(2) *Fringe benefits.* Apprentices must be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringe benefits must be paid in accordance with that determination.

(3) *Apprenticeship ratio.* The allowable ratio of apprentices to journeyworkers on the job site in any craft classification must not be greater than the ratio permitted to the contractor as to the entire work force under the registered program or the ratio applicable to the locality of the project pursuant to paragraph 4.a.(4) of this section. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in paragraph 4.a.(1) of this section, must be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under this section must be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(4) *Reciprocity of ratios and wage rates.* Where a contractor is performing construction on a project in a locality other than the locality in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyworker's hourly rate) applicable within the locality in which the construction is being performed must be observed. If there is no applicable ratio or wage rate for the locality of the project, the ratio and wage rate specified in the contractor's registered program must be observed.

b. *Equal employment opportunity.* The use of apprentices and journeyworkers under this part must be in conformity with

the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

c. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. 23 CFR 230.111(e)(2). The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeyworkers shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract as provided in 29 CFR 5.5.

6. Subcontracts. The contractor or subcontractor must insert FHWA-1273 in any subcontracts, along with the applicable wage determination(s) and such other clauses or contract modifications as the contracting agency may by appropriate instructions require, and a clause requiring the subcontractors to include these clauses and wage determination(s) in any lower tier subcontracts. The prime contractor is responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this section. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and may be subject to debarment, as appropriate. 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract as provided in 29 CFR 5.5.

9. Disputes concerning labor standards. As provided in 29 CFR 5.5, disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility. a. By entering into this contract, the contractor certifies that neither it nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of 40 U.S.C. 3144(b) or § 5.12(a).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of 40 U.S.C. 3144(b) or § 5.12(a).

c. The penalty for making false statements is prescribed in the U.S. Code, Title 18 Crimes and Criminal Procedure, 18 U.S.C. 1001.

11. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the DBA, Related Acts, this part, or 29 CFR part 1 or 3;

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under the DBA, Related Acts, this part, or 29 CFR part 1 or 3;

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under the DBA, Related Acts, this part, or 29 CFR part 1 or 3; or

d. Informing any other person about their rights under the DBA, Related Acts, this part, or 29 CFR part 1 or 3.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

Pursuant to 29 CFR 5.5(b), the following clauses apply to any Federal-aid construction contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchpersons and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek. 29 CFR 5.5.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph 1. of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages and interest from the date of the underpayment. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or

mechanic, including watchpersons and guards, employed in violation of the clause set forth in paragraph 1. of this section, in the sum currently provided in 29 CFR 5.5(b)(2)* for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph 1. of this section.

* $31 as of January 15, 2023 (See 88 FR 88 FR 2210) as may be adjusted annually by the Department of Labor, pursuant to the Federal Civil Penalties Inflation Adjustment Act of 1990.

3. Withholding for unpaid wages and liquidated damages

a. *Withholding process.* The FHWA or the contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for any unpaid wages; monetary relief, including interest; and liquidated damages required by the clauses set forth in this section on this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract subject to the Contract Work Hours and Safety Standards Act that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to the Contract Work Hours and Safety Standards Act and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with Section IV paragraph 2.a. or paragraph 3.a. of this section, or both, over claims to those funds by:

(1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;

(2) A contracting agency for its reprocurement costs;

(3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;

(4) A contractor's assignee(s);

(5) A contractor's successor(s); or

(6) A claim asserted under the Prompt Payment Act, 31 U.S.C. 3901–3907.

4. Subcontracts. The contractor or subcontractor must insert in any subcontracts the clauses set forth in paragraphs 1. through 5. of this section and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor is responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1. through 5. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and associated liquidated damages and may be subject to debarment, as appropriate.

5. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the Contract Work Hours and Safety Standards Act (CWHSSA) or its implementing regulations in this part;

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under CWHSSA or this part;

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under CWHSSA or this part; or

d. Informing any other person about their rights under CWHSSA or this part.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System pursuant to 23 CFR 635.116.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term “perform work with its own organization” in paragraph 1 of Section VI refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions: (based on longstanding interpretation)

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
(2) the prime contractor remains responsible for the quality of the work of the leased employees;

(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and

(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract. 23 CFR 635.102.

2. Pursuant to 23 CFR 635.116(a), the contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. Pursuant to 23 CFR 635.116(c), the contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract. (based on long-standing interpretation of 23 CFR 635.116).

5. The 30-percent self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements. 23 CFR 635.116(d).

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR Part 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract. 23 CFR 635.108.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR Part 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704). 29 CFR 1926.10.

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR Part 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 11, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT (42 U.S.C. 7606; 2 CFR 200.88; EO 11738)

This provision is applicable to all Federal-aid construction contracts in excess of $150,000 and to all related subcontracts. 48 CFR 2.101; 2 CFR 200.327.

By submission of this bid/proposal or the execution of this contract or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, subcontractor, supplier, or vendor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal Highway Administration and the Regional Office of the Environmental Protection Agency. 2 CFR Part 200, Appendix II.

The contractor agrees to include or cause to be included the requirements of this Section in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements. 2 CFR 200.327.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost $25,000 or more – as defined in 2 CFR Parts 180 and 1200. 2 CFR 180.220 and 1200.220.

1. **Instructions for Certification – First Tier Participants:**

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction. 2 CFR 180.320.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default. 2 CFR 180.325.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances. 2 CFR 180.345 and 180.350.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900-180.1020, and 1200. “First Tier Covered Transactions” refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction. 2 CFR 180.330.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold. 2 CFR 180.220 and 180.300.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. 2 CFR 180.300; 180.320, and 180.325. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. 2 CFR 180.335. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (https://www.sam.gov/). 2 CFR 180.300, 180.320, and 180.325.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default. 2 CFR 180.325.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.335;.

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property, 2 CFR 180.800;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification, 2 CFR 180.700 and 180.800; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default. 2 CFR 180.335(d).

(5) Are not a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(6) Are not a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability (USDOT Order 4200.6 implementing appropriations act requirements).

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal. 2 CFR 180.335 and 180.340.

* * * * *

3. **Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders, and other lower tier transactions requiring prior FHWA approval or estimated to cost $25,000 or more - 2 CFR Parts 180 and 1200). 2 CFR 180.220 and 1200.220.

a. By signing and submitting this proposal, the prospective lower tier participant is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances. 2 CFR 180.365.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900 – 180.1020, and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. “First Tier Covered Transactions” refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated. 2 CFR 1200.220 and 1200.332.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold. 2 CFR 180.220 and 1200.220.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (https://www.sam.gov/), which is compiled by the General Services Administration. 2 CFR 180.300, 180.320, 180.330, and 180.335.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily

excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment. 2 CFR 180.325.

* * * * *

4. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

a. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals:

(1) is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.355;

(2) is a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(3) is a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability. (USDOT Order 4200.6 implementing appropriations act requirements)

b. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000. 49 CFR Part 20, App. A.

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

XII. USE OF UNITED STATES-FLAG VESSELS:

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, or any other covered transaction. 46 CFR Part 381.

This requirement applies to material or equipment that is acquired for a specific Federal-aid highway project. 46 CFR 381.7. It is not applicable to goods or materials that come into inventories independent of an FHWA funded-contract.

When oceanic shipments (or shipments across the Great Lakes) are necessary for materials or equipment acquired for a specific Federal-aid construction project, the bidder, proposer, contractor, subcontractor, or vendor agrees:

1. To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels. 46 CFR 381.7.

2. To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, ‘on-board’ commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b)(1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Office of Cargo and Commercial Sealift (MAR-620), Maritime Administration, Washington, DC 20590. (MARAD requires copies of the ocean carrier's (master) bills of lading, certified onboard, dated, with rates and charges. These bills of lading may contain business sensitive information and therefore may be submitted directly to MARAD by the Ocean Transportation Intermediary on behalf of the contractor). 46 CFR 381.7.

ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS (23 CFR 633, Subpart B, Appendix B) This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

EXHIBIT B
TITLE VI CONTRACTOR ASSURANCES
APPENDIX A

During the performance of this contract, the contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

1. **Compliance with Regulations**: The contactor (hereinafter includes consultants) will comply with the Regulations relative to Nondiscrimination in Federally assisted programs of the United States Department of Transportation Federal Highway Administration and Federal Transit Administration, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.

2. **Nondiscrimination:** The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, national origin, sex, age, disability, income or Limited English Proficiency in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21.

3. **Solicitations for Subcontracts, Including Procurements of Materials** and Equipment: In all solicitations, either by bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor's obligations under this contract and Acts and the Regulations relative to Non- discrimination on the grounds of race, color, or national origin.

4. **Information and Reports:** The contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the Federal Highway Administration or Federal Transit Administration to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish this information, the contractor will so certify to the Recipient or the Federal Highway Administration or the Federal Transit Administration, as appropriate, and will set forth what efforts it has made to obtain the information.

5. **Sanctions for Non-compliance:** In the event of the contractor's non-compliance with the non-discrimination provisions of this contract, the Recipient will impose such contract sanctions as it or the Federal Highway Administration or the Federal Transit Administration may determine to be appropriate, including, but not limited to:

   a. withholding contract payments to the contractor under the contract until the contractor complies; and/or
   b. cancelling, terminating, or suspending a contract, in whole or in part.

6. **Incorporation of Provisions:** The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement as the Recipient or the Federal Highway Administration or the Federal Transit Administration may direct as a means of enforcing such provisions including sanctions for non-compliance. Provided, that if the contractor becomes involved in, or is threatened with, litigation by a subcontractor, or supplier because of such direction, the contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

APPENDIX B

TITLE VI CONTRACTOR ASSURANCES

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees to comply with the following nondiscrimination statutes and authorities; including but not limited to:

- Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 U.S.C. § 2000d et seq.), (prohibits discrimination on the basis of race, color, national origin), as implemented by 49 C.F.R. § 21.1 et seq. and 49 C.F.R. part 303;
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601) (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Federal-Aid Highway Act of 1973 (23 U.S.C. § 324 et seq.) (prohibits discrimination on the basis of sex);
- Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. § 794 et seq.) (prohibits discrimination on the basis of disability); and 49 C.F.R. part 27;
- The Age Discrimination Act of 1975, as amended (42 U.S.C. § 6101 et seq.) (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982 (Pub. L. 97-248 (1982)), as amended (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987 (102 Stat. 28) *(" ... which restore[d] the broad scope of coverage and to clarify the application of Title IX of the Education Amendments of 1972, section 504 of the Rehabilitation Act of 1973, the Age Discrimination Act of 1975, and Title VI of the Civil Rights Act of 1964.");*
- Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 --12189), as implemented by Department of Justice regulations at 28 C.F.R. parts 35 and 36, and Department of Transportation regulations at 49 C.F.R. parts 37 and 38;

- The Federal Aviation Administration's Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. § 1681 et seq).

EXHIBIT C

Health Insurance Portability and Accountability Act of 1996 ("HIPAA").

(a) If the Contactor is a Business Associate under the requirements of the Health Insurance Portability and Accountability Act of 1996 ("HIPAA"), the Contractor must comply with all terms and conditions of this Section of the Contract. If the Contractor is not a Business Associate under HIPAA, this Section of the Contract does not apply to the Contractor for this Contract.

(b) The Contractor is required to safeguard the use, publication and disclosure of information on all applicants for, and all clients who receive, services under the Contract in accordance with all applicable federal and state law regarding confidentiality, which includes but is not limited to HIPAA, more specifically with the Privacy and Security Rules at 45 C.F.R. Part 160 and Part 164, subparts A, C, and E; and

(c) The State of Connecticut Agency named on page 1 of this Contract (hereinafter the "Department") is a "covered entity" as that term is defined in 45 C.F.R. § 160.103; and

(d) The Contractor, on behalf of the Department, performs functions that involve the use or disclosure of "individually identifiable health information," as that term is defined in 45
C.F.R. § 160.103; and

(e) The Contractor is a "business associate" of the Department, as that term is defined in 45 C.F.R. § 160.103; and

(f) The Contractor and the Department agree to the following in order to secure compliance with the HIPAA, the requirements of Subtitle D of the Health Information Technology for Economic and Clinical Health Act (hereinafter the HITECH Act), (Pub. L. 111-5, sections 13400 to 13423), and more specifically with the Privacy and Security Rules at 45 C.F.R. Part 160 and Part 164, subparts A, C, and E.

(g) Definitions

(1) "Breach shall have the same meaning as the term is defined in section 13400 of the HITECH Act (42 U.S.C. §17921(1))

(2) "Business Associate" shall mean the Contractor.

(3) "Covered Entity" shall mean the Department of the State of Connecticut named on page 1 of this Contract.

(4) "Designated Record Set" shall have the same meaning as the term "designated record set" in 45 C.F.R. § 164.501.

(5) "Electronic Health Record" shall have the same meaning as the term is defined in section 13400 of the HITECH Act (42 U.S.C. §17921(5))

(6) "Individual" shall have the same meaning as the term "individual"' in 45 C.F.R. § 160.103 and shall include a person who qualifies as a personal representative as defined in 45 C.F.R. § 164.502(g).

(7) "Privacy Rule" shall mean the Standards for Privacy of Individually Identifiable Health Information at 45 C.F.R. part 160 and parts 164, subparts A and E.

(8) "Protected Health Information" or "PHI" shall have the same meaning as the term "protected health information" in 45 C.F.R. § 160.103, limited to information created or received by the Business Associate from or on behalf of the Covered Entity.

(9) "Required by Law"' shall have the same meaning as the term "required by law" in 45 C.F.R. § 164.103.

(10) "Secretary" shall mean the Secretary of the Department of Health and Human Services or his designee.

(11) "More stringent" shall have the same meaning as the term "more stringent" in 45 C.F.R. § 160.202.

(12) "This Section of the Contract" refers to the HIPAA Provisions stated herein, in their entirety.

(13) "Security Incident" shall have the same meaning as the term "security incident" in 45 C.F.R.§ 164.304.

(14) "Security Rule" shall mean the Security Standards for the Protection of Electronic Protected Health Information at 45 C.F.R. part 160 and parts 164, subpart A and C.

(15) "Unsecured protected health information" shall have the same meaning as the term as defined in section 13402(h)(1)(A) of HITECH. Act. (42 U.S.C. §17932(h)(1)(A)).

(h) Obligations and Activities of Business Associates.

(1) Business Associate agrees not to use or disclose PHI other than as permitted or required by this Section of the Contract or as Required by Law.

(2) Business Associate agrees to use appropriate safeguards to prevent use or disclosure of PHI other than as provided for in this Section of the Contract.

(3) Business Associate agrees to use administrative, physical and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of electronic protected health information that it creates, receives, maintains, or transmits on behalf of the Covered Entity.

(4) Business Associate agrees to mitigate, to the extent practicable, any harmful effect that is known to the Business Associate of a use or disclosure of PHI by Business Associate in violation of this Section of the Contract.

(5) Business Associate agrees to report to Covered Entity any use or disclosure of PHI not provided for by this Section of the Contract or any security incident of which it becomes aware.

(6) Business Associate agrees to ensure that any agent, including a subcontractor, to whom it provides PHI received from, or created or received by Business Associate, on behalf of the Covered Entity, agrees to the same restrictions and conditions that apply through this Section of the Contract to Business Associate with respect to such information.

(7) Business Associate agrees to provide access, at the request of the Covered Entity, and in the time and manner agreed to by the parties, to PHI in a Designated Record Set, to Covered Entity or, as directed by Covered Entity, to an Individual in order to meet the requirements under 45 C.F.R. § 164.524.

(8) Business Associate agrees to make any amendments to PHI in a Designated Record Set that the Covered Entity directs or agrees to pursuant to 45 C.F.R. § 164.526 at the request of the Covered Entity, and in the time and manner agreed to by the parties.

(9) Business Associate agrees to make internal practices, books, and records, including policies and procedures and PHI, relating to the use and disclosure of PHI received from, or created or received by, Business Associate on behalf of Covered Entity, available to Covered Entity or to the Secretary in a time and manner agreed to by the parties or designated by the Secretary, for purposes of the Secretary determining Covered Entity's compliance with the Privacy Rule.

(10) Business Associate agrees to document such disclosures of PHI and information related to such disclosures as would be required for Covered Entity to respond to a request by an Individual for an accounting of disclosures of PHI in accordance with 45 C.F.R. § 164.528 and section 13405 of the HITECH Act (42 U.S.C. § 17935) and any regulations promulgated thereunder.

(11) Business Associate agrees to provide to Covered Entity, in a time and manner agreed to by the parties, information collected in accordance with clause h. (10) of this Section of the Contract, to permit Covered Entity to respond to a request by an Individual for an accounting of disclosures of PHI in accordance with 45 C.F.R. § 164.528 and section 13405 of the HITECH Act (42 U.S.C. § 17935) and any regulations promulgated

thereunder. Business Associate agrees at the Covered Entity's direction to provide an accounting of disclosures of PHI directly to an individual in accordance with 45 C.F.R. § 164.528 and section 13405 of the HITECH Act (42 U.S.C. § 17935) and any regulations promulgated thereunder.

(12)Business Associate agrees to comply with any state or federal law that is more stringent than the Privacy Rule.

(13) Business Associate agrees to comply with the requirements of the HITECH Act relating to privacy and security that are applicable to the Covered Entity and with the requirements of 45 C.F.R. sections 164.504(e), 164.308, 164.310, 164.312, and 164.316.

(14) In the event that an individual requests that the Business Associate (a) restrict disclosures of PHI; (b) provide an accounting of disclosures of the individual's PHI; or (c) provide a copy of the individual's PHI in an electronic health record, the Business Associate agrees to notify the covered entity, in writing, within two business days of the request.

(15) Business Associate agrees that it shall not, directly or indirectly, receive any remuneration in exchange for PHI of an individual without (1) the written approval of the covered entity, unless receipt of remuneration in exchange for PHI is expressly authorized by this Contract and (2) the valid authorization of the individual, except for the purposes provided under section 13405(d)(2) of the HITECH Act,(42 U.S.C. § 17935(d)(2)) and in any accompanying regulations

(16) Obligations in the Event of a Breach

A. The Business Associate agrees that, following the discovery of a breach of unsecured protected health information, it shall notify the Covered Entity of such breach in accordance with the requirements of section 13402 of HITECH (42 U.S.C. 17932(b) and the provisions of this Section of the Contract.
B. Such notification shall be provided by the Business Associate to the Covered Entity without unreasonable delay, and in no case later than 30 days after the breach is discovered by the Business Associate, except as otherwise instructed in writing by a law enforcement official pursuant to section 13402 (g) of HITECH (42 U.S.C. 17932(g)). A breach is considered discovered as of the first day on which it is, or reasonably should have been, known to the Business Associate. The notification shall include the identification and last known address, phone number and email address of each individual (or the next of kin of the individual if the individual is deceased) whose unsecured protected health information has been or is reasonably believed by the Business Associate to have been, accessed, acquired, or disclosed during such breach.
C. The Business Associate agrees to include in the notification to the Covered Entity at least the following information:

1. A brief description of what happened, including the date of the breach and the date of the discovery of the breach, if known.

2. A description of the types of unsecured protected health information that were involved in the breach (such as full name, Social Security number, date of birth, home address, account number, or disability code).

3. The steps the Business Associate recommends that individuals take to protect themselves from potential harm resulting from the breach.

4. A detailed description of what the Business Associate is doing to investigate the breach, to mitigate losses, and to protect against any further breaches.

5. Whether a law enforcement official has advised either verbally or in writing the Business Associate that he or she has determined that notification or notice to individuals or the posting required under section 13402 of the HITECH Act would impede a criminal investigation or cause damage to national security and; if so, include contact information for said official.

D. Business Associate agrees to provide appropriate staffing and have established procedures to ensure that individuals informed by the Covered Entity of a breach by the Business Associate have the opportunity to ask questions and contact the Business Associate for additional information regarding the breach. Such procedures shall include a toll-free telephone number, an e-mail address, a posting on its Web site and a postal address. Business Associate agrees to include in the notification of a breach by the Business Associate to the Covered Entity, a written description of the procedures that have been established to meet these requirements. Costs of such contact procedures will be borne by the Contractor.

E. Business Associate agrees that, in the event of a breach, it has the burden to demonstrate that it has complied with all notification's requirements set forth above, including evidence demonstrating the necessity of a delay in notification to the Covered Entity.

(i) Permitted Uses and Disclosure by Business Associate.

(1) General Use and Disclosure Provisions Except as otherwise limited in this Section of the Contract, Business Associate may use or disclose PHI to perform functions, activities, or services for, or on behalf of, Covered Entity as specified in this Contract, provided that such use or disclosure would not violate the Privacy Rule if done by

Covered Entity or the minimum necessary policies and procedures of the Covered Entity.

(2) Specific Use and Disclosure Provisions

(A) Except as otherwise limited in this Section of the Contract, Business Associate may use PHI for the proper management and administration of Business Associate or to carry out the legal responsibilities of Business Associate.

(B) Except as otherwise limited in this Section of the Contract, Business Associate may disclose PHI for the proper management and administration of Business Associate, provided that disclosures are Required by Law, or Business Associate obtains reasonable assurances from the person to whom the information is disclosed that it will remain confidential and used or further disclosed only as Required by Law or for the purpose for which it was disclosed to the person, and the person notifies Business Associate of any instances of which it is aware in which the confidentiality of the information has been breached.

(C) Except as otherwise limited in this Section of the Contract, Business Associate may use PHI to provide Data Aggregation services to Covered Entity as permitted by 45 C.F.R. § 164.504(e)(2)(i)(B).

(j) Obligations of Covered Entity.

(1) Covered Entity shall notify Business Associate of any limitations in its notice of privacy practices of Covered Entity, in accordance with 45 C.F.R. § 164.520, or to the extent that such limitation may affect Business Associate's use or disclosure of PHI.

(2) Covered Entity shall notify Business Associate of any changes in, or revocation of, permission by Individual to use or disclose PHI, to the extent that such changes may affect Business Associate's use or disclosure of PHI.

(3) Covered Entity shall notify Business Associate of any restriction to the use or disclosure of PHI that Covered Entity has agreed to in accordance with 45 C.F.R. § 164.522, to the extent that such restriction may affect Business Associate's use or disclosure of PHI.

(k) Permissible Requests by Covered Entity. Covered Entity shall not request Business Associate to use or disclose PHI in any manner that would not be permissible under the Privacy Rule if done by the Covered Entity, except that Business Associate may use and disclose PHI for data aggregation, and management and administrative activities of Business Associate, as permitted under this Section of the Contract.

(l) Term and Termination.

(1) Term. The Term of this Section of the Contract shall be effective as of the date the Contract is effective and shall terminate when the information collected in accordance with clause h. (10) of this Section of the Contract is provided to the Covered Entity and all of the PHI provided by Covered Entity to Business Associate, or created or received by Business Associate on behalf of Covered Entity, is destroyed or returned to Covered Entity, or, if it is infeasible to return or destroy PHI, protections are extended to such information, in accordance with the termination provisions in this Section.

(2) Termination for Cause Upon Covered Entity's knowledge of a material breach by Business Associate, Covered Entity shall either:

(A) Provide an opportunity for Business Associate to cure the breach or end the violation and terminate the Contract if Business Associate does not cure the breach or end the violation within the time specified by the Covered Entity; or

(B) Immediately terminate the Contract if Business Associate has breached a material term of this Section of the Contract and cure is not possible; or

(C) If neither termination nor cure is feasible, Covered Entity shall report the violation to the Secretary.

(3) Effect of Termination

(A) Except as provided in (l)(2) of this Section of the Contract, upon termination of this Contract, for any reason, Business Associate shall return or destroy all PHI received from Covered Entity or created or received by Business Associate on behalf of Covered Entity. Business Associate shall also provide the information collected in accordance with clause h. (10) of this Section of the Contract to the Covered Entity within ten business days of the notice of termination. This provision shall apply to PHI that is in the possession of subcontractors or agents of Business Associate. Business Associate shall retain no copies of the PHI.

(B) In the event that Business Associate determines that returning or destroying the PHI is infeasible, Business Associate shall provide to Covered Entity notification of the conditions that make return or destruction infeasible. Upon documentation by Business Associate that return or destruction of PHI is infeasible, Business Associate shall extend the protections of this Section of the Contract to such PHI and limit further uses and disclosures of PHI to those purposes that make return or destruction infeasible, for as long as Business Associate maintains such PHI. Infeasibility of the return or destruction of PHI includes, but is not limited to, requirements under state or federal law that the Business Associate maintains or preserves the PHI or copies thereof.

(m) Miscellaneous Provisions.

(1) Regulatory References. A reference in this Section of the Contract to a section in the Privacy Rule means the section as in effect or as amended.

(2) Amendment. The Parties agree to take such action as in necessary to amend this Section of the Contract from time to time as is necessary for Covered Entity to comply with requirements of the Privacy Rule and the Health Insurance Portability and Accountability Act of 1996, Pub. L. No. 104-191.

(3) Survival. The respective rights and obligations of Business Associate shall survive the termination of this Contract.

(4) Effect on Contract. Except as specifically required to implement the purposes of this Section of the Contract, all other terms of the Contract shall remain in force and effect.

(5) Construction. This Section of the Contract shall be construed as broadly as necessary to implement and comply with the Privacy Standard. Any ambiguity in this Section of the Contract shall be resolved in favor of a meaning that complies, and is consistent with, the Privacy Standard.

(6) Disclaimer. Covered Entity makes no warranty or representation that compliance with this Section of the Contract will be adequate or satisfactory for Business Associate's own purposes. Covered Entity shall not be liable to Business Associate for any claim, civil or criminal penalty, loss or damage related to or arising from the unauthorized use or disclosure of PHI by Business Associate or any of its officers, directors, employees, contractors or agents, or any third party to whom Business Associate has disclosed PHI contrary to the provisions of this Contract or applicable law. Business Associate is solely responsible for all decisions made, and actions taken, by Business Associate regarding the safeguarding, use and disclosure of PHI within its possession, custody or control.

(7) Indemnification. The Business Associate shall indemnify and hold the Covered Entity harmless from and against any and all claims, liabilities, judgments, fines, assessments, penalties, awards and any statutory damages that may be imposed or assessed pursuant to HIPAA, as amended or the HITECH Act, including, without limitation, attorney's fees, expert witness fees, costs of investigation, litigation or dispute resolution, and costs awarded thereunder, relating to or arising out of any violation by the Business Associate and its agents, including subcontractors, of any obligation of Business Associate and its agents, including subcontractors, under this section of the contract, under HIPAA, the HITECH Act, the Privacy Rule and the Security Rule.

EXHIBIT D
AFFIRMATIVE ACTION POLICY STATEMENT (October 2023)

It is the policy of this firm to assure that applicants are employed, and that employees are treated during employment, without regard to an individual's race, color, religion, creed, sex, gender identity or expression, marital status, national origin, age, ancestry, status as a veteran, intellectual disability, mental disability, learning disability or physical disability, including but not limited to blindness, unless such disability prevents performance of the work involved and to promote the full realization of equal employment opportunity through positive and continuous affirmative efforts. Such action shall include employment, promotion, demotion or transfer, recruitment or recruitment advertising, layoff or terminations, rates of pay or other forms of compensation, selection for training/apprenticeship, pre-apprenticeship opportunities, and on-the-job training opportunities.

This firm will implement, monitor, enforce and achieve full compliance with this Affirmative Action Policy Statement in conjunction with the applicable Federal and State laws, regulations, executive orders, and contract provisions, including but not limited to those listed below:

Dissemination of Policy:
All members of the firm who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, this firm's Equal Employment Opportunity (EEO) policy and contractual responsibilities to provide EEO in each grade and classification of employment. These actions shall include:

1. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the firm's EEO policy and its implementation will be reviewed and explained. These meetings will be conducted by the EEO officer.
2. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.
3. All personnel who are engaged in direct recruitment for the firm will be instructed by the EEO Officer of the contractor's procedures for locating and hiring minority group employees.
4. Notices and posters setting forth the firm's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.
5. The firm's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.
6. Sexual Harassment Prevention Resources including training and remedies must be available to all employees. See Connecticut General Assembly Public Acts 19–16 and 19–93.

Recruitment:
When advertising for employees, the firm will include in all advertisements the notation; "An Affirmative Action/Equal Opportunity Employer." All such advertisements will be placed in

publications having a large circulation among minority groups in the area where the workforce would normally be derived.

1. The firm will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minority and female applicants. To meet this requirement, the firm will identify referral sources and establish procedures for recruitment to obtain the referral of minority and female applicants.
2. In the event the firm has a valid bargaining agreement providing for exclusive hiring referrals, he/she is expected to observe the provisions of that agreement to the extent that the system permits the contractor's compliance with EEO contract provisions. (The United States Department of Labor has held that where implementation of such agreements has had the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Executive Order 11246, as amended.)
3. The firm will encourage his/her present employees to refer minority group applicants for employment. Information and procedures with regard to referring minority group applicants will be discussed with employees.

Personnel Actions:

Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to an individual's race, color, religion, creed, sex, gender identity or expression, marital status, national origin, age, ancestry, status as a veteran, intellectual disability, mental disability, learning disability or physical disability, including but not limited to blindness, unless such disability prevents performance of the work involved. The following procedures shall be followed:

1. The firm will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of personnel.
2. The firm will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take correction action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.
3. The firm shall periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.
4. The firm will promptly investigate all complaints of alleged discrimination made to the firm and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective actions shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of his avenues of appeal.

Training and Promotion:

The firm will assist in locating, qualifying, and increasing the skills of minorities and women. The firm will utilize the following tools to identify training and promotional opportunities in the firm:

1. The firm will advise employees and applicants for employment of available training programs and the entrance requirements.
2. The firm will periodically review the training and promotion of minority group and female employees and will encourage eligible employees to apply for such training and promotion.

Unions:

If the firm relies in whole or in part upon unions as a source of employees, the contractor will use his/her best efforts to obtain the cooperation of such unions to increase opportunities for minority groups and women within the unions, and to effect referrals by such unions of minority and female employees. Actions by the firm either directly or through a contractor's association acting as agent will include the procedures set forth below:

1. The firm will use best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority group members and women for membership in the unions and increasing the skills of minority group employees and women so that they may qualify for higher paying employment.
2. The firm will use best efforts to incorporate an EEO clause into each union agreement to the extent that such union will be contractually bound to refer applicants without regard to their to an individual's race, color, religion, creed, sex, gender identity or expression, marital status, national origin, age, ancestry, status as a veteran, intellectual disability, mental disability, learning disability or physical disability, including but not limited to blindness, unless such disability prevents performance of the work involved.
3. The firm is to obtain information as to the referral practices and policies of the labor union except that to the extent that such information is within the exclusive possession of the labor union and such labor union refuses to furnish the information to the contractor, the contractor shall notify the Connecticut Department of Transportation (CTDOT) of the efforts made to obtain the information.
4. In the event the union is unable to provide the firm with a reasonable flow of minority and women referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies. (The United States Department of Labor has held that it shall be no excuse that the union with which the contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority employees.) In the event the union referral practice prevents the contractor from meeting the obligations under Executive Order 11246 as amended, and in compliance with 23 CFR Part 230, the firm will notify CTDOT.

Selection of Subcontractors:

The firm will not discriminate on the grounds race, color, religion, sex, sexual orientation, gender identity or expression, marital status, national origin, ancestry, age, intellectual disability, learning disability, physical disability, including, but not limited to, blindness, or status as a veteran in the selection and retention of subcontractors, including procurement of materials and leases of equipment.

1. The firm shall use his/her best efforts to ensure subcontractor/subconsultant compliance with Federal and State Equal Opportunity (EO) and EEO requirements.

Records and Reports:

The Contractor shall keep records as necessary to document compliance with EO/EEO requirements. Such reports shall be retained for a period of three years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of CTDOT and/or the United States Department of Transportation. The following records should be maintained:

6. The number of minority and non-minority group members and women employed in each work classification;
7. The progress and efforts being made in cooperation with unions, when applicable to increase the employment opportunities for minorities and women;
8. The documentation showing progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees; and
9. Complaints of Discrimination.

In implementing this policy and ensuring that affirmative action is being provided, each time a hiring opportunity occurs this firm will contact and request referrals from minority and female organizations, referral sources, and media sources. All advertising will emphasize that the firm is "An Affirmative Action/Equal Opportunity Employer."

In order to substantiate this firm's efforts and affirmative actions to provide equal opportunity, the firm will maintain and submit, as requested, documentation such as referral request correspondence, copies of advertisements utilized and follow-up documentation to substantiate that efforts were made in good faith. This firm will maintain the necessary internal audit procedures and record keeping systems to report the firm's affirmative action efforts.

It is understood by Owner/CEO/President of the firm and the firm's Equal Employment Opportunity Officer and supervisory and managerial personnel that failure to effectively implement, monitor and enforce this firm's affirmative action program and/or failure to adequately document and submit as required, the affirmative actions taken and efforts made to recruit and hire minority and female applicants in accordance with our affirmative action program in each instance of hire, will result in this firm being required to recommit itself to a modified and more stringent affirmative action program as a condition of approval. It is recognized that this policy is a contractual requirement and is a prerequisite for performing services for the contracting agency. This policy in addition to CTDOT's EO/EEO contract provisions and requirements, shall constitute the CTDOT Affirmative Program requirements.

The ultimate responsibility for the full implementation of this firm's Affirmative Action Program rests with the Chief Executive Officer of this firm.

EXHIBIT E

(Federal wage rate package will be inserted at the end after State wages for the final executed contract only. Refer to NTC – Federal Wage Determinations)

"General Decision Number: CT20250014 07/25/2025

Superseded General Decision Number: CT20240014

State: Connecticut

Construction Type: Heavy

County: Hartford County in Connecticut.

HEAVY CONSTRUCTION PROJECTS

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least $17.75 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2025.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least $13.30 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2025.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at http://www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/03/2025
1	01/17/2025
2	04/25/2025

3	05/09/2025
4	05/16/2025
5	05/30/2025
6	06/06/2025
7	06/13/2025
8	07/25/2025

BRCT0001-012 01/06/2025

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 43.14	34.74

CARP0326-010 05/05/2025

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

	Rates	Fringes
CARPENTER		
CARPENTERS, PILEDRIVERS	$ 42.03	29.19
DIVER TENDER	$ 42.03	29.19
DIVER	$ 50.49	29.19

CARP0326-015 05/05/2025

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

	Rates	Fringes
CARPENTER		
CARPENTER, PILEDRIVER	$ 42.03	29.19
DIVER TENDER	$ 42.03	29.19
DIVER	$ 50.49	29.19

CARP1121-006 01/06/2025

	Rates	Fringes
MILLWRIGHT	$ 43.25	29.13

ELEC0035-006 06/01/2024

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

	Rates	Fringes
ELECTRICIAN	$ 45.75	3%+33.97

ELEC0090-005 06/01/2025

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

	Rates	Fringes

ELECTRICIAN.....$ 46.48 3%+36.66

ELEC0488-005 06/01/2025

Hartland Township

	Rates	Fringes
ELECTRICIAN	$ 47.40	3%+35.32

ENGI0478-001 04/06/2025

	Rates	Fringes
Power equipment operators:		
GROUP 1	$ 58.19	29.80
GROUP 2	$ 57.78	29.80
GROUP 3	$ 56.79	29.80
GROUP 4	$ 51.92	29.80
GROUP 5	$ 50.63	29.80
GROUP 6	$ 50.22	29.80
GROUP 7	$ 49.25	29.80
GROUP 8	$ 49.25	29.80
GROUP 9	$ 48.67	29.80
GROUP 10	$ 45.96	29.80
GROUP 11	$ 45.96	29.80
GROUP 12	$ 45.87	29.80
GROUP 13	$ 47.91	29.80
GROUP 14	$ 45.12	29.80
GROUP 15	$ 44.70	29.80
GROUP 16	$ 43.60	29.80
GROUP 17	$ 43.06	29.80
GROUP 18	$ 42.20	29.80
GROUP 19	$ 53.33	29.80
GROUP 20	$ 52.92	29.80
GROUP 21	$ 51.92	29.80

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

1) Crane handling or erecting structural steel or stone, hoisting engineer(2 drums or over)
2) Cranes(100 ton rated capacity and over) Bauer Drill/Caisson
3) Cranes(under 100 ton rated capacity)

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)

GROUP 2: Cranes (100 ton capacity & over) Bauer Drill/Caisson

GROUP 3: Cranes (under 100 ton rated capacity)

GROUP 4: Trenching machines, lighter derrick, concrete finishing machine, CMI machine or similar, Koehring Loader (skooper).

GROUP 5: Specialty railroad equipment, asphalt spreader, asphalt reclaiming machine, line grider, concrete pumps, drills with self contained power units, boring machine, post hole digger, auger, pounder, well digger, milling machine (over 24' mandrel), side boom, combination hoe and loader, directional driller

GROUP 6: Front end loader (3 cu. yds. up to 7 cu. yards), bulldozer (Rough grade dozer) .

GROUP 7: Asphalt roller, concrete saws and cutters (ride on types), Vermeer concrete cutter, stump grinder, scraper, snooper, skidder, milling machine (24"" and under Mandrel).

GROUP 8: Mechanic, grease truck operator, hydoblaster, barrier mover, power stone spreader, welder, work boat under 26 ft. transfer machine.

GROUP 9: Front end loader (under 3 cubic yards), skid steer loader (regardless of attachments), bobcat or similar, forklift, power chipper, landscape equipment (including hydroseeder), Vacuum Exacavation Truck and Hydrovac Excavation Truck (27 HG pressure or greater).

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, portable grout plant operator, portable water filtration 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.

GROUP 19: Front end loader(7 cubic yards or over); work boat 26 ft. and over.

GROUP 20: Excavator over 2 cubic yards; pile driver($3.00 premium when operator
controls hammer).

GROUP 21: Excavator, 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 operaing), rubber tire excavator (drott 1085 similar), grader operator, bulldozer finegrade (slopes shaping, laser or GPS, ect.)

ENGI0478-010 04/06/2025

	Rates	Fringes
POWER EQUIPMENT OPERATOR:		
Asphalt Paver	$ 50.63	29.80
Asphalt Roller	$ 49.77	29.80
Asphalt Spreader	$ 50.63	29.80
Bulldozer (Rough Grade Dozer)	$ 50.22	29.80
Bulldozer Fine Grade(includes slopes, shaping, laser or gps)	$ 51.92	29.80
Crane handling or erecting structural steel or stone	$ 58.19	29.80
Cranes (100 ton capacity & over)	$ 57.78	29.80
Cranes (under 100 ton rated capacity)	$ 56.79	29.80
Drills with self contained power units; Directional driller	$ 50.63	29.80
Earth Roller	$ 45.96	29.80
Excavator/Backhoe 2 cubic yards and over	$ 52.92	29.80
Excavator/Backhoe under 2 cubic yards	$ 51.92	29.80
Forklift	$ 48.67	29.80
Front End Loader (3 cubic yards up to 7 cubic yards)	$ 50.22	29.80
Front End Loader (7 cubic yards or over)	$ 53.33	29.80
Front End Loader (under 3 cubic yards)	$ 48.67	29.80
Grader/Blade	$ 51.92	29.80
Maintenance Engineer/Oiler	$ 42.50	29.80
Mechanic	$ 49.25	29.80

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.

1) Crane handling or erecting structural steel or stone, hoisting engineer(2 drums or over)
2) Cranes(100 ton rated capacity and over) Bauer Drill/Caisson
3) Cranes(under 100 ton rated capacity)

---

* IRON0015-007 06/02/2025

	Rates	Fringes
IRONWORKER, STRUCTURAL	$ 45.25	43.62

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

LABO0146-002 04/06/2025

	Rates	Fringes
Laborers: (TUNNEL CONSTRUCTION)		
CLEANING, CONCRETE AND CAULKING TUNNEL:		
Concrete Workers, Form Movers and Strippers	$ 36.96	28.85
Form Erectors	$ 37.29	28.85
ROCK SHAFT, CONCRETE, LINING OF SAME AND TUNNEL IN FREE AIR:		
Brakemen, Trackmen, Tunnel Laborers, Shaft Laborers	$ 36.96	28.85
Laborers Topside, Cage Tenders, Bellman	$ 36.85	28.85
Miners	$ 37.93	28.85
SHIELD DRIVE AND LINER PLATE TUNNELS IN FREE AIR:		
Brakemen and Trackmen	$ 36.96	28.85
Miners, Motormen, Mucking Machine Operators, Nozzlemen, Grout Men, Shaft and Tunnel, Steel and Rodmen, Shield and Erector, Arm Operator, Cable Tenders	$ 37.93	28.85
TUNNELS, CAISSON AND CYLINDER WORK IN COMPRESSED AIR:		
Blaster	$ 44.42	28.85
Brakemen, Trackmen, Groutman, Laborers, Outside Lock Tender, Gauge Tenders	$ 44.22	28.85
Change House Attendants, Powder Watchmen, Top on Iron Bolt	$ 42.24	28.85
Mucking Machine Operator	$ 45.01	28.85

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.

LABO0146-004 04/06/2025

	Rates	Fringes
LABORERS		

GROUP 1	$ 35.70	28.85
GROUP 2	$ 35.95	28.85
GROUP 3	$ 36.20	28.85
GROUP 4	$ 38.70	28.85
GROUP 5	$ 37.45	28.85
GROUP 6	$ 37.70	28.85
GROUP 7	$ 21.42	28.85
GROUP 8	$ 36.70	28.85
GROUP 9	$ 38.70	28.85

LABORERS CLASSIFICATIONS

GROUP 1: Laborers (Unskilled),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

GROUP 8: Acetylene burner (Hours worked with a torch)

GROUP 9: Toxic Waste Removers A or B With PPE

(On a site designated as a SuperFund Site by the U.S. Army Corps of Engineers and is deemed a HAZ-MAT site, and applies to employees required to wear OSHA leval A or B even if the PPE is not worn.)

PAIN0011-013 06/01/2021

	Rates	Fringes
PAINTER		
Brush and Roller	$ 36.42	22.90
Spray Only	$ 39.42	22.90
Steel Only	$ 38.42	22.90

---

* TEAM0064-001 04/06/2025

	Rates	Fringes
Truck drivers:		
2 Axle Ready Mix	$ 36.27	32.68
2 Axle	$ 36.16	32.68
3 Axle Ready Mix	$ 36.33	32.68
3 Axle	$ 36.27	32.68
4 Axle Ready Mix	$ 37.19	32.68
4 Axle	$ 36.39	32.68
Heavy Duty Trailer 40 tons and over	$ 38.66	32.68
Heavy Duty Trailer up to 40 tons	$ 37.39	32.68

Snorkle Truck	$ 36.54	32.68
Specialized (Earth moving equipment other than conventional type on-the-road trucks and semi-trailers, including Euclids)	$ 36.44	32.68

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.

---

* TEAM0064-006 04/06/2025

	Rates	Fringes
TRUCK DRIVER: 4 Axle Truck	$ 36.39	32.68

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.

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

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

==========

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons

resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

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) (iii)).

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter identifier beginning with characters other than ""SU"", ""UAVG"", ?SA?, or ?SC? denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate prevailed in the survey for this classification, which in this example would be Plumbers. 0198 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, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The ""SU"" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by

computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

?SU? wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

1) Has there been an initial decision in the matter? This can be:

a) a survey underlying a wage determination
b) an existing published wage determination
c) an initial WHD letter setting forth a position on a wage determination matter
d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

Branch of Wage Surveys
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail 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 an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail 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 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.

==========

END OF GENERAL DECISION"

"General Decision Number: CT20250003 08/15/2025

Superseded General Decision Number: CT20240003

State: Connecticut

Construction Type: Highway

County: Hartford County in Connecticut.

HIGHWAY CONSTRUCTION PROJECTS

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least $17.75 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2025.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least $13.30 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2025.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at http://www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/03/2025
1	01/17/2025
2	03/07/2025

3	03/28/2025
4	04/25/2025
5	05/09/2025
6	05/30/2025
7	06/06/2025
8	06/13/2025
9	07/25/2025
10	08/15/2025

BRCT0001-003 01/06/2025

	Rates	Fringes
BRICKLAYER		
BRICKLAYERS, CEMENT MASONS, CEMENT FINISHERS, PLASTERERS, STONE MASONS	$ 43.14	34.74

CARP0326-002 05/05/2025

	Rates	Fringes
Carpenters: (Berlin, Bristol, Burlington,Canton, Marlborough, New Britain, Newington, Plainville, Southington)		
CARPENTERS; PILEDRIVERS	$ 42.03	29.19
DIVER TENDERS	$ 42.03	29.19
DIVERS	$ 50.49	29.19

CARP0326-013 05/05/2025

	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	$ 42.03	29.19
DIVER TENDERS	$ 42.03	29.19
DIVERS	$ 50.49	29.19

CARP1121-006 01/06/2025

	Rates	Fringes
MILLWRIGHT	$ 43.25	29.13

ELEC0035-002 06/01/2024

	Rates	Fringes
Electricians:		
Entire County, excluding Berlin, Bristol, Hartland, New Britain, Newington, Plainville and Southington	$ 45.75	3%+33.97

ELEC0090-001 06/01/2025

	Rates	Fringes
Electricians: Berlin, Bristol, New Britain, Newington, Plainville, Southington	$ 46.48	3% +36.66

ELEC0488-004 06/01/2025

	Rates	Fringes
Electricians:	$ 47.40	3%+35.32

ENGI0478-002 04/06/2025

	Rates	Fringes
Power equipment operators:		
GROUP 1	$ 58.19	29.80
GROUP 2	$ 57.78	29.80
GROUP 3	$ 56.79	29.80
GROUP 4	$ 51.92	29.80
GROUP 5	$ 50.63	29.80
GROUP 6	$ 50.22	29.80
GROUP 7	$ 49.25	29.80
GROUP 8	$ 49.25	29.80
GROUP 9	$ 48.67	29.80
GROUP 10	$ 45.96	29.80
GROUP 11	$ 45.96	29.80
GROUP 12	$ 45.87	29.80
GROUP 13	$ 47.91	29.80
GROUP 14	$ 45.12	29.80
GROUP 15	$ 44.70	29.80
GROUP 16	$ 43.60	29.80
GROUP 17	$ 43.06	29.80
GROUP 18	$ 42.20	29.80
GROUP 19	$ 53.33	29.80
GROUP 20	$ 52.92	29.80
GROUP 21	$ 51.92	29.80

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.

1) Crane handling or erecting structural steel or stone, hoisting engineer(2 drums or over)
2) Cranes(100 ton rated capacity and over) Bauer Drill/Caisson
3) Cranes(under 100 ton rated capacity)

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).

GROUP 2: Cranes (100 ton rated capacity and over) Bauer Drill/Caisson.

GROUP 3: Cranes (under 100 ton rated capacity).

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).Vacuum Excavation Truck and Hydrovac Excavation Truck (27 HG pressure or greater).

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. Portable grout plant operator, portable water filtration 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.

GROUP 19: Front end loader(7 cubic yards or over); work boat 26 ft. and over.

GROUP 20: Excavator over 2 cubic yards; pile driver($3.00 premium when operator controls hammer).

GROUP 21: Excavator, 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 operaing), rubber tire excavator (drott 1085 similar), grader operator, bulldozer finegrade (slopes shaping, laser or GPS, ect.)

IRON0015-002 06/02/2025

	Rates	Fringes
Ironworkers: (Reinforcing, Structural and Precast Concrete Erection)	$ 45.25	43.62

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

LABO0146-001 04/06/2025

	Rates	Fringes
Laborers:		
GROUP 1	$ 35.70	28.85
GROUP 2	$ 35.95	28.85
GROUP 3	$ 36.20	28.85
GROUP 4	$ 38.70	28.85
GROUP 5	$ 37.45	28.85
GROUP 6	$ 37.70	28.85
GROUP 7	$ 21.42	28.85
GROUP 8:	$ 36.70	28.85
GROUP 9:	$ 38.70	28.85

LABORERS CLASSIFICATIONS

GROUP 1: Laborers (Unskilled), 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

GROUP 8: Acetylene burner (Hours worked with a torch)

GROUP 9: Toxic Waste Removers A or B With PPE

(On a site designated as a SuperFund Site by the U.S. Army Corps of Engineers and is deemed a HAZ-MAT site, and applies to employees required to wear OSHA leval A or B even if the PPE is not worn.)

LABO0146-002 04/06/2025

	Rates	Fringes
Laborers: (TUNNEL CONSTRUCTION)		
CLEANING, CONCRETE AND CAULKING TUNNEL:		
Concrete Workers, Form Movers and Strippers	$ 36.96	28.85
Form Erectors	$ 37.29	28.85
ROCK SHAFT, CONCRETE, LINING OF SAME AND TUNNEL IN FREE AIR:		
Brakemen, Trackmen, Tunnel Laborers, Shaft Laborers	$ 36.96	28.85
Laborers Topside, Cage Tenders, Bellman	$ 36.85	28.85
Miners	$ 37.93	28.85
SHIELD DRIVE AND LINER PLATE TUNNELS IN FREE AIR:		
Brakemen and Trackmen	$ 36.96	28.85
Miners, Motormen, Mucking Machine Operators, Nozzlemen, Grout Men, Shaft and Tunnel, Steel and Rodmen, Shield and Erector, Arm Operator, Cable Tenders	$ 37.93	28.85
TUNNELS, CAISSON AND CYLINDER WORK IN COMPRESSED AIR:		
Blaster	$ 44.42	28.85
Brakemen, Trackmen, Groutman, Laborers, Outside Lock Tender, Gauge Tenders	$ 44.22	28.85
Change House Attendants, Powder Watchmen, Top on Iron Bolt	$ 42.24	28.85
Mucking Machine Operator	$ 45.01	28.85

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.

---

* PAIN0011-003 06/01/2024

	Rates	Fringes
Painters: (BRIDGE CONSTRUCTION)		

Brush, Roller, Blasting (Sand, Water, etc.) Spray	$ 59.70	26.90

---

* PAIN0011-004 06/01/2025

	Rates	Fringes
Painters:		
Blast and Spray	$ 42.57	26.75
Brush and Roll	$ 39.57	26.75
Tanks, Towers, Swing	$ 41.57	26.75

TEAM0064-005 04/06/2025

	Rates	Fringes
Truck drivers:		
2 Axle Ready Mix	$ 36.27	32.68
2 Axle	$ 36.16	32.68
3 Axle Ready Mix	$ 36.33	32.68
3 Axle	$ 36.27	32.68
4 Axle Ready Mix	$ 37.19	32.68
4 Axle	$ 36.39	32.68
Heavy Duty Trailer 40 tons and over	$ 38.66	32.68
Heavy Duty Trailer up to 40 tons	$ 37.39	32.68
Snorkle Truck	$ 36.54	32.68
Specialized (Earth moving equipment other than conventional type on-the-road trucks and semi-trailers, including Euclids)	$ 36.44	32.68

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.

==========

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic

violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

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) (iii)).

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter identifier beginning with characters other than ""SU"", ""UAVG"", ?SA?, or ?SC? denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate prevailed in the survey for this classification, which in this example would be Plumbers. 0198 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, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The ""SU"" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted

average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

?SU? wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

1) Has there been an initial decision in the matter? This can be:

a) a survey underlying a wage determination
b) an existing published wage determination
c) an initial WHD letter setting forth a position on a wage determination matter
d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

Branch of Wage Surveys
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail 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 an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail 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 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.

==========

END OF GENERAL DECISION"

EXHIBIT F
State Wages and Other Related Information

Please refer to the Department of Labor website for the latest updates, annual adjusted wage rate increases, certified payroll forms and applicable statutes.
http://www.ctdol.state.ct.us/wgwkstnd/prevailwage.htm

Prevailing Wage Law Poster Language

THIS IS A PUBLIC WORKS PROJECT Covered by the PREVAILING WAGE LAW CT General Statutes Section 31-53 If

you have QUESTIONS regarding your wages CALL (860) 263-6790

Section 31-55 of the CT State Statutes requires every contractor or subcontractor performing work for the state to post in a prominent place the prevailing wages as determined by the Labor Commissioner.

Informational Bulletin

THE 10-HOUR OSHA CONSTRUCTION SAFETY AND HEALTH COURSE (applicable to public building contracts entered into on or after July 1, 2007, where the total cost of all work to be performed is at least $100,000)

(1) This requirement was created by Public Act No. 06-175, which is codified in Section 31-53b of the Connecticut General Statutes (pertaining to the prevailing wage statutes);

(2) The course is required for public building construction contracts (projects funded in whole or in part by the state or any political subdivision of the state) entered into on or after July 1, 2007;

(3) It is required of private employees (not state or municipal employees) and apprentices who perform manual labor for a general contractor or subcontractor on a public building project where the total cost of all work to be performed is at least $100,000;

(4) The ten-hour construction course pertains to the ten-hour Outreach Course conducted in accordance with federal OSHA Training Institute standards, and, for telecommunications workers, a ten-hour training course conducted in accordance with federal OSHA standard, 29 CFR 1910.268;

(5) The internet website for the federal OSHA Training Institute is http://www.osha.gov/fso/ote/training/edcenters/fact_sheet.html;

(6) The statutory language leaves it to the contractor and its employees to determine who pays for the cost of the ten-hour Outreach Course;

(7) Within 30 days of receiving a contract award, a general contractor must furnish proof to the Labor Commissioner that all employees and apprentices performing manual labor on the project will have completed such a course;

(8) Proof of completion may be demonstrated through either: (a) the presentation of a bona fide student course completion card issued by the federal OSHA Training Institute; or (2) the presentation of documentation provided to an employee by a trainer certified by the Institute pending the actual issuance of the completion card;

(9) Any card with an issuance date more than 5 years prior to the commencement date of the construction project shall not constitute proof of compliance;

(10) Each employer shall affix a copy of the construction safety course completion card to the certified payroll submitted to the contracting agency in accordance with Conn. Gen. Stat. § 31-53(f) on which such employee's name first appears;

(11) Any employee found to be in non-compliance shall be subject to removal from the worksite if such employee does not provide satisfactory proof of course completion to the Labor Commissioner by the fifteenth day after the date the employee is determined to be in non-compliance;

(12) Any such employee who is determined to be in noncompliance may continue to work on a public building construction project for a maximum of fourteen consecutive calendar days while bringing his or her status into compliance;

(13) The Labor Commissioner may make complaint to the prosecuting authorities regarding any employer or agent of the employer, or officer or agent of the corporation who files a false certified payroll with respect to the status of an employee who is performing manual labor on a public building construction project;

(14) The statute provides the minimum standards required for the completion of a safety course by manual laborers on public construction contracts; any contractor can exceed these minimum requirements; and

(15) Regulations clarifying the statute are currently in the regulatory process and shall be posted on the CTDOL website as soon as they are adopted in final form.

(16) Any questions regarding this statute may be directed to the Wage and Workplace Standards Division of the Connecticut Labor Department via the internet website of http://www.ctdol.state.ct.us/wgwkstnd/wgemenu.htm; or by telephone at (860)263-6790.

THE ABOVE INFORMATION IS PROVIDED EXCLUSIVELY AS AN EDUCATIONAL RESOURCE AND IS NOT INTENDED AS A SUBSTITUTE FOR LEGAL INTERPRETATIONS WHICH MAY ULTMATELY ARISE CONCERNIG THE CONSTRUCTION OF THE STATUTE OR THE REGULATIONS.

November 29, 2006

Notice

To All Mason Contractors and Interested Parties Regarding Construction Pursuant to Section 31-53 of the Connecticut General Statutes (Prevailing Wage)

The Connecticut Labor Department Wage and Workplace Standards Division is empowered to enforce the prevailing wage rates on projects covered by the above referenced statute.
Over the past few years, the Division has withheld enforcement of the rate in effect for workers who operate a forklift on a prevailing wage rate project due to a potential jurisdictional dispute. The rate listed in the schedules and in our Occupational Bulletin (see enclosed) has been as follows:

Forklift Operator:

- **Laborers (Group 4) Mason Tenders** - operates forklift solely to assist a mason to a maximum height of nine feet only.

- **Power Equipment Operator (Group 9)** - operates forklift to assist any trade and to assist a mason to a height over nine feet.

The U.S. Labor Department conducted a survey of rates in Connecticut, but it has not been published and the rate in effect remains as outlined in the above Occupational Bulletin.

Since this is a classification matter and not one of jurisdiction, effective January 1, 2007, the Connecticut Labor Department will enforce the rate on each schedule in accordance with our statutory authority.

Your cooperation in filing appropriate and accurate certified payrolls is appreciated.

CONNECTICUT DEPARTMENT OF LABOR
WAGE AND WORKPLACE STANDARDS DIVISION

CONTRACTORS WAGE CERTIFICATION FORM
Construction Manager at Risk/General Contractor/Prime Contractor

I,_____ of _____
Officer, Owner, Authorized Rep. Company Name

do hereby certify that the _____
Company Name

_____
Street

_____
City

and all of its subcontractors will pay all workers on the

_____
Project Name and Number

_____
Street and City

the wages as listed in the schedule of prevailing rates required for such project (a copy of which is attached hereto).

_____
Signed

Subscribed and sworn to before me this_____day of_____,_____.

_____
Notary Public

Return to: Connecticut Department of Labor Wage & Workplace Standards Division 200 Folly Brook Blvd., Wethersfield, CT 06109

Rate Schedule Issued (Date):_____

Information Bulletin
Occupational Classifications

The Connecticut Department of Labor has the responsibility to properly determine "job classification" on prevailing wage projects covered under C.G.S. Section 31-53(d).

Note: This information is intended to provide a sample of some occupational classifications for guidance purposes only. It is not an all-inclusive list of each occupation's duties. This list is being provided only to highlight some areas where a contractor may be unclear regarding the proper classification. If unsure, the employer should seek guidelines for CTDOL.

Below are additional clarifications of specific job duties performed for certain classifications:

⌜ ASBESTOS WORKERS

Applies all insulating materials, protective coverings, coatings and finishes to all types of mechanical systems.

⌜ ASBESTOS INSULATOR

Handle, install apply, fabricate, distribute, prepare, alter, repair, dismantle, heat and frost insulation, including penetration and fire stopping work on all penetration fire stop systems.

⌜ BOILERMAKERS

Erects hydro plants, incomplete vessels, steel stacks, storage tanks for water, fuel, etc. Builds incomplete boilers, repairs heat exchanges and steam generators.

⌜ BRICKLAYERS, CEMENT MASONS, CEMENT FINISHERS, MARBLE MASONS, PLASTERERS, STONE MASONS, PLASTERERS. STONE MASONS, TERRAZZO WORKERS, TILE SETTERS

Lays building materials such as brick, structural tile and concrete cinder, glass, gypsum, terra cotta block. Cuts, tools and sets marble, sets stone, finishes concrete, applies decorative steel, aluminum and plastic tile, applies cements, sand, pigment and marble chips to floors, stairways, etc.

⌜ CARPENTERS, MILLWRIGHTS, PILEDRIVERMEN, LATHERS, RESILEINT FLOOR LAYERS, DOCK BUILDERS, DIKERS, DIVER TENDERS

Constructs, erects, installs and repairs structures and fixtures of wood, plywood and wallboard. Installs, assembles, dismantles, moves industrial machinery. Drives piling into ground to provide foundations for structures such as buildings and bridges, retaining walls for earth embankments, such as cofferdams. Fastens wooden, metal or rockboard lath to walls, ceilings and partitions of buildings, acoustical tile layer, concrete form builder. Applies firestopping materials on fire resistive joint systems only. Installation of curtain/window walls only where attached to wood or metal studs. Installation of insulated material of all types whether blown, nailed or attached in

other ways to walls, ceilings and floors of buildings. Assembly and installation of modular furniture/furniture systems. Free-standing furniture is not covered. This includes free standing: student chairs, study top desks, book box desks, computer furniture, dictionary stand, atlas stand, wood shelving, two-position information access station, file cabinets, storage cabinets, tables, etc.

⌜ LABORER, CLEANING

• The clean up of any construction debris and the general (heavy/light) cleaning, including sweeping, wash down, mopping, wiping of the construction facility and its furniture, washing, polishing, and dusting.

⌜ DELIVERY PERSONNEL

• If delivery of supplies/building materials is to one common point and stockpiled there, prevailing wages are not required. If the delivery personnel are involved in the distribution of the material to multiple locations within the construction site then they would have to be paid prevailing wages for the type of work performed: laborer, equipment operator, electrician, ironworker, plumber, etc.

• An example of this would be where delivery of drywall is made to a building and the delivery personnel distribute the drywall from one "stockpile" location to further sub-locations on each floor. Distribution of material around a construction site is the job of a laborer or tradesman, and not a delivery personnel.

⌜ ELECTRICIANS

Install, erect, maintenance, alteration or repair of any wire, cable, conduit, etc., which generates, transforms, transmits or uses electrical energy for light, heat, power or other purposes, including the Installation or maintenance of telecommunication, LAN wiring or computer equipment, and low voltage wiring. *License required per Connecticut General Statutes: E-1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9.

⌜ ELEVATOR CONSTRUCTORS

Install, erect, maintenance and repair of all types of elevators, escalators, dumb waiters and moving walks. ***License required by Connecticut General Statutes: R-1, 2, 5, 6.**

⌜ FORKLIFT OPERATOR

Laborers Group 4) Mason Tenders - operates forklift solely to assist a mason to a maximum height of nine (9) feet only.

Power Equipment Operator Group 9 - operates forklift to assist any trade, and to assist a mason to a height over nine (9) feet.

⌜ GLAZIERS

Glazing wood and metal sash, doors, partitions, and 2 story aluminum storefronts. Installs glass windows, skylights, store fronts and display cases or surfaces such as building fronts, interior

walls, ceilings and table tops and metal store fronts. Installation of aluminum window walls and curtain walls is the "joint" work of glaziers and ironworkers, which require equal composite workforce.

⌜ IRONWORKERS

Erection, installation and placement of structural steel, precast concrete, miscellaneous iron, ornamental iron, metal curtain wall, rigging and reinforcing steel. Handling, sorting, and installation of reinforcing steel (rebar). Metal bridge rail (traffic), metal bridge handrail, and decorative security fence installation. Installation of aluminum window walls and curtain walls is the "joint" work of glaziers and ironworkers which require equal composite workforce.

⌜ INSULATOR

• Installing fire stopping systems/materials for "Penetration Firestop Systems": transit to cables, electrical conduits, insulated pipes, sprinkler pipe penetrations, ductwork behind radiation, electrical cable trays, fire rated pipe penetrations, natural polypropylene, HVAC ducts, plumbing bare metal, telephone and communication wires, and boiler room ceilings.

⌜ LABORERS

Acetylene burners, asphalt rakers, chain saw operators, concrete and power buggy operator, concrete saw operator, fence and guard rail erector (except metal bridge rail (traffic), decorative security fence (non-metal).

installation.), hand operated concrete vibrator operator, mason tenders, pipelayers (installation of storm drainage or sewage lines on the street only), pneumatic drill operator, pneumatic gas and electric drill operator, powermen and wagon drill operator, air track operator, block paver, curb setters, blasters, concrete spreaders.

⌜ PAINTERS

Maintenance, preparation, cleaning, blasting (water and sand, etc.), painting or application of any protective coatings of every description on all bridges and appurtenances of highways, roadways, and railroads. Painting, decorating, hardwood finishing, paper hanging, sign writing, scenic artwork and drywall hhg for any and all types of building and residential work.

⌜ LEAD PAINT REMOVAL

• Painter’s Rate 1. Removal of lead paint from bridges. 2. Removal of lead paint as preparation of any surface to be repainted. 3. Where removal is on a Demolition project prior to reconstruction. • Laborer’s Rate 1. Removal of lead paint from any surface NOT to be repainted. 2. Where removal is on a TOTAL Demolition project only.

⌜ PLUMBERS AND PIPEFITTERS

Installation, repair, replacement, alteration or maintenance of all plumbing, heating, cooling and piping. ***License required per Connecticut General Statutes: P-1,2,6,7,8,9 J1,2,3,4 SP-1,2 S-**

1,2,3,4,5,6,7,8 B-1,2,3,4 D-1,2,3,4.

⌐ POWER EQUIPMENT OPERATORS

Operates several types of power construction equipment such as compressors, pumps, hoists, derricks, cranes, shovels, tractors, scrapers or motor graders, etc. Repairs and maintains equipment. ***License required, crane operators only, per Connecticut General Statutes.**

⌐ ROOFERS

Covers roofs with composition shingles or sheets, wood shingles, slate or asphalt and gravel to waterproof roofs, including preparation of surface. (Demolition or removal of any type of roofing and or clean-up of any and all areas where a roof is to be re-laid.)

⌐ SHEETMETAL WORKERS

Fabricate, assembles, installs and repairs sheet metal products and equipment in such areas as ventilation, air-conditioning, warm air heating, restaurant equipment, architectural sheet metal work, Sheetmetal roofing, and aluminum gutters. Fabrication, handling, assembling, erecting, altering, repairing, etc. of coated metal material panels and composite metal material panels when used on building exteriors and interiors as soffits, facia, louvers, partitions, canopies, cornice, column covers, awnings, beam covers, cladding, sunshades, lighting troughs, spires, ornamental roofing, metal ceilings, mansards, copings, ornamental and ventilation hoods, vertical and horizontal siding panels, trim, etc. The sheet metal classification also applies to the vast variety of coated metal material panels and composite metal material panels that have evolved over the years as an alternative to conventional ferrous and non-ferrous metals like steel, iron, tin, copper, brass, bronze, aluminum, etc. Fabrication, handling, assembling, erecting, altering, repairing, etc. of architectural metal roof, standing seam roof, composite metal roof, metal and composite bathroom/toilet partitions, aluminum gutters, metal and composite lockers and shelving, kitchen equipment, and walk-in coolers. To include testing and air –balancing ancillary to installation and construction.

⌐ SPRINKLER FITTERS

Installation, alteration, maintenance and repair of fire protection sprinkler systems. ***License required per Connecticut General Statutes: F-1, 2, 3, 4.**

⌐ TILE MARBLE AND TERRAZZO FINISHERS

Assists and tends the tile setter, marble mason and terrazzo worker in the performance of their duties.

⌐ TRUCK DRIVERS

~How to pay truck drivers delivering asphalt is under REVISION~

Truck Drivers are required to be paid prevailing wage for time spent "working" directly on the site. These drivers remain covered by the prevailing wage for any time spent transporting between the

actual construction location and facilities (such as fabrication, plants, mobile factories, batch plant, borrow pits, job headquarters, tool yards, etc.) dedicated exclusively, or nearly so, to performance of the contract or project, which are so located in proximity to the actual construction location that it is reasonable to include them. ***License required, drivers only, per Connecticut General Statutes**.

For example:

• Material men and deliverymen are not covered under prevailing wage as long as they are not directly involved in the construction process. If, they unload the material, they would then be covered by prevailing wage for the classification they are performing work in: laborer, equipment operator, etc.
• Hauling material off site is not covered provided they are not dumping it at a location outlined above.
• Driving a truck on site and moving equipment or materials on site would be considered covered work, as this is part of the construction process.

Any questions regarding the proper classification should be directed to:

Public Contract Compliance Unit
Wage and Workplace Standards Division
Connecticut Department of Labor
200 Folly Brook Blvd, Wethersfield, CT 06109
(860) 263-6543.

Connecticut Department of Labor
Wage and Workplace Standards Division
FOOTNOTES

⌜ Please Note: If the "Benefits" listed on the schedule for the following occupations includes a letter(s) (+ a or + a+b for instance), refer to the information below.

Benefits to be paid at the appropriate prevailing wage rate for the listed occupation.

If the "Benefits" section for the occupation lists only a dollar amount, disregard the information below.

Bricklayers, Cement Masons, Cement Finishers, Concrete Finishers, Stone Masons
(Building Construction) and (Residential- Hartford, Middlesex, New Haven, New London and Tolland Counties)

a. Paid Holiday: Employees shall receive 4 hours for Christmas Eve holiday provided the employee works the regularly scheduled day before and after the holiday. Employers may schedule work on Christmas Eve and employees shall receive pay for actual hours worked in addition to holiday pay.

Elevator Constructors: Mechanics

a. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day, Christmas Day, plus the Friday after Thanksgiving.

b. Vacation: Employer contributes 8% of basic hourly rate for 5 years or more of service or 6% of basic hourly rate for 6 months to 5 years of service as vacation pay credit.

Glaziers

a. Paid Holidays: Labor Day and Christmas Day.

Power Equipment Operators
(Heavy and Highway Construction & Building Construction)

a. Paid Holidays: New Year's Day, Good Friday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day, provided the employee works 3 days during the week in which the holiday falls, if scheduled, and if scheduled, the working day before and the working day after the holiday. Holidays falling on Saturday may be observed on Saturday, or if the employer so elects, on the preceding Friday.

Ironworkers

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

Laborers (Tunnel Construction)

a. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day. No employee shall be eligible for holiday pay when he fails, without cause, to work the regular work day preceding the holiday or the regular work day following the holiday.

Roofers

a. Paid Holidays: July 4th, Labor Day, and Christmas Day provided the employee is employed 15 days prior to the holiday.

Sprinkler Fitters

a. Paid Holidays: Memorial Day, July 4th, Labor Day, Thanksgiving Day and Christmas Day, provided the employee has been in the employment of a contractor 20 working days prior to any such paid holiday.

Truck Drivers
(Heavy and Highway Construction & Building Construction)

a. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas day, and Good Friday, provided the employee has at least 31 calendar days of service and works the last scheduled day before and the first scheduled day after the holiday, unless excused.

Rev. 7/1/19

SEE BELOW FOR STATE WAGE RATES

EXHIBIT E

Minimum Rates and Classifications for
Heavy/Highway Construction

ID#: 25-10236

Connecticut Department of Labor
Wage and Workplace Standards Division

By virtue of the authority vested in the Labor Commissioner under provisions of Section 31-53 of the General Statutes of Connecticut, as amended, the following are declared to be the prevailing rates and welfare payments and will apply only where the contract is advertised for bid within 20 days of the date on which the rates are established. Any contractor or subcontractor not obligated by agreement to pay to the welfare and pension fund shall pay this amount to each employee as part of his/her hourly wages.

Project Number:
Project Town: Berlin
State#: 0007-0266
FAP#:
Project: Bridge No. 06955 - Glen Street over Mattabasset River

CLASSIFICATION	Hourly Rate	Benefits
1) Boilermaker	48.21	30.01
1a) Bricklayer, Cement Masons, Cement Finishers, Plasterers, Stone Masons	43.14	34.74
2) Carpenters, Piledrivermen	42.03	29.19
2a) Diver Tenders	42.03	29.19
2b) Divers Effluent	67.52	29.19
3) Divers	50.49	29.19
03a) Millwrights	43.25	29.13
03b) Carpenter-Welder	42.53	29.19
03c) Carpenter: Working with creosote lumber or acid	43.03	29.19

As of: October 6, 2025

4) Painters: (Bridge Construction) Brush, Roller, Blasting (Sand, Water, etc.), Spray	59.7	26.65
4a) Painters: Brush and Roller	39.57	26.50
4b) Painters: Spray	42.57	26.50
4bc) Painters: Spray Helper	40.57	26.50
4c) Painters: Steel Only	41.57	26.50
4d) Painters: Blast	44.57	26.50
4de) Painter: Blast Helper	40.57	26.50
4e) Painters: Tanks, Tower and Swingstage etc.	41.57	26.50
4f) Elevated Tanks (60 feet and above)	48.57	26.50
5) Electrician (Trade License required: E-1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9)	46.4	36.66+3% of gross wage
6) Ironworkers: Ornamental, Reinforcing, Structural, and Precast Concrete Erection	45.25	43.62 + a
7) Plumbers (Trade License required: (P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2) and Pipefitters (Including HVAC Work) (Trade License required: S-1,2,3,4,5,6,7,8 B-1,2,3,4 D-1,2,3,4 G-1, G-2, G-8, G-9)	50.58	36.30
----LABORERS---- -		
8) Group 1: General Laborers and concrete specialist	35.7	28.85

As of: October 6, 2025

8) Group 1a: Acetylene Burners (Hours worked with a torch)	36.7	28.85
9) Group 2: Chain saw operators, fence and guard rail erectors, pneumatic tool operators, powdermen	35.95	28.85
10) Group 3: Pipelayers	36.2	28.85
11) Group 4: Jackhammer/Pavement breaker (handheld); mason tenders (cement/concrete), catch basin builders, asphalt rakers, air track operators, block paver, curb setter and forklift operators	36.2	28.85
12) Group 5: Toxic waste removal (non-mechanical systems)	37.7	28.85
13) Group 6: Blasters	37.45	28.85
Group 7: Asbestos/lead removal, non-mechanical systems (does not include leaded joint pipe)	38.7	28.85
Group 8: Traffic control signalmen	21.42	28.85
Group 9: Hydraulic Drills	36.45	28.85
Group 10: Toxic Waste Removers A or B With PPE	38.7	28.85
----LABORERS (TUNNEL CONSTRUCTION, FREE AIR). Shield Drive and Liner Plate Tunnels in Free Air.----		
13a) Miners, Motormen, Mucking Machine Operators, Nozzle Men, Grout Men, Shaft & Tunnel Steel & Rodmen, Shield & Erector, Arm Operator, Cable Tenders	37.93	28.85 + a
13b) Brakemen, Trackmen, Miners' Helpers and all other men	36.96	28.85 + a

As of: October 6, 2025

----CLEANING, CONCRETE AND CAULKING TUNNEL----		
14) Concrete Workers, Form Movers, and Strippers	36.96	28.85 + a
15) Form Erectors	37.29	28.85 + a
----ROCK SHAFT LINING, CONCRETE, LINING OF SAME AND TUNNEL IN FREE AIR:----		
16) Brakemen, Trackmen, Tunnel Laborers, Shaft Laborers, Miners Helpers	36.96	28.85 + a
17) Laborers Topside, Cage Tenders, Bellman	36.85	28.85 + a
18) Miners	37.93	28.85 + a
----TUNNELS, CAISSON AND CYLINDER WORK IN COMPRESSED AIR: ----		
18a) Blaster	44.42	28.85 + a
19) Brakemen, Trackmen, Groutman, Laborers, Outside Lock Tender, Gauge Tenders	44.22	28.85 + a
20) Change House Attendants, Powder Watchmen, Top on Iron Bolts	42.24	28.85 + a
21) Mucking Machine Operator, Grout Boss, Track Boss	45.01	28.85 + a
----TRUCK DRIVERS----(*see note below)		
Block Truck	37.48	32.68 + a

2 Axle	36.16	32.68 + a
Helpers	34.66	32.68 + a
Three Axle Trucks; Two Axle Mixer	36.27	32.68 + a
Three Axle Mixer	36.33	32.68 + a
Four Axle Trucks	36.39	32.68 + a
Four Axle Mixer	37.19	32.68 + a
5 Axle	36.39	32.68 + a
5 Axle Mixer	37.19	32.68 + a
Heavy Duty Trailer (40 tons and over)	38.66	32.68 + a
Heavy Duty Trailer (up to 40 tons)	37.39	32.68 + a
Snorkle Truck	36.54	32.68 + a
Swivel Dump and Tack Truck	36.39	32.68 + a
Euclids and Semi Trailer	36.44	32.68 + a

----POWER EQUIPMENT OPERATORS----

Group 1: Crane Handling or Erecting Structural Steel or Stone, Hoisting Engineer (2 drums or over). (Trade License Required)	58.19	29.80 + a
Group 1a: Front End Loader (7 cubic yards or over); Work Boat 26 ft. and over.	53.33	29.80 + a
Group 2: Cranes (100 ton rate capacity and over); Bauer Drill/Caisson. (Trade License Required)	57.78	29.80 + a
Group 2a: Cranes (under 100 ton rated capacity).	56.79	29.80 + a
Group 2b: Excavator over 2 cubic yards; Pile Driver ($3.00 premium when operator controls hammer).	52.92	29.80 + a
Group 3: Excavator; Gradall; Master Mechanic; Hoisting Engineer (all types of equipment where a drum and cable are used to hoist or drag material regardless of motive power of operation), Rubber Tire Excavator (Drott-1085 or similar);Grader Operator; Bulldozer Fine Grade (slopes, shaping, laser or GPS, etc.). (Trade License Required)	51.92	29.80 + a
Group 4: Trenching Machines; Lighter Derrick; CMI Machine or Similar; Koehring Loader (Skooper).	51.42	29.80 + a
Group 5: Specialty Railroad Equipment; Asphalt Paver; Asphalt Spreader; Asphalt Reclaiming Machine; Line Grinder; Concrete Pumps; Drills with Self Contained Power Units; Boring Machine; Post Hole Digger; Auger; Pounder; Well Digger; Milling Machine (over 24" mandrel)	50.63	29.80 + a
Group 5 continued: Side Boom; Combination Hoe and Loader; Directional Driller.	50.63	29.80 + a
Group 6: Front End Loader (3 up to 7 cubic yards); Bulldozer (rough grade dozer).	50.22	29.80 + a
Group 7: Asphalt Roller; Concrete Saws and Cutters (ride on types); Vermeer Concrete Cutter; Stump Grinder; Scraper; Snooper; Skidder; Milling Machine (24" and under Mandrel)	49.77	29.80 + a

As of: October 6, 2025

Group 8: Mechanic, Grease Truck Operator, Hydroblaster, Barrier Mover, Power Stone Spreader; Welder; Work Boat under 26 ft.; Transfer Machine.	49.25	29.80 + a
Group 9: Front End Loader (under 3 cubic yards), Skid Steer Loader regardless of attachments (Bobcat or Similar); Fork Lift, Power Chipper; Landscape Equipment (including hydroseeder), Vacuum Excavation Truck and Hydrovac Excavation Truck (27 HG pressure or greater).	48.67	29.80 + a
Group 10: Vibratory Hammer, Ice Machine, Diesel and Air Hammer, etc.	45.96	29.80 + a
Group 11: Conveyor, Earth Roller; Power Pavement Breaker (whiphammer), Robot Demolition Equipment.	45.96	29.80 + a
Group 12: Wellpoint Operator.	45.87	29.80 + a
Group 13: Compressor Battery Operator.	45.12	29.80 + a
Group 14: Elevator Operator; Tow Motor Operator (Solid Tire No Rough Terrain).	43.6	29.80 + a
Group 15: Generator Operator; Compressor Operator; Pump Operator; Welding Machine Operator; Heater Operator.	43.06	29.80 + a
Group 16: Maintenance Engineer.	42.2	29.80 + a
Group 17: Portable Asphalt Plant Operator; Portable Crusher Plant Operator; Portable Concrete Plant Operator., Portable Grout Plant Operator, Portable Water Filtration Plant Operator.	47.91	29.80 + a
Group 18: Power Safety Boat; Vacuum Truck; Zim Mixer; Sweeper; (minimum for any job requiring CDL license).	44.7	29.80 + a
Surveyor: Chief of Party	48.16	29.80 + a
Surveyor: Assistant Chief of Party	44.41	29.80 + a

As of: October 6, 2025

Surveyor: Instrument Man	42.73	29.80 + a
Surveyor: Rodman or Chairman	36.78	29.80 + a

**NOTE: SEE BELOW

----LINE CONSTRUCTION----(Railroad Construction and Maintenance)----

20) Lineman, Cable Splicer, Technician	57.6	32.85
21) Heavy Equipment Operator	51.84	29.95
22) Equipment Operator, Tractor Trailer Driver, Material Men	48.96	29.01
23) Driver Groundmen	43.2	26.84
23a) Groundman Experienced	31.68	13.91

----OUTSIDE LINE CONSTRUCTION----

24) Driver Groundmen	42.09	26.84
25) Groundmen	30.87	13.91
26) Heavy Equipment Operators	50.51	29.95
27) Linemen, Cable Splicers, Dynamite Men	56.12	32.85

As of: October 6, 2025

28) Material Men, Tractor Trailer Drivers, Equipment Operators	47.7	29.01
29) Technician	56.12	32.85
----COMMUNICATION----		
Sales & Service Technician: To include but not limited to: Installation, Repair, Splicing and Maintenance	48.84	18.07
----DREDGING----		
Class A1: Mechanical Dredge Operator	45.26	17.22+a+b
Class B1: Maintenance Engineer	39.14	16.78+a+b
Class C1: Mate/Welder	35.83	16.54+a+b
Class D: Deckhand	28.81	16.03+a+b

Welders: Rate for craft to which welding is incidental.
Surveyors: Hazardous material removal: $3.00 per hour premium.
*Note: Hazardous waste removal work receives additional $1.25 per hour for truck drivers.
**Note: Hazardous waste premium $3.00 per hour over classified rate.
Truck Drivers: Trainers Premium: $3.00 over wage rate.
Truck Drivers: Night Premium - Mixer Drivers: $2.00 over wage 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

As of: October 6, 2025

All classifications that indicate a percentage of the fringe benefits must be calculated at the percentage rate times the "base hourly rate".

Apprentices duly registered under the Commissioner of Labor's regulations on "Work Training Standards for Apprenticeship and Training Programs" Section 31-51-d-1 to 12, are allowed to be paid the appropriate percentage of the prevailing journeymen hourly base and the full fringe benefit rate, providing the work site ratio shall not be less than one full-time journeyperson instructing and supervising the work of each apprentice in a specific trade.

~~Connecticut General Statute Section 31-55a: Annual Adjustments to wage rates by contractors doing state work ~~

The Prevailing wage rates applicable to this project are subject to annual adjustments each July 1st for the duration of the project.
Each contractor shall pay the annual adjusted prevailing wage rate that is in effect each July 1st, as posted by the Department of Labor.
It is the contractor's responsibility to obtain the annual adjusted prevailing wage rate increases directly from the Department of Labor's website.
The annual adjustments will be posted on the Department of Labor's Web page: www.ct.gov/dol. For those without internet access, please contact the division listed below.
The Department of Labor will continue to issue the initial prevailing wage rate schedule to the Contracting Agency for the project.
All subsequent annual adjustments will be posted on our Web Site for contractor access.
Contracting Agencies are under no obligation pursuant to State labor law to pay any increase due to the annual adjustment provision.

Effective October 1, 2005 - Public Act 05-50: any person performing the work of any mechanic, laborer, or worker shall be paid prevailing wage

All Person who perform work ON SITE must be paid prevailing wage for the appropriate mechanic, laborer, or worker classification.

All certified payrolls must list the hours worked and wages paid to All Persons who perform work ON SITE regardless of their ownership i.e.: (Owners, Corporate Officers, LLC Members, Independent Contractors, et. al)

Reporting and payment of wages is required regardless of any contractual relationship alleged to exist between the contractor and such person.

~~Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clause (29 CFR 5.5 (a) (1) (ii)).

Please direct any questions which you may have pertaining to classification of work and payment of prevailing wages to the Wage and Workplace Standards Division, telephone (860)263-6790.

As of: October 6, 2025