



**TOWN OF MANSFIELD  
CONTRACT DOCUMENTS AND SPECIFICATIONS**

**Hunting Lodge Road over  
Eagleville Brook Culvert Replacement**

**Submission Deadline:**

2:00 p.m. August 17, 2023

**Submission Contact and Address:**

Director of Public Works  
Public Works Department  
4 South Eagleville Road  
Mansfield, Connecticut 06268

[mansfieldct.gov](http://mansfieldct.gov)

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## **INVITATION TO BID**

Bidders wishing to submit a proposal for this solicitation are requested to respond online through our secure E-Procurement portal, Bonfire. Responses can be submitted at the following link: [mansfieldct.bonfirehub.com](https://mansfieldct.bonfirehub.com) under the bid title "Hunting Lodge Road over Eagleville Brook Culvert Replacement". Bidders will be required to create a Bonfire profile before submitting their bid. Step-by-step instructions on how to register as a vendor are available at this website: [Vendor Registration](#). Due to the bid collection change to a secure online platform, multiple copies of your bid are no longer required. Please upload one (1) copy of all required bid documentation. Qualifications and proposals will be accepted until **August 17, 2023 at 2:00pm**. Proposals received after that time will not be considered.

The Instructions to Bidders, Form of Bid, Scope of Services, and other contract documents may be examined and downloaded from the "Your Government" "RFQ, RFP, and Bid Postings" section of the Town of Mansfield website [mansfieldct.gov](https://mansfieldct.gov).

An optional Pre-Bid Conference will be held at Audrey P. Peck Municipal Building, 4 South Eagleville Road, Mansfield, CT 06268. Please meet in the Council Chambers at 11:00 a.m., July 27, 2023. All bidders are required to inform themselves fully of the conditions relating to the construction and labor under which the work will be or is now being performed and the contractor shall employ, as far as possible, such methods and means in the carrying out of this work cause interruption or interference with any other contractor.

**NOTE:** Each bid must be accompanied by Bid Security on form furnished by the Town of Mansfield. Bid Security is to be made payable to the Town of Mansfield in an amount of five percent (5%) of Bidder's maximum Bid Price and in the form of cash, a certified or cashier's check, or a Bid Bond, issued by a surety company on the Federal Treasury Index List. The Bid Security shall be sealed in a separate envelope containing the Bid. The Town of Mansfield reserves the right to reject any and all bids or to waive any defect, irregularities in the bidding.

**NOTE:** All Bidders will be required to certify that they are not on the Comptroller General's list of ineligible contractors. Further, the Contractor will be required to comply with all applicable equal employment opportunity laws and regulations.

**NOTE:** The Town hereby notifies all Bidders that in regard to any contract entered into pursuant to this Request for Proposals, advertisement or solicitation, small and/or minority business enterprises will be afforded full opportunity to submit proposals in response, and will not be subjected to discrimination on the basis of race, color, sex, or national origin in consideration for an award.

An Affirmative Action/Equal Opportunity Employer. Minority/Women's Business Enterprises are encouraged to apply. For additional information, contact John Carrington, Mansfield Department of Public Works, at (860) 429-3331 or by email at [dpw@mansfieldct.org](mailto:dpw@mansfieldct.org).

## **INFORMATION FOR BIDDERS**

### **1. Receipt and Opening of Bids**

Bidders wishing to submit a proposal for this solicitation are requested to respond online through our secure E-Procurement portal, Bonfire. Responses can be submitted at the following link: [mansfieldct.bonfirehub.com](https://mansfieldct.bonfirehub.com) under the bid title "Hunting Lodge Road over Eagleville Brook Culvert Replacement." Bidders will be required to create a Bonfire profile before submitting their bid. Step-by-step instructions on how to register as a vendor are available at this website: [Vendor Registration](#). Due to the bid collection change to a secure online platform, multiple copies of your bid are no longer required. Please upload one (1) copy of all required bid documentation. Qualifications and proposals will be accepted until **August 17, 2023 at 2:00pm**. Proposals received after that time will not be considered.

Any bid may be withdrawn at any time prior to the time fixed in the published notice for the opening of bids only by written request for the withdrawal of the bid filed with the Director of Finance. The request shall be executed by the bidder or his duly authorized representative. The withdrawal of a bid does not prejudice the right of the bid to file a new bid. Whether or not the bids are opened exactly at the time fixed in the published notice for the opening of bids, a bid will not be received after that time, nor may any bids be withdrawn within sixty (60) days after the time fixed in the published notice for the opening of bids.

### **2. Optional Pre-Bid Conference**

An Optional Pre-Bid Conference will be held at the Audrey P. Peck Municipal Building, 4 South Eagleville Road, Mansfield, CT 06268. Please meet in the Council Chambers at 11:00 AM on July 27, 2023.

### **3. Preparation of Bid**

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

The bidder shall insert the price per stated unit and the extensions against each unit which he proposed to provide. In the event of a discrepancy between the unit price and the extension, the unit price shall govern. (If discounts are shown and there is an error in the extension of the total, the discount offered shall govern.) If the price bid per unit is based on any unit other than that stated, the bidder shall state the unit on which the unit price is based.

Each bid must be submitted to the Bonfire platform.

All information shall be entered in ink or by typewriter. Mistakes may be crossed out and corrections inserted before submission of your bid. The person signing the bid shall initial corrections in ink. Corrections and/or modifications received after the closing time specified will not be accepted.

#### **4. Method of Bidding**

The Town invites the following bid:

*Hunting Lodge Road over Eagleville Brook Culvert Replacement*

#### **5. Qualifications and Experience of Bidder**

Bidders must present satisfactory evidence that they are fully prepared with the necessary experience, capital, machinery and material to furnish the articles called for and to conduct the work as required by the specifications.

The Town may make such investigations as deemed necessary to determine the ability of the bidder to perform the work, and the bidder shall furnish for the Town all such information and data for this purpose as the Town may request. The Town reserves the right to reject any bid if the evidence submitted by, or investigation of, or the Town's previous experience with, such bidder fails to satisfy the Town that such bidder is properly qualified to carry out the obligations of the contract and to satisfactorily complete the work contemplated therein. Conditional bids will not be accepted.

#### **6. Bid Bond Requirements**

##### Bid Security

Each bid must be accompanied by bid bond or certified check of the bidder in the amount of five percent (5%) of the Base Bid. Such bond or check will be returned to all except the three lowest bidders within five days after the opening of bids, and the remaining cash or checks will be returned promptly after the Town and the accepted bidder have executed the contract, or if no award has been made within 60 days of the opening of bids upon demand of the bidder at any time thereafter, so long as he has not been notified of the acceptance of his bid. Surety Company shall be on the Federal Treasury Index List.

The successful bidder, upon his failure or refusal to execute and deliver the contract and bonds required within 10 days after he has received notice of the acceptance of his bid, shall forfeit to the Town as liquidated damages for such failure or refusal, the security deposited with his bid.

#### **7. Time of Completion, Liquidated Damages**

Bidder must agree to commence work within 21 days of a date to be specified in a written notice to proceed and to fully complete the project prior to the November 30, 2023 completion date for this project. The Bidder must also agree to pay as liquidated damages,

the sum of \$500 for each consecutive calendar day beyond the aforementioned completion date (refer also to Section 1.08 Prosecution and Progress in the Special Provisions) as hereinafter provided in the General Conditions.

## **8. Conditions of Work**

Each bidder must inform himself fully of the conditions relating to the work specified and the employment of labor thereon. Failure to do so will not relieve a successful bidder of his obligation to furnish all equipment, materials and labor necessary to carry out the provisions of his contract.

## **9. Addenda and Interpretations**

When a bidder desires an interpretation or clarification of any ambiguity in the bidding documents, he must contact the Director of Public Works prior to the bid opening. The Director of Public Works interpretation shall be final and will be made known to all bidders concerned.

If any bidder contemplating submitting a proposal is in doubt as to the true meaning of any part of these specifications, he may submit requests for information and/or clarification in writing via e-mail to [dpw@mansfieldct.org](mailto:dpw@mansfieldct.org) by August 9, 2023. No interpretations as to the meaning of the plans, specifications, or other Contract Documents shall be made to any bidder orally.

Addenda information will be available online at <http://www.mansfieldct.gov>. It is strongly suggested that bidders check for any addenda a minimum of forty-eight hours in advance of the bid deadline. Failure of any bidder to receive any such addendum or interpretations shall not relieve any bidder from any obligations under his/her bid as submitted. Each bidder is responsible for checking the Town's website to determine if the Town has issued any addenda and, if so, to complete its proposal in accordance with the RFP as modified by the addenda. All addenda so issued shall become part of the Contract Documents. Oral explanations will not be binding on the Town.

## **10. Acceptance or Rejection of Bids; Award of Contract**

The contract will be awarded on the basis of the lowest responsive and responsible Bid which shall include a summation of all required items to complete work. The bid will be a lump sum bid and the bidder is not required to bid individual items based on unit price. No additional time will be allotted for the inclusion of the Alternate Bid, nor may any claim be filed for additional compensable or non-compensable delay due merely to the addition of an add bid item and its ramifications. All work must be completed within the time specified in the "Contract Documents"/Agreement.

In the event of any discrepancies between this Notice to Bidders and the Information for Bidders within the Contract Documents this Information for Bidders governs.

No bid received after the advertised time of receiving bids will be considered. No bid unaccompanied by the appropriate bid surety will be considered. The Town reserves the



right to accept any bid, to waive any defects and informalities in the bids, and to reject any and all bids, or alternates.

The contract will be awarded to the lowest responsible and qualified bidder whose bid is the lowest of those bidders possessing the skill, ability and integrity necessary to perform the work in good faith in compliance with these conditions and contract documents. The bidder to whom the award is made will be notified at the earliest possible date. The successful bidder shall execute and deliver to the Town, within ten (10) days after notification of the award, an agreement in the form included in the contract documents, in such number as the Town may require.

#### **11. Security for Faithful Performance**

Simultaneously with the delivery of the executed contract, the successful bidder shall furnish to the Town a surety bond or bonds in the amount of one hundred percent (100%) of the total bid price as security for the faithful performance of this contract. In addition, contractor shall furnish a 100% payment bond to insure the payment of all persons performing labor on the project under this contract and furnishing materials and equipment in connection with this contract, as specified in the General Conditions included herein.

The surety company shall be listed on the Federal Treasury Index List, be a licensed bonding agent in the State of Connecticut and shall be satisfactory to the Town. Said bonds shall contain the full name and address of the firm or agency to whom bonds are to be returned upon release by the Town.

#### **12. Power of Attorney**

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

#### **13. Contractor's Indemnity**

The successful bidder shall indemnify and save harmless the Town of Mansfield according to the Contractor's Indemnification contained herein as Exhibit A and incorporated into and made a part of this agreement. Exhibit A must be signed and notarized and submitted to the Town prior to commencement of this project (agreement).

#### **14. Insurance Requirements**

The Contractor shall procure and maintain insurance against claims for injuries or losses to persons or property that are alleged to have arisen in connection with activities of the Contractor and any agents, representatives, subcontractors or employees. Insurance companies must be licensed by the State of Connecticut or otherwise acceptable to the Town. The cost of such insurance, including required endorsements or amendments, shall be the sole responsibility of the Contractor. Full disclosure of any non-standard exclusions is required for all required coverages.

The coverage indicated below at not less than the specified limits are required for this project (agreement):

- A. Comprehensive General Liability coverage naming the TOWN and STATE OF CONNECTICUT as additional insured, written on an occurrence basis: \$1,000,000 per occurrence \$2,000,000 aggregate
- B. Automobile Liability coverage, including coverage for hired or borrowed autos: \$2,000,000 per accident-combined single limit
- C. Workers' Compensation Coverage, (as per Connecticut law and custom) and employer's liability coverage \$100,000 (each accident) / \$500,000 (Disease, each employee) / \$100,000 (Disease, policy limit) limits or "Certificate of Solvency" issued by Connecticut Workers' Compensation Commission for self-insurers.
- D. Umbrella/Excess Liability: The contractor will maintain coverage applying over the underlying Commercial General Liability/Automobile Liability, Pollution Liability (where applicable), and Employer Liability section of the Workers' Compensation coverage. Minimum limits: \$2,000,000 per occurrence/\$2,000,000 annual aggregate. The Town of Mansfield shall have the sole discretion in increasing or reducing the Umbrella/Excess Liability coverage requirements depending on the scope and/or size of the work to be performed by Contractor/Bidder.

Commercial General Liability, Commercial Auto Liability, and Umbrella/Excess Liability coverage shall be written on a Primary, Non-Contributory Basis.

The Contractor shall furnish the Town with certificates showing the type, amount, class of operations covered, effective dates, and dates of expiration of policies. Such certificates shall also contain substantially the following statements: "The insurance covered by this certificate will not be canceled or materially altered, except after thirty (30) days written notice has been received by the Town." Each policy of insurance shall include a waiver of subrogation in favor of the Town of Mansfield.

The required insurance form shall be certified by a duly authorized representative of the insurer(s) and incorporated into and made a part of this agreement. Properly executed certificates signifying adequate coverage in effect for the duration of the contract with renewal certificates issued not less than 30 days prior to expiration of a policy period, must be submitted with the bid on file with the Town prior to commencement of this project (agreement).

The Town of Mansfield shall be listed as "additional insured" by name on all insurance certifications except Worker's Compensation & Employers Liability. Failure of the Contractor to maintain all required insurance in accordance with the Contract shall constitute a material breach of the Contract and shall subject the Contractor the Town's withholding liquidated damages from the Contractor in the amount of five percent (5%) of the total Contract price, as it may be amended by construction orders, subject to the continued commercial availability of such coverage.

## **15. Notice of Special Conditions**

Attention is particularly called to those parts of the contract documents and specifications which deal with the following:

(a) Special Conditions:

- General
- Coordination with Adjacent Projects
- Existing Conditions
- Traffic Control and Warning Signs
- Sampling, Inspection and Testing of Materials
- ConnDOT Specifications
- Safety
- Delays
- Protection of Existing Road and Facilities
- Protection Against High Water and Storm
- Lights, Barriers, Watchmen and Indemnity
- Night Work
- Shoring
- Working Hours
- Time of Completion
- Private Property/Construction of Adjoining Buildings
- Notice to Contractor – Permits/Permit Applications
- Control of Materials
- Job Coordination Meetings

**16. Laws and Regulations**

The bidder’s attention is directed to the fact that all applicable federal and state laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over the work specified herein shall apply to the contract throughout, and they will be deemed to be included in the contract the same as though herein written out in full.

**17. Obligation of Bidder**

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

**18. Non-Collusion Affidavit**

Bidder shall complete the attached non-collusion affidavit, Exhibit A, and return the completed form with the bid. Bids without a completed non-collusion affidavit will be considered non-responsive.

**19. CHRO Form**

Bidder shall complete the attached Connecticut Commission on Human Rights and Opportunities Form and submit a completed and signed form with his/her bid. Bids without a completed CHRO form will be considered non-responsive. The form is located in Exhibit B.

**20. Town of Mansfield Bidding Ordinance Form**

The form located in Exhibit C shall be completed and attached to the prospective bidder’s submission. Failure to complete and attach the form may result in the rejection of the bid.

**21. Qualifications of Bidder**

The form located in Exhibit D shall be completed and attached to the prospective bidder’s submission. Failure to complete and attach the form may result in the rejection of the bid.

**BID FORM / PROPOSAL**

**HUNTING LODGE ROAD OVER EAGLEVILLE BROOK CULVERT REPLACEMENT**

We the undersigned certify that all statements herein are made on behalf of

\_\_\_\_\_ hereinafter called "Bidder",  
organized and existing under the laws of the State of \_\_\_\_\_,  
doing business as \* \_\_\_\_\_  
of the City/Town of \_\_\_\_\_ State of \_\_\_\_\_,  
to the Town of Mansfield Director of Finance, hereinafter referred to the "Town".

The Bidder, in compliance with your request for bids for the "Hunting Lodge Road over Eagleville Brook Culvert Replacement" in the Town of Mansfield, having examined the specifications with related documents and the sites of the proposed work, and being familiar with all the conditions surrounding the construction of the proposed work including the availability of materials, equipment and labor, hereby proposes to furnish all the materials, equipment, labor and supplies to accomplish the work as specified in accordance with the contract documents, within the time set forth herein, and at the price stated below. These prices are to cover all expenses incurred in performing the work required under the contract documents, of which this proposal is a part.

Bidder hereby agrees to commence work under this contract within 21 days of a date to be specified in a written "Notice to Proceed" from the Town and to fully complete all required work prior to the November 30, 2023 completion date for this project, as stipulated in the specifications. Bidder further agrees to pay as liquidated damages the sum of \$500 for each consecutive calendar day beyond the aforementioned completion date as hereinafter provided in the General Conditions.

Bidder acknowledges receipt of the following addenda:

No.	Date
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

\* Insert Name of Corporation, Partnership, or Person submitting a bid

This BID is for the complete replacement of the existing culvert at Hunting Lodge Road carrying Eagleville Brook Culvert and associated roadway construction in Mansfield, CT. The replacement culvert consists of a combination of a 48-inch diameter reinforced concrete pipe (RCP) and a 6'x8' precast concrete box culvert with associated cast-in-place headwalls and wing-walls and relocating an existing water line and installing temporary water.

**BASE BID –Hunting Lodge Road over Eagleville Brook Culvert Replacement**

I shall furnish all labor, materials, equipment, and services necessary to perform the work required for Hunting Lodge Road over Eagleville Brook Culvert Replacement for the lump sum price of:

**Total Lump Sum Bid Price:**        \$\_\_\_\_\_

Total Lump Sum Bid Price in Words: \_\_\_\_\_

The above price shall include all materials, equipment and labor, all transportation costs, overhead, profit, insurance, etc. to provide for the finished work of the kind called for. (Amounts shall be shown in both words and figures. In case of discrepancy the amount shown in words will govern.)

Bidder understands that the Town reserves the right to reject any or all bids. The Bidder agrees that this bid shall be good and may not be withdrawn for a period of 60 calendar days after the scheduled closing time for receiving proposals.

Upon receipt of written notice of the acceptance of this proposal, the Bidder will execute the formal contract attached within ten (10) days and deliver a surety bond or bonds and appropriate insurance coverage certificates as required by the General Conditions.

The bid security attached in the sum of \_\_\_\_\_

(\$\_\_\_\_\_) is to become the property of the Town in the event the contract and bond are not executed within the time set for the above, as liquidated damages for the delay and additional expense to the Town caused thereby.

The Undersigned understands and acknowledges that the failure to comply with the requirements of these certifications constitutes a non-responsive bid and thereby invalidates this entire bid proposal.

Respectfully submitted:

Date: \_\_\_\_\_

By: \_\_\_\_\_  
(Signed Name of bidder)

Seal (if corporation)

\_\_\_\_\_  
(Printed Name of Bidder)

\_\_\_\_\_  
(Title)

\_\_\_\_\_  
(Company Name)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(City, Name)

\_\_\_\_\_  
(Phone)

\_\_\_\_\_  
(E-Mail)

**Statement of Work.** The Contractor shall furnish all supervision, technical personnel, labor, materials, machinery, tools, appurtenances, equipment and services, including utility and transportation services and perform and complete all work and required supplemental work for the completion of this Contract in strict accordance with the hereinafter referenced Contract Documents, including all Addenda thereto, numbered.

**The Contract Price.** The Town will pay the Contractor for the performance of the Contract in current funds, for the total quantities of work performed for each item. Upon award of the contract, the Contractor submit to the Town a detailed Schedule of Prices that constitutes his lump sum bid in the format shown below.

PROJECT: \_\_\_\_\_

PAYMENT ESTIMATE NO. \_\_\_\_\_

DATE OF ESTIMATE \_\_\_\_\_

FROM \_\_\_\_\_

PAGE \_\_\_\_\_ of \_\_\_\_\_

TO \_\_\_\_\_

ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY FROM BID	UNIT PRICE	TOTAL	QUANTITY PRIOR TO THIS ESTIMATE	QUANTITY THIS ESTIMATE	TOTAL QUANTITY TO DATE	TOTAL VALUE OF WORK IN PLACE

**EXHIBIT A: CERTIFICATION OF NON-COLLUSION**

The Undersigned certifies, under penalties of perjury:

That this Proposal has been made by the Proposer independently, and has been submitted without collusion, and without any agreement, understanding, or planned common course of action with any other vendor of materials, supplies, equipment, or services described in this procurement document, designed to limit independent bidding or competition;

That the contents of the proposal have not been communicated by the Proposer or it's employees or agents to any person not an employee or agent of the Proposer or it's surety or any bond furnished with the proposal, and will not be communicated to any such person prior to the official awarding of this procurement.

That I have fully informed myself regarding the accuracy of the statement made in the certificate.

SIGNATURE: \_\_\_\_\_

NAME: \_\_\_\_\_

FIRM: \_\_\_\_\_

TITLE: \_\_\_\_\_

DATE: \_\_\_\_\_



**EXHIBIT B: CHRO FORMS**

## EXHIBIT C: BIDDING ORDINANCE FORM

**Town of Mansfield  
Department of Public Works  
QUESTIONNAIRE CONCERNING OCCUPATIONAL  
HEALTH AND SAFETY**

The Town of Mansfield is a political subdivision of the State of Connecticut and it is required by various state statutes and regulations and by its own Town Code of Ordinances to obtain background information on prospective contractors prior to entering into a contract. The questions below are designed to assist the Town of Mansfield in procuring this information.

	Yes	No
1. Has the Bidder been cited for three or more willful or serious violations of any occupational safety and health act?	<input type="checkbox"/>	<input type="checkbox"/>
2. Has the Bidder received one or more criminal convictions related to the injury or death of any employee in the three-year period preceding the issuance of this Request For Bids/Proposals/Qualifications?	<input type="checkbox"/>	<input type="checkbox"/>
3. Has the Bidder been the recipient of one or more ethical violations from the State of Connecticut Ethics Commission during the three-year period preceding the issuance of this Request For Bids/Proposals/Qualifications?	<input type="checkbox"/>	<input type="checkbox"/>
4. The Bidder shall provide three (3) References for work completed within the last five (5) years.		
4a. Designer/Owner Contract Value (\$) Contact Name Phone No Work Description		
4b. Designer/Owner Contract Value (\$) Contact Name Phone No Work Description		
4c. Designer/Owner Contract Value (\$) Contact Name Phone No Work Description		

## **EXHIBIT D: QUALIFICATIONS OF BIDDER**

The Bidder is required to submit on the following pages the information required in regard to their qualifications for the work.

- A. Previous Experience of firm performing similar work (number of years): \_\_\_\_\_
- B. Is the bidder a SBE certified by the State of Connecticut? \_\_\_\_\_
- C. List the location, character, cost and date of similar projects. Include the names of engineers or officials overseeing these projects previously constructed by the undersigned bidder. Include at least 3 projects. Attach separate sheet(s) if needed.

1. Municipality Name: \_\_\_\_\_

Location (City, State): \_\_\_\_\_

Contact Person: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Year Work Performed: \_\_\_\_\_

Cost of Project: \_\_\_\_\_

2. Municipality Name: \_\_\_\_\_

Location (City, State): \_\_\_\_\_

Contact Person: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Year Work Performed: \_\_\_\_\_

Cost of Project: \_\_\_\_\_

3. Municipality Name: \_\_\_\_\_

Location (City, State): \_\_\_\_\_

Contact Person: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Year Work Performed: \_\_\_\_\_

Cost of Project: \_\_\_\_\_

4. Municipality Name: \_\_\_\_\_

Location (City, State): \_\_\_\_\_

Contact Person: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Year Work Performed: \_\_\_\_\_

Cost of Project: \_\_\_\_\_

D. The Equipment which the bidder will have available for performing the work under this contract is as follows. Attach separate sheet(s) if needed.

Own Equipment:

Rented Equipment:

E. List references for the financial resources and stability of the undersigned bidder. Include Banks, Surety Companies, major material and equipment suppliers, etc.

F. List any contracts or projects that the undersigned bidder has failed to complete satisfactorily, including those in which the bidders surety has participated. If there have been no contracts which the bidder has failed to complete satisfactorily, the bidder shall definitely so state.

SIGNATURE: \_\_\_\_\_

NAME: \_\_\_\_\_

FIRM: \_\_\_\_\_

**BID BOND**

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

\_\_\_\_\_

as Principal, and \_\_\_\_\_

as Surety, are hereby held and firmly bound unto \_\_\_\_\_

as Owner in the penal sum of \_\_\_\_\_

for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors and assigns.

Signed, this \_\_\_\_\_ day of \_\_\_\_\_, 2023

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

\_\_\_\_\_ a certain bid, attached hereto and hereby

made a part hereof to enter into a contract in writing, for the \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
NOW, THEREFORE,

- a) If said Bid shall be rejected, or in the alternate,
- b) If said Bid shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said Bid) and shall furnish a bond for his faithful performance of said contract, and shall in all other respects perform the agreement created by the acceptance of said bid, then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

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

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

\_\_\_\_\_  
Principal

\_\_\_\_\_  
Surety

By: \_\_\_\_\_

By: \_\_\_\_\_

**CONTRACT AGREEMENT**

**TOWN OF MANSFIELD**

**DEPARTMENT OF PUBLIC WORKS**

**HUNTING LODGE ROAD OVER EAGLEVILLE BROOK CULVERT REPLACEMENT**

This agreement made and entered into on the \_\_\_\_\_ day of \_\_\_\_\_, 2023, between:

THE TOWN OF MANSFIELD, acting by and through its Director of Finance, and hereinafter referred to as "Town",

\_\_\_\_\_, a corporation organized and existing under the laws of the State of \_\_\_\_\_, a partnership, or an individual doing business as \_\_\_\_\_ and hereinafter referred to as "Contractor,"

WITNESSETH;

That for and in consideration of the payments and agreements hereinafter mentioned, the CONTRACTOR hereby agrees with the TOWN to commence and complete the work described as follows:

**HUNTING LODGE ROAD OVER EAGLEVILLE BROOK CULVERT REPLACEMENT**

Hereinafter called the PROJECT, for the sum of \_\_\_\_\_ dollars (\$\_\_\_\_\_) and all extra work in connection therewith, under the terms as stated in the General and Special Conditions of the Contract; and at his (its or their) own proper cost and expense to furnish all the materials, supplies, machinery, equipment, tools, superintendence, labor insurance, and other accessories and services necessary to complete said project in accordance with the conditions and prices stated in the Bid Form/Proposal, the General Conditions and Special Conditions of the contract, the plans, which include all maps, plots, blueprints, and other drawings and printed or written explanatory matter thereof, the specifications and contract documents all of which are attached hereto and made a part hereof and collectively evidence and constitute the contract.

The CONTRACTOR hereby agrees to commence work under this contract on or before **21** days of a date to be specified in a written "Notice to Proceed" of the Owner, and to fully complete Hunting Lodge Road over Eagleville Brook Culvert Replacement prior to the November 30, 2023 completion date for that project. The CONTRACTOR further agrees to pay, as liquidated damages, the sum of \$500 for each consecutive calendar day thereafter as hereinafter provided

in the General Conditions. The TOWN agrees to pay the CONTRACTOR in current funds for the performance of the contract, subject to additions, and deductions as provided in the General Conditions of the contract, and to make payments on account thereof as provided in Section 22, "Payment to Contractor" of the General Conditions.

IN WITNESS WHEREOF, the parties to these presents have executed this contract in two (2) counterparts, each of which shall be deemed an original, in the year and day first mentioned above.

CONTRACTOR

TOWN

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
Director of Finance

(SEAL)

\_\_\_\_\_

Recommended for approval:

\_\_\_\_\_

\_\_\_\_\_  
Director of Public Works

\_\_\_\_\_  
Date



**EXHIBIT A: CONTRACTOR'S INDEMNIFICATION**

The Contractor shall at all times indemnify and save harmless the Town of Mansfield and the State of Connecticut and its officers, agents and employees on account of and from any and all claims, damages, losses, judgments, workers' compensation payments, litigation expenses, and counsel fees arising out of injuries to the person (including death) or damage to property alleged to have been sustained by (a) officers, agents and employees of the Town of Mansfield or (b) the Contractor, his subcontractors or materialmen or (c) any other person, which injuries and/or damages are alleged to have occurred on or near the work or to have been caused in whole or in part by the acts, omissions or neglect of the Contractor or his subcontractor or materialman by reason of his or their use of faulty, defective or unsuitable materials, tools or equipment or defective design in constructing or performing the work. The existence of insurance shall in no way limit the scope of this indemnification. The Contractor further undertakes to reimburse the Town of Mansfield or the State of Connecticut for damage to property of the Town of Mansfield or State of Connecticut caused by the Contractor, or his employees, agents, subcontractors or materialmen or by faulty, defective or unsuitable material or equipment used by him or them.

STATE OF CONNECTICUT:

COUNTY OF:

Signed:

\_\_\_\_\_  
Contractor

By \_\_\_\_\_

Address \_\_\_\_\_  
\_\_\_\_\_

Date \_\_\_\_\_ 2023

Subscribed and Sworn to before me

on this \_\_\_\_\_ day of \_\_\_\_\_ 2023

\_\_\_\_\_  
Notary Public

**SUPPLEMENT TO  
CONTRACT AGREEMENT  
TOWN OF MANSFIELD  
DEPARTMENT OF PUBLIC WORKS  
Hunting Lodge Road over Eagleville Brook Culvert Replacement**

1. In the event of inconsistencies among the Contract Documents, this Document and the basic Contract Agreement it supplements, shall govern. If there are inconsistencies within or between parts of the Contract Documents that are not resolved by application of the immediately foregoing sentence, or between the Contract Documents and applicable standards, codes and ordinances, the Contractor shall (1) provide the better quality or greater quantity of work or (2) comply with the more stringent requirement. The terms and conditions of this paragraph shall not, however, relieve the Contractor of any of its obligations set forth elsewhere in the Contract Documents.
2. In performing its obligations under this Contract, the Contractor shall comply with all applicable statutes, laws, ordinances, regulations, codes, rules or orders of, or issued by, any governmental body having jurisdiction over the Performance of the Work
3. Each and every provision of law and Clause required by law to be inserted in this Contract shall be deemed to be inserted herein and the Contract shall be read and enforced as though it were included herein, and if through mistake or otherwise, any such provision is not inserted, or is not correctly inserted, then upon the application of either party, the Contract shall forthwith be physically amended to make such insertion.
4. The rights stated in the Contract Documents are cumulative and not in limitation of any Rights of the Town granted in the Contract Documents, at law, or in equity.
5. In no event shall the Town or its agents have control over, charge of, or any responsibility for construction means, methods, techniques, sequences or procedures or for safety precautions and programs in connection with the Work, notwithstanding any of the rights and authority granted the Town in the Contract Documents.
6. If any governmental body having jurisdiction over the Work requires licenses or registrations for the performance of the Work, or any part thereof, the Contractor shall hold said valid licenses or registrations as may be required by law to prosecute the Work to completion. If any part of the Work for which such a license or registration is required is to be performed by Subcontractors of any tier, the Contractor shall take reasonable actions to ensure that any such Subcontractor holds such valid licenses or registrations as may be required by law to prosecute said Work to completion.
7. To ensure that any Subcontractor is bound by the terms set forth in this Agreement between the Town and Contractor, the Contractor agrees to include a provision in each

Subcontract that incorporates by reference the terms of this Agreement and the Contract Documents incorporated by reference herein that shall apply to all work performed on this project by any Subcontractor in the following or similar terms: "The contractor and subcontractor shall be mutually bound by the terms of this agreement, and, to the extent that provisions of the prime contract apply to the work of the subcontractor, the contractor shall assume toward the

subcontractor all obligations and responsibilities that the owner, under the prime contract, assumes toward the contractor, and the subcontractor shall assume toward the contractor all obligations and responsibilities which the contractor, under the prime contract, assumes toward the owner and the architect.

8. The Contractor agrees that any contract it makes with any Subcontractor to do any of the Work pursuant to this Agreement shall contain a provision that the [Sub]contractor shall act as a Subcontractor to the Contractor, and that the Subcontractor agrees that it shall have no rights of any kind against the Town.

9. The Town will not be liable for damages to the Contractor as a result of delays suffered in completing the project. Extensions of time are the sole remedy available to the Contractor for this contingency.

10. The acceptance of Final Payment by the Contractor shall constitute a waiver of all claims by the Contractor, except those previously made in writing and designated as unresolved by the Contractor. In return for receipt of any partial payment, the Contractor or any Subcontractor receiving such partial payment shall issue a release of all claims through the date covered by any such partial payment in exchange for receipt of such payment.

11. By executing this Agreement, the Contractor warrants that its authorized representative has examined and compared the various components of the design documents, and has otherwise satisfied himself or herself to their accuracy, and thereby releases and holds the Town harmless from any liability for damages caused by either party's negligence to the full extent permitted by law.

12. Even if there is an ongoing dispute between the parties to this Agreement, the parties agree that the Work required by this Agreement shall continue until the project is completed.

13. The Work in this Contract should not interfere with safe operation of adjacent buildings and site. If interference appears possible because of new connections to existing work or other reasons, the Work involved must be done at a time and in a manner directed by the Town as a part of the Contract.

14. The Parties to this Agreement will make a good faith effort to resolve, without resort to litigation any dispute between or among the Town, Contractor, Consultants or Subcontractors.

15. The Contractor agrees to participate in mediation when required to do so by the Town to resolve a dispute with each other.

16. If, after good faith effort, either party determines that either a mediator cannot be agreed upon, or mutually agree ground rules cannot be agreed upon, either party may give notice of its intent to litigate. No litigation may commence earlier than sixty (60) days after sending notice of intent to litigate, unless failure to commence litigation is reasonably likely to result in demonstrable harm.

17. If the dispute cannot be resolved by the principals during the process, then either party may bring the dispute to a court of competent jurisdiction, namely, the Superior Court for the Judicial District of Tolland at Rockville. The notice period for litigation shall be limited to sixty (60) days.

18. Should a subcontractor, at any time, refuse or neglect to supply a sufficiency of properly skilled workers or of material of the proper quality or quantity, or fail in any respect to prosecute the Work required of such subcontractor pursuant to the contract between the subcontractor and the Contractor with competence, promptness and diligence, or fail in the performance of any of its covenants with the Contractor, in addition to any rights of the Contractor to address any such situation, the Town may at its option terminate the Agreement between the Contractor and such subcontractor after serving a three days written notice to the Contractor and such subcontractor. In the case of such discontinuance by the Town, the Town shall ensure that the subcontractor is paid the fair value of such subcontractor's work performed and materials supplied to the project to the date of termination of the contract of the subcontractor by the Town.

So agreed:

CONTRACTOR

TOWN

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
Director of Finance

\_\_\_\_\_  
Director of Public Works

\_\_\_\_\_  
Date

**PERFORMANCE BOND**

KNOW ALL MEN BY THESE PRESENTS:

\_\_\_\_\_

(Name of Contractor)

\_\_\_\_\_

(Address of Contractor)

a \_\_\_\_\_, hereinafter called Principal,  
and

(Corporation, Partnership, or Individual)

\_\_\_\_\_

(Name of Surety)

\_\_\_\_\_

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto

\_\_\_\_\_

(Name of Owner)

\_\_\_\_\_

(Address of Owner)

hereinafter called Owner, in the penal sum of \_\_\_\_\_ Dollars, (\$\_\_\_\_\_) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the Owner, dated the \_\_\_\_\_ day of \_\_\_\_\_, 2023, a copy of which is hereto attached and made a part hereof for the Hunting Lodge Road over Eagleville Brook Culvert Replacement.

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

PROVIDED, FURTHER, that said Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the work to be performed thereunder or the specifications accompanying the same shall in any wise affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work or to the specifications.

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

IN WITNESS THEREOF, this instrument is executed in two (2) counterparts, each one of which shall be deemed an original, this the \_\_\_\_\_ day of \_\_\_\_\_, 2023.

Note: Date of Bond must not be prior to date of Contract. If Contractor is Partnership, all partners should execute Bond.

ATTEST:

\_\_\_\_\_

(Principal)

\_\_\_\_\_  
(Principal) Secretary

By \_\_\_\_\_

(SEAL)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(Witness as to Principal)

\_\_\_\_\_  
(Surety)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(Address)

ATTEST:

\_\_\_\_\_  
(Surety) Secretary

(SEAL)

\_\_\_\_\_  
(Witness as to Surety)

## LABOR AND MATERIAL PAYMENT BOND

NOTE: This bond is issued simultaneously with another bond in favor of the owner conditioned for the full and faithful performance of the Contract.

KNOW ALL MEN BY THESE PRESENTS:

THAT \_\_\_\_\_ as Principal  
(hereinafter called Principal) and \_\_\_\_\_ as Surety  
(hereinafter called Surety) are held and firmly bound unto  
\_\_\_\_\_ (hereinafter called Owner) for the use and  
benefit of claimants as herein below defined; In the amount of  
\_\_\_\_\_ dollars (\$\_\_\_\_\_), for the payment  
whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors  
and assigns jointly and severally, firmly by these presents.

WHEREAS, Principal has by written agreement dated \_\_\_\_\_, entered into a Contract with Owner for "Hunting Lodge Road over Eagleville Brook Culvert Replacement" which Contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

NOW, THEREFORE, the condition of this obligation is such that, if said Principal shall promptly pay for all materials furnished and labor supplied or performed in the prosecution of the work included in and under the aforesaid Contract, whether or not the material or labor enters into and becomes a component part of the real asset, then this obligation shall be null and void, otherwise it shall remain and be in full force and effect.

PROVIDED, that any alterations which may be made in the terms of the Contract or in the work to be done under it, or the giving by the Obligee of any extension of time for the performance of the Contract, or any other forbearance on the part of either the Obligee or the Principal to the other shall not in any way release the Principal and Surety or either or any of them, their heirs, executors, administrators, successors or assigns from their liability, notice to the Surety of any such alterations, extension or forbearance being hereby waived.

Any party, whether a subcontractor or otherwise, who furnished materials or supplies or performs labor or service in the prosecution of the work under said Contract, and who is not paid therefore, may bring a suit on this bond in the name of the person suing, prosecute the same to a final judgment, and have execution thereon for such sum as may be justly due.

Unless otherwise required by law, any suit under this Bond must be Instituted before the expiration of (1) year from the date on which the guaranty period under the Contract expires.

No right of action shall accrue on this Bond to or for the use of any person or corporation other than the Owner named herein or the heirs, executors, administrators and successors of Owner.

IN WITNESS WHEREOF, the above-bounded parties have executed this instrument under their several seal this \_\_\_\_\_ day of \_\_\_\_\_, 2023, the name and corporate seal of each corporate party being hereto affixed and these presents signed by its undersigned representative, pursuant to authority of its governing body.

In presence of:

\_\_\_\_\_  
L.S.

\_\_\_\_\_  
(Individual Principal)

\_\_\_\_\_  
(Business Address)

\_\_\_\_\_  
L.S.

\_\_\_\_\_  
(Individual Principal)

\_\_\_\_\_  
(Business Address)

Attest:

\_\_\_\_\_

\_\_\_\_\_  
(Corporate Principal)

Affix  
Corporate Seal

\_\_\_\_\_  
(Business Address)

BY:

\_\_\_\_\_

Attest:

\_\_\_\_\_

\_\_\_\_\_  
(Corporate Surety)

\_\_\_\_\_  
(Business Address)

BY: \_\_\_\_\_

Affix  
Corporate



Seal Countersigned

\_\_\_\_\_

\*Attorney-in-fact, State of \_\_\_\_\_

\*Power-of-Attorney for person signing Surety Company must be attached to Bond

**NOTICE OF AWARD**

TO: \_\_\_\_\_  
(Contractor)

PROJECT: Hunting Lodge Road over Eagleville Brook Culvert Replacement

In response to your Bid submitted on \_\_\_\_\_, 2023, for the above described work, you are hereby notified that your bid has been accepted for the unit prices quoted.

You are required by the Information for Bidders to execute the Agreement and furnish the required Contractors Performance Bond and Certificate of Insurance within five (5) calendar days from the date of this Notice to you.

If you fail to execute said Agreement and to furnish said Bonds within five (5) days from the date of this Notice, said Owner will be entitled to consider all your rights arising out of the Owner's acceptance of our Bid as abandoned as a forfeiture of your Bid Bond. The Owner will be entitled to such other rights as may be granted by law.

You are required to return an acknowledge copy of this Notice of Award to the Owner.

Dated this \_\_\_\_ day of \_\_\_\_\_, 2023.

TOWN OF MANSFIELD  
(owner)

By: \_\_\_\_\_

**ACCEPTANCE OF NOTICE**

Receipt of the above Notice of Award is hereby acknowledged:

This \_\_\_\_ day of \_\_\_\_\_, 2023.

By: \_\_\_\_\_  
(please print)

By: \_\_\_\_\_  
(please sign)

Title: \_\_\_\_\_

**NOTICE TO PROCEED**

TO: \_\_\_\_\_  
(Contractor)

PROJECT NAME: Hunting Lodge Road over Eagleville Brook Culvert Replacement  
Town of Mansfield, Connecticut

You are hereby notified to commence work on the referenced project, in accordance with the executed Contract dated \_\_\_\_\_. Work must begin on or before \_\_\_\_\_. You are to fully complete work on Hunting Lodge Road over Eagleville Brook Culvert Replacement prior to the November 30, 2023 completion date for that project.

You are required to return the acknowledgment copy of this Notice to Proceed, properly signed and otherwise executed, to the Owner.

Dated this \_\_\_\_ day of \_\_\_\_\_, 2023.

OWNER: TOWN OF MANSFIELD, CONNECTICUT

By: \_\_\_\_\_

Title: \_\_\_\_\_

**CONTRACTOR'S ACKNOWLEDGEMENT OF RECEIPT OF NOTICE TO PROCEED**

Receipt of the above Notice to Proceed is hereby acknowledged by:

\_\_\_\_\_ on this the \_\_\_\_ day of \_\_\_\_\_, 2023.

By: \_\_\_\_\_  
(Signature)

Title: \_\_\_\_\_

## **GENERAL CONDITIONS**

### **1. Contract and Contract Documents**

The plans, specification and addenda shall form part of the contract and provisions thereof shall be as binding upon the parties hereto as if they were herein fully set forth. The table of contents, titles, headings, running headlines and marginal notes contained herein and in said documents are solely to facilitate reference to various provisions of the contract documents and in no way affect, limit or cast light on the interpretation of the provisions to which they refer.

### **2. Definitions**

The following terms as used in these General Conditions are respectively defined as follows.

- A. "Contractor" - A person, firm or corporation with whom this contract is made by the Town.
- B. "Subcontractor" - A person, firm or corporation supplying labor, equipment or materials for work at the site of the project for, and under separate contract or agreement with, the Contractor.
- C. "Work on (at) the project" - Work to be performed at the locations of the project including the transportation of materials, equipment and supplies to or from the location(s) of the project by the employees of the contractor and any subcontractor.
- D. "Owner or Town" - The Town of Mansfield, Connecticut, acting by and through its Town Manager, Director of Public Works, Director of Finance or their authorized representative.
- D. "Engineer" - The Town of Mansfield Director of Public Works, or his authorized representative.
- E. "Architect" – The consultant hired by the Town of Mansfield to design the structure or facilities composing all or part of the project.

### **3. Materials, Services and Facilities**

It is understood that, except as otherwise specifically stated in the contract documents, the Contractor shall provide and pay for all materials, labor, tools, equipment, water, light, power, transportation, superintendence, temporary construction of every nature, and all other services and facilities of every nature whatsoever necessary to execute, complete, and deliver the work within the specified time. Any work necessary to be performed after regular hours, on Sundays or Legal Holidays, shall be performed without additional expense to the Owner.

#### **4. Contractor's Title to Material**

No materials or supplies for the work shall be purchased by the Contractor or by any Subcontractor subject to any chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller. The Contractor warrants that he has good title to all materials and supplies used by him in the work, free from all liens, claims or encumbrances.

#### **5. Inspection and Testing of Materials**

All materials and equipment used in the construction of the project shall be subject to adequate inspection and testing in accordance with accepted standards. The laboratory or inspection agency shall be as stipulated by the Owner. The Owner will pay for all laboratory inspection services directly, and not as part of the contract.

The Contractor shall supply in a timely fashion samples of any materials required to be tested along with certified test reports and certificates of compliance when required. No material shall be incorporated into the work without testing. Any material incorporated into the work and found to be deficient will be removed or replaced at the Contractor's sole expense.

Materials of construction, particularly those upon which the strength and durability of the finished product may depend, shall be subject to inspection and testing to establish conformance with specifications and suitability for users intended.

#### **6. "Or Equal" Clause**

Whenever a material, article or piece of equipment is identified in the project documents by reference to manufacturers' or vendors' names, trade-names, catalogue numbers, etc., it is intended merely to establish a standard; and, any material, article or equipment of other manufacturers and vendors which will perform adequately the duties imposed by the general design will be considered equally acceptable provided the material, article, or equipment so proposed is, in the opinion of the Town, of equal substance and function. It shall not be purchased or installed by the Contractor without the Town's written approval.

#### **7. Patents**

The Contractor shall hold and save the owner and its officers, agents, servants, and employees harmless from liability of any nature or kind, including cost and expenses for, or on account of, any patented or unpatented invention, process, article, or appliance manufactured or used in the performance of the contract, including its use by the owner, unless otherwise specifically stipulated in the Contract Documents. If the Contractor uses any design, device or materials covered by letters, patent or copyright, he shall provide for such use by suitable agreement with the Owner of such patented or copyrighted design, device or material. It is mutually agreed and understood that, without exception, the contract prices shall include all royalties or costs arising from the use of such design, device or materials, in any way involved in the work. The Contractor and/or his Sureties shall indemnify and save harmless the Owner of the project from any and all claims for infringement by reason of the use of such patented or copyrighted design, device or

materials or any trademark or copyright in connection with work agreed to be performed under this contract, and shall indemnify the Owner for any cost, expense or damage which it may be obliged to pay by reason of such infringement at any time during the prosecution of the work or after completion of the work.

## **8. Surveys, Permits and Regulations**

Unless otherwise expressly provided for in this contract, the Owner will furnish to the Contractor control survey points only for the execution of the work, and the Contractor shall provide all surveying necessary for the layout and execution of the work. The Contractor shall procure and pay for all permits, licenses and approvals necessary for the execution of his contract. The Contractor shall comply with all laws, ordinances, rules, orders, and regulations relating to the performance of the work.

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

## **9. Contractor's Obligations**

The Contractor shall and will, in good workmanlike manner, do and perform all work and furnish all supplies and materials, machinery, equipment, facilities and means, except as herein otherwise expressly specified, necessary or proper to perform and complete all the work required by this contract within the time herein specified, in accordance with the provisions of this contract and said specifications and in accordance with the plans and drawings covered by this contract and any and all supplemental plans and drawings, and in accordance with the directions of the Town as given from time to time during the progress of the work. The Contractor shall observe, comply with, and be subject to all terms, conditions, requirements, and limitations of the contract and specifications, and shall do, carry on, and complete all work to the satisfaction of the Town.

## **10. Weather Conditions**

In the event of temporary suspension of work, or during inclement weather, or whenever the Town shall direct, the Contractor will, and will cause his Subcontractors to protect carefully insofar as is reasonably possible given the nature of the work, his and their work and materials against damage or injury from the weather. If, in the opinion of the Town, any work or materials shall have been damaged or injured by reason of failure on the part of the Contractor or any of his subcontractors to so protect his work, such material shall be removed and replaced at the expense of the Contractor.

## **11. Protection of Work and Property--Emergency**

The Contractor shall at all times safely guard the Owner's property from injury or loss in connection with this contract. He shall at all times safely guard and protect his own work, and that of adjacent property, from damage. The Contractor shall replace or make good any such damage, loss or injury unless such be caused directly by errors contained in the contract or by the Owner, or his duly authorized representative.

In case of an emergency which threatens loss or injury of property and/or safety of life, the Contractor will be allowed to act, without previous instructions from the Town, in a diligent manner. He shall notify the Town immediately thereafter. Any claim for compensation by the Contractor due to such extra work shall be promptly submitted to the Town for approval.

Where the Contractor has not taken action but has notified the Town of an emergency threatening injury to persons or damage to the work of any adjoining property, he shall act as instructed or authorized by the Town.

The manner of reimbursement claimed by the Contractor on account of any emergency action shall be determined in the manner provided in Paragraph 14 of the General Conditions.

## **12. Reports, Records and Data**

The Contractor shall submit to the Owner, in a format satisfactory to the Town, such schedule of quantities and costs, progress schedules, payrolls, reports, estimates, records and other data as the Owner may request concerning work performed or to be performed under this contract. Certified payroll records indicating the payment of all labor on this contract shall be submitted to the Owner along with all requests for payment.

## **13. Superintendence by Contractor**

At the site of the work, the Contractor shall designate one person who shall have full authority to act for the Contractor. It is understood that such representative shall be acceptable to the Town.

## **14. Changes in Work**

No changes in the work covered by the approved contract documents shall be made without having prior written approval of the Owner. Charges or credits for the work covered by the approved change shall be determined by one or more, or a combination of the following methods:

- A. An agreed lump sum
- B. The actual cost of:
  - 1. Labor, including foremen;
  - 2. Materials entering permanently into the work;

3. The ownership or rental cost of construction plant and equipment during the time of use on the extra work;
4. Power and consumable supplies for the operation of power equipment;
5. Insurance;
6. Social Security and old age and unemployment contributions.

To the cost under 14 (b), there shall be added a fee to be agreed upon but not to exceed fifteen percent (15%) of the estimated cost of the work. The fee shall be compensation to cover the cost of supervision, overhead, bond, profit and any other general expenses.

## **15. Extras**

Without invalidating the contract, the Owner may order extra work of the kind bid upon or make changes by altering, adding to or deducting from the work, the contract sum being adjusted accordingly. All the work of the kind bid upon shall be paid for at the price stipulated in the proposal, and no claims for any extra work or materials shall be allowed unless the work is ordered in writing by the Owner and the price is stated in the order.

## **16. Time for Completion and Liquidated Damages**

It is hereby understood and mutually agreed by and between the Contractor and Owner, that the date of beginning and the time for completion as specified in the contract of work to be done hereunder are ESSENTIAL CONDITIONS of this contract; and it is further mutually understood and agreed that the work embraced in this contract shall be commenced on or before the date specified.

The Contractor agrees that said work shall be prosecuted regularly, diligently, and uninterruptedly at such rate of progress as will insure full completion thereof within the time specified. It is expressly understood and agreed, by and between the Contractor and the Owner, that time for the completion of the work described herein, is a reasonable time for the completion of the same, taking into consideration the average climatic range and conditions prevailing in this locality.

If said Contractor shall neglect, fail or refuse to complete the work within the time herein specified, or any proper extension thereof granted by the Owner, then the Contractor does hereby agree, as a part consideration for the awarding of this contract, to pay the Owner the amount specified in the contract, not as a penalty but as liquidated damages for such breach of contract as hereinafter set forth, for each and every calendar day that the Contractor shall be in default after the time stipulated in the contract for completing the work.

It is further agreed that time is of the essence of each and every portion of this contract and of the specification wherein a definite and certain length of time is fixed for the performance of any act whatsoever; and where under the contract an additional time is allowed for the completion of any work, the new time limit fixed by such extension shall be of the essence of this contract. Provided, that the Contractor shall not be charged with liquidated damages or any excess cost when the Owner determines that the Contractor is without fault and the



Contractor's reasons for the time extension are acceptable to the Owner; Provided further, that the Contractor shall not be charged with liquidated damages or any excess cost when the delay in completion of the work is due:

- A. To any preference, priority or allocation order duly issued by the government of the United States or the State of Connecticut.
- B. To unforeseeable cause beyond the control and without the fault or negligence of the Contractor, including but not restricted to, acts of God, or of the public enemy, acts of the Owner, acts of another contractor in the performance of a contract with the Owner, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and severe weather;
- C. To any delays of subcontractors or suppliers occasioned by any of the causes specified in subsections a and b of this article: Provided further, that the Contractor shall, within ten (10) days from the beginning of such delay, unless the Owner shall grant a further period of time prior to the date of final settlement of the contract, notify the Owner, in writing, of the cause of delay, who shall ascertain the facts and extent of the delay and notify the Contractor within a reasonable time of its decision in the matter.

#### **17. Correction of Work**

All work, all materials, whether incorporated in the work or not, all processes of manufacture, and all methods of construction shall be at all times and places subject to the inspection of the Owner who shall be the final judge of the quality and suitability of the work, materials, processes of manufacture and methods of construction for the purposes for which they are used. Should they fail to meet his approval they shall be forthwith reconstructed, made good, replaced and/or corrected, as the case may be, by the Contractor at his own expense. Rejected material shall immediately be removed from the site. If, in the opinion of the Owner, it is undesirable to replace any defective or damaged materials or to reconstruct or correct any portion of the work injured or not performed in accordance with the contract documents, the compensation to be paid to the Contractor hereunder shall be reduced by such amount as in the judgment of the Owner shall be equitable.

#### **18. Conditions Found Different**

Should the Contractor encounter conditions at the site materially differing from those indicated in the contract documents, he shall immediately give notice to the Owner of such conditions before they are disturbed. The Owner will thereupon promptly investigate the conditions, and if he finds that they materially differ from those indicated in the Specifications, he will at once make such changes in the contract documents as he may find necessary, and any increase or decrease of cost resulting from such changes is to be adjusted in the manner provided in paragraph 14 of the General Condition.

#### **19. Claims for Extra Costs**

No claim for extra work or cost shall be allowed unless the same was done in pursuance of a written order of the Owner, as aforesaid, and the claim presented with the first estimate

after the changed or extra work is done. When work is performed under the terms of subparagraph 14(b) of the General Conditions, the Contractor shall furnish satisfactory bills, payrolls, and vouchers covering all items of cost and, when requested by the Owner, give the Owner access to accounts relating thereto.

## **20. Right of the Owner to Terminate Contract**

If the Contractor is adjudged bankrupt, or if he makes a general assignment for the benefit of his creditors, or if a receiver is appointed on account of his insolvency, or if he persistently or repeatedly refuses or fails, except in cases for which extension of time is provided, to supply enough properly skilled workmen or proper materials, or if he fails to make the prompt payment to Subcontractors or for materials or labor, or persistently disregards laws, ordinances, rules, regulations or orders of any public authority having jurisdiction, or otherwise is guilty of a substantial violation of a provision of the Contract Documents, then the Owner, providing sufficient cause exists to justify such action, may, without prejudice to any right or remedy and after giving the Contractor and his surety, if any, seven days written notice, terminate the employment of the Contractor and take possession of the site and of all materials, equipment, tools, construction equipment and machinery thereon owned by the Contractor and may finish the work by whatever method he may deem expedient. In such case, the Contractor shall not be entitled to receive any further payment until the work is finished.

If the unpaid balance of the Contract Sum exceeds the costs of finishing the work, such excess shall be paid to the Contractor. If such costs exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or to the Owner, as the case may be, shall be in the manner provided in Section 22, and this obligation for payment shall survive the termination of the Contract.

If the work is stopped for a period of thirty days under an order of any court or other public authority having jurisdiction, or as a result of an act of government, such as a declaration of a national emergency making materials unavailable, through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing any of the work under a contract with the Contractor, or if the work should be stopped for a period of thirty days by the Contractor because the Owner has not made payment thereon as provided in Section 22, then the Contractor may, upon seven additional days written notice to the Owner, terminate the Contract and recover from the Owner payment for all work executed and for any proven loss sustained upon any materials, equipment, tools, construction equipment and machinery, including reasonable profit and damages.

## **21. Construction Schedule**

Immediately after execution and delivery of the contract, the Contractor shall deliver to the Town an estimated construction progress schedule and bar chart both electronically and in a form satisfactory to the Town showing the proposed dates of commencement and completion of each of the various subdivisions of work required under the contract documents and the monetary values associated with each segment or subdivision of work. Said proposed schedule shall not be official until accepted and approved by the Owner. Contractor shall update this construction schedule monthly or as required by the Owner such that his work can be coordinated with the other contractual work proceeding in this

area. Such schedule must provide for the coordination of work with other work being done in the Storrs Center area.

**22. Payment To Contractor (Also see Sections 37 & 38)**

The Town shall make monthly payments to the Contractor on the basis of a duly certified and approved estimate of the work performed under the contract. Final payment shall be made after the final completion and acceptance of all work covered by the contract. To insure proper performance of the contract, the Owner shall retain five percent (5%) of the amount of each payment until the final completion and acceptance of all work covered by the contract.

The Contractor agrees that he will indemnify and save the Owner harmless from all claims growing out of the lawful demands of subcontractors, laborers, workmen, mechanics, materialmen, and furnishers of machinery and parts thereof, equipment, power tools, and all supplies, including commissary, incurred in the furtherance of the performance of this contract. The Contractor shall, at the Owner's request, furnish satisfactory evidence that all obligations of the nature hereinabove designated have to be paid, discharged, or waived. If the Contractor fails to do so, then the Owner may, after having served written notice on said Contractor, either pay unpaid bills, of which the Owner has written notice, direct, or withhold from the Contractor's compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged whereupon full payment to the Contractor shall be made in accordance with the terms of this contract, but in no event shall the provisions of this sentence be construed to impose any obligations upon the Owner to either the Contractor or his Surety.

In paying any unpaid bills of the Contractor, the Owner shall be deemed the agent of the Contractor, and any payment so made by the Owner, shall be considered as payment made under the contract by the Owner to the Contractor, and the Owner shall not be liable to the Contractor for any such payment made in good faith.

**23. Acceptance of Payment as Release**

The acceptance by the Contractor of payment shall be and shall operate as a release of the Owner of all claims and all liability to the Contractor for all things done or furnished in connection with this work. No payment, however, final or otherwise, shall operate to release the Contractor or his Sureties from any obligation under this contract or the performance bond.

**24. Contractor's Insurance**

The Contractor shall not commence work under this contract until he has obtained all the insurance required under Section 14 of the Information for Bidders attached hereto and such insurance has been approved by the Town. The Contractor shall furnish the Town with certificates showing the type, amount, class of operations covered, effective dates, and dates of expiration of policies.

Such certificates shall also contain substantially the following statements: "The insurance covered by this certificate will not be canceled or materially altered, except after thirty (30) days written notice has been received by the Town." Each policy of insurance shall include a waiver of subrogation in favor of the Town of Mansfield. The Town of Mansfield shall be listed as "additional insured" by name on all such insurance certifications.

## **25. Contract Security**

The Contractor shall furnish a performance bond and a Labor and Material Payment Bond in the amount at least equal to one hundred percent (100%) of the total contract price as security for the faithful performance of this contract. Said Sureties shall be written by a company acceptable to the Town and licensed to do business in the State of Connecticut and listed on the Federal Treasury Index list and shall be filed with the Director of Finance of the Town.

## **26. Assignments**

The Contractor shall not assign the whole or any part of this contract or any monies due or to become due hereunder without written consent of the Owner. In case the Contractor assigns all or any part of any monies due or to become due under this contract, the instrument of assignment shall contain a clause substantially to the effect that it is agreed that the right of the assignee in and to any monies due or to become due to the Contractor shall be subject to prior claims of all persons, firms and corporations for services rendered or materials supplied for the performance of the work called for in this contract.

## **25. Subcontracting**

The Contractor may utilize the services of specialty subcontractors on those parts of the work which, under normal contracting practices, are performed by specialty subcontractors.

The Contractor shall not award any work to any subcontractor without prior written approval of the Owner, which approval will not be given until the Contractor submits to the Owner a written statement concerning the proposed award to the subcontractor, which statement will contain such information as the Owner may require.

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

The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work to bind subcontractors to the Contractor by terms of the General Conditions and other contract documents insofar as applicable to the work of the subcontractors and to give the Contractor the same power as regards terminating any subcontract that the Owner may exercise over the Contractor under any provision of the contract documents.

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

## **27. Department of Public Works Authority**

The Town Director of Public Works or his authorized representative shall give all orders and directions contemplated under this contract and specifications relative to the execution of the work. The Director of Public Works shall determine the amount, quality, acceptability, and fitness of the work which is to be paid for under this contract and shall decide all questions which may arise in relation to said work and the construction thereof. The Director of Public Works estimates and decisions shall be final and conclusive, except as herein otherwise expressly provided. In case any question shall arise between the parties hereto relative to said contract or be specifications, the determination or decision of the Director of Public Works shall be a condition precedent to the right of the Contractor to receive any money or payment for work under this contract affected in any manner or to any extent by such question.

The Director of Public Works, in consultation with the project architect where applicable, shall decide the meaning and intent of any portion of the specifications and of any plan or drawings where the same may be found obscure or be in dispute. Any differences or conflicts in regard to their work which may arise between the Contractor under this contract and other contractors performing work for the Owner shall be adjusted and determined by the Director of Public Works.

## **28. Conflicting Conditions**

See Paragraph 27.

## **29. Notice and Service Thereof**

Any notice to any Contractor from the Owner relative to any part of this contract shall be in writing and considered delivered and the service thereof completed, when said notice is posted, by certified or registered mail, to said Contractor at his last given address, or delivered in person to said Contractor or his authorized representative on the work.

## **30. Required Provisions Deemed Inserted**

Each and every provision of law and clause required by law to be inserted in this contract shall be deemed to be inserted herein, and the contract shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party the contract shall forthwith be physically amended to make such insertion or correction.

## **31. Safety and Health Regulations for Construction**

In order to protect the lives and health of his employees under the contract, the Contractor shall comply with all pertinent provisions of the Contract Work Hours and Safety Standards Act, as amended, commonly known as the Construction Safety Act as pertains to health and safety standards; and shall maintain an accurate record of all cases of death, occupational disease, and injury requiring medical attention or causing loss of time from work, arising out of and in the course of employment on work under the contract.

### **32. Suspension of Work**

Should the Owner be prevented or enjoined from proceeding with work or from authorizing its prosecution either before or after its prosecution, by reason of any litigation, the Contractor shall not be entitled to make or assert claim for damage by reason of said delay, but time for completion of the work will be extended to such reasonable time as the Owner may determine will compensate for time lost by such delay with such determination to be set forth in writing.

### **33. Equal Opportunity Provisions**

The Contractor who is selected to perform this Project must comply with CONN. GEN.STAT. §§4a-60, 4a-60a, 4a-60g, and 46a-68b through 46a-68f, inclusive, as amended by June 2015 Special Session Public Act 15-5.

### **34. Anti-Kick Back Provisions**

In accordance with the provisions of the Copeland Anti-Kick Back Act (18 U.S.C. 874) as supplemented in Department of Labor Relations (29 CFR, Part 3), the Contractor is prohibited from inducing, by any means, any person employed in the construction, completion or repair of this project, to give up any part of the compensation to which he is otherwise entitled.

### **35. Application for Payment**

Contractor shall utilize AIA form G702 including continuation sheets when required. For each item, provide a column for listing: Item Number; Description of work; Scheduled Value; Previous Applications; Work in Place and Stored Materials under this Application; Authorized Change Orders; Total Completed and Stored to Date of Application; Percentage of Completion; Balance to Finish; and Retainage. Application shall be typewritten. Certification shall be by signature of authorized officer. Contractor shall list each authorized Change Order as an extension on continuation sheet, listing Change Order number and dollar amount as for an original item of work. Contractor shall prepare Application for Final Payment as specified in paragraph 42 Closeout Provisions, submit three copies of each Application for Payment and an updated construction schedule with each Application for Payment monthly. When Owner requires substantiating information the Contractor shall submit data justifying dollar amounts in question. The Contractor shall provide one copy of data with cover letter for each copy of submittal. Show Application number and date, and line item by number and description.

### **36. Measurement and Payment**

The Schedule of Prices submitted by the Contractor as part of the Contract shall be used to determine each pay estimate and shall constitute full compensation for work completed in accordance with the drawings and specifications. No separate payment will be made for cleaning up. Such clean up shall be considered incidental to the project. Relocation of utilities shall be considered incidental to the project. Where rock is encountered, it shall be consider incidental to completion of the project.

### **37. Submittals**

Each submittal shall be made to the Owner and shall include three copies for review and distribution. Contractor shall sequentially number the transmittal forms. Resubmittals are to have an original number with an alphabetic suffix. Contractor shall identify Project, Contractor, Subcontractor or supplier, pertinent Drawing sheet and detail number(s), and specification Section number as appropriate. Contractor shall apply Contractor's stamp, signed or initialed certifying that review, verification of Products required, field dimensions, adjacent construction Work and coordination of information is in accordance with the requirements of the Work and Contract Documents. Submittals shall be scheduled to expedite the Project. Contractor shall identify variations from Contract Documents and Product or system limitations which may be detrimental to successful performance of the completed work. Contractor shall revise and resubmit submittals as required, identify all changes made since previous submittal. Contractor shall distribute copies of reviewed submittals to concerned parties. Contractor shall instruct parties to promptly report any inability to comply with provisions.

### **38. Shop Drawings**

Contractor shall submit the number of reproductions which Contractor requires, plus three copies which will be retained by Owner. After review, the Contractor will distribute in accordance with the above article on Procedures and for Record Documents described in paragraph 41 - Contract Closeout Procedures.

### **39. Samples**

The Contractor shall submit samples, when specified in individual specification sections, to illustrate functional and aesthetic characteristics of the Product, with integral parts and attachment devices. The Contractor shall coordinate sample submittals for interfacing work.

### **40. Warranty**

The Contractor warrants and guarantees to the Town and the Engineer that all materials and equipment will be new unless otherwise specified, and that all Work will be of good quality and free from faults or defects and in accordance with the requirements of the Contract Documents and of any inspections, tests or approvals referred to in herein. All unsatisfactory Work, all faulty or defective Work and all Work not conforming to the requirements of the Contract Documents or of such inspections, tests or approvals shall be considered defective. Prompt notice of all defects shall be given to the Contractor. All defective Work, whether or not in-place, may be rejected.

If, prior to completion of the punch list resulting from the final inspection at expiration of the warranty period, any Work is found to be defective, the Contractor will, promptly without cost to the Town and in accordance with the Town's written instructions, either correct such defective Work, or, if it has been rejected by the Town, remove it from the site and replace it with non-defective Work. If the Contractor does not promptly comply with the terms of such instructions, the Town may have the defective Work corrected or the rejected Work removed and replaced, and all direct and indirect costs of such removal and replacement, including compensation for additional professional services, will be paid by the Contractor.

Unless otherwise stated in a Notice to Contractor, five percent (5%) of the total Contract Price shall be retained by the Town for a period of one (1) year after substantial completion of the Contract to allow appearance of any defect in materials and workmanship.

Within this one (1) year period, the Contractor shall remedy any defective Work appearing and pay for any damages to other Work caused by such defective Work, or occasioned in correcting same. If the Town determines the defective Work creates a situation requiring immediate attention, the Town may have the defective Work removed and replaced. All direct and indirect costs, including compensation for professional services, will be paid by the Contractor. If an excessive amount of defective Work appears during the one (1) year period after the substantial completion, the Town, upon written notice to the Contractor, may extend the retainage period for an additional year.

#### **41. Contract Closeout Procedures**

The Contractor shall submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Owner's inspection. The Contractor shall provide submittals to Owner that are required by governing or other authorities, and submit final Application for Payment identifying total adjusted Contract sum, previous payments and sum remaining due.

#### **42. Project Record Documents**

The Contractor shall maintain on site, one set of the following record documents; record actual revisions to the Work:

- A. Contract Drawings
- B. Specifications
- C. Addenda
- D. Change Orders and other Modifications to the Contract
- E. Approved shop drawings, product data and samples

#### **43. Cleaning Up**

During its progress, the work and the adjacent areas affected thereby shall be kept clean and all rubbish, surplus materials, and unneeded construction equipment shall be removed and all damage repaired so that the public and property owners will be inconvenienced as little as possible. Where material or debris has washed or flowed into or been placed in existing watercourses, ditches, gutters, drains, pipes, structures, work done under this Contract or elsewhere during the course of the Contractor's operations, such material or debris shall be entirely removed and satisfactorily disposed of during the progress of the work, and the ditches, drains, pipes, structures, and work, etc., shall upon completion of the work, be left in a clean and neat condition. On or before the completion of the work, the Contractor shall, unless otherwise especially directed or permitted in writing, tear down and remove all temporary buildings and structures built by him; shall remove all temporary works, tools and machinery or other construction equipment furnished by him; shall remove, acceptably disinfect and cover all organic matter and material containing organic matter in, under and around privies, houses and other buildings used by him; shall remove all rubbish



from any grounds which he has occupied; and shall leave the roads and all parts of the premises and adjacent property affected by his operations in a neat and satisfactory condition. The Contractor shall restore or replace, when and as directed, any public or private property damaged by his work, equipment or employees, to a condition at least equal to that existing immediately prior to the beginning of operations. To this end, the Contractor shall do as required, all necessary roadway or driveway, walk and landscaping work. Suitable materials, equipment and methods shall be used for such restoration. The Contractor shall thoroughly clean all materials and equipment installed by him and his subcontractors, and on completion of the work shall deliver it undamaged and in fresh and new appearing condition

**44. Anticipated Source of Material (see form CON-083)**

The selected bidder shall complete CON-083 (CT Anticipated Source of Material form) prior to award, within one week (seven calendar days) after notification to do so. Form shall be submitted to the Town of Mansfield Director of Public Works. Form is included in these specifications.

**45. Public Assignment**

The Contractor or Subcontractor offers and agrees to assign to the public purchasing body all right, title and interest in and to all causes of action it may have under Section 4 of the Clayton Act, 15 U.S.C. 15 or under Chapter 624 of the General Statutes of Connecticut, arising out of the purchase of services, property or intangibles of any kind pursuant to a public purchase contract or subcontract. This assignment shall be made and become effective at the time the public purchasing body awards or accepts such contract without further acknowledgement by the parties.

**46. Contractor Prequalification**

Not applicable to this contract.

## **SPECIAL CONDITIONS**

### **1. General**

The Contractor shall furnish all tools, labor, equipment, materials and incidentals to complete all items of work for the construction of the project as set forth on the plans and in these contract documents in a manner described in these contract documents, general conditions, special conditions, Special Provisions and Technical Provisions.

The Owner (Town) reserves the right to eliminate from the contract any of the work shown on the Bid Form in the event it deems it to be in the best interest of the Owner.

### **2. Coordination with Adjacent Projects**

It shall be the Contractor's responsibility to coordinate with the surrounding projects, Owners, and Contractors.

### **3. Existing Conditions**

The Contractor shall field check and verify all dimensions and existing conditions prior to construction and notify the Town of any discrepancy. Contractor shall take all field measurements necessary to assure proper fit of the finished work and shall assume full responsibility for their accuracy. Contractor shall be responsible for locating all existing utilities prior to commencing work.

### **4. Traffic Control and Warning Signs to be provided by Contractor as directed by the Engineer**

The Contractor shall be responsible for any and all traffic control required while the work is in progress.

### **5. Sampling, Inspection and Testing of Materials**

Contractor shall furnish Certified Test Reports and/or material samples for all materials utilized in the work or used temporarily on the job, demonstrating that the materials being furnished by him is in compliance with the material specification in the Technical Provisions attached hereto.

The Town reserves the right to retest any material which previously had been tested and accepted, and to reject materials in transit or at the point of delivery which do not meet requirements of the specifications, which are contaminated, or which are damaged.

### **6. Safety**

The Contractor shall comply with all requirements of the Occupational Safety and Health Act (OSHA). See also the safety provisions of the General Conditions.

## 7. Enumeration of Plans

The following plan sheets are hereby enumerated as part of these contract documents:

<u>Sheet Number</u>	<u>Title</u>
G-01	TITLE SHEET
INX-01	HIGHWAY INDEX OF DRAWINGS
SUR-01	SURVEY PLAN-1
SUR-02	SURVEY PLAN-2
TYP-01	TYPICAL SECTIONS
RDW-01	ROADWAY PLAN-1
RDW-02	ROADWAY PLAN-2
PRO-01	ROADWAY PROFILE-1
PRO-02	ROADWAY PROFILE-2
MDS-01	MISCELLANEOUS DETAILS-1
MDS-02	MISCELLANEOUS DETAILS-2
SPM-01	SIGNING AND PAVEMENT MARKING PLAN-1
SPM-02	SIGNING AND PAVEMENT MARKING PLAN-2
TRS-01	SIGN FACE SHEET ALUMINUM SIGNS-1
TRS-02	SIGN FACE SHEET ALUMINUM SIGNS-2
S-01	STRUCTURE INDEX OF DRAWINGS
S-02	GENERAL PLAN
S-03	LAYOUT PLAN
S-04	BORING LOGS
S-05	ELEVATION AND DETAILS
S-06	LONGITUDINAL SECTIONS
S-07	WATER-HANDLING PLAN STAGE 1
S-08	WATER-HANDLING PLAN STAGE 2
S-09	WINGWALL DETAILS 1
S-10	WINGWALL DETAILS 2
S-11	MISCELLANEOUS DETAILS
S-12	PARAPET DETAILS 1
S-13	PARAPET DETAILS 2

## 8. Delays

The Town shall not be considered in default under this agreement or responsible for any delay resulting from threatening weather conditions, equipment accident or failure, strike or labor dispute, natural disaster, fuel shortage, material shortage, or delay due to any other circumstance beyond the control of the Town.

## 9. Protection of Existing Road and Facilities

Care shall be taken to insure that work does not in any way damage the existing facilities.

## 10. Hurricane Protection

Should hurricane warnings be issued, the Contractor shall take every precaution to minimize danger to persons, to the work and to adjacent property. These precautions shall

include removing all loose materials, tools, and equipment from exposed locations, and removing all scaffolding and other temporary work.

#### **11. Protection against High Water and Storm**

The contractor shall take all precautions to prevent damage to work or equipment by high water or by storms. The Owner may prohibit the carrying out of work at any time when in his judgment high waters or storm conditions are unfavorable or unsuitable or at any time regardless of the weather when proper precautions are not being taken to safeguard previously constructed work or work in progress.

#### **12. Lights, Barriers, Watchmen and Indemnity**

The Contractor shall erect and maintain such barriers, lighting, warning lights, danger warning signals, and signs that will prevent accidents during the construction work and protect the work and insure the safety of personnel and the public at all times and places; the Contractor shall indemnify and protect the Owner and the Engineer in every respect from injury or damage whatsoever caused by any act of neglect by the Contractor or his subcontractors or their servants or agents, including any claim arising out of failure to erect and maintain sufficient railing or fence as required by Section 13A-111 Connecticut General Statutes from claims of defect in violation of 13A-149 Connecticut General Statutes.

#### **13. Night Work**

Night work, or work on Saturdays, Sundays, or legal holidays requiring the presence of an engineer or inspector, will not be permitted except as approved by the Owner. Should it be necessary for the Owner to operate an organization for continuous night work or for emergency night work, the lighting, safety and other facilities which are deemed necessary shall be provided by the Contractor. Compensation for this work shall be considered as having been included in the prices stipulated for the appropriate items of work as listed in the bid, and no extra compensation will be paid by the Owner.

#### **14. Shoring**

If shoring is required to safely excavate or work within an excavated area, according to OSHA regulations, the cost of the shoring materials, erection and removal shall be considered as having been included in the prices stipulated for the appropriate items of work as listed in the bid, and no extra compensation will be paid by the owner.

#### **15. Working Hours**

Hours of Work shall be Monday through Friday, 7:00 a.m. to 5:30 p.m., excluding Town designated holidays. If required to work beyond this schedule, hours shall be arranged in advance with the Town to allow for inspection and engineering services to be scheduled.

#### **16. Time of Completion**

Bidder must agree to commence work immediately after the date specified in a written "Notice to Proceed" of the Town, and to fully complete all work prior to November 30, 2023

completion date for that project. Bidder must agree also to pay as liquidated damages, the sum of \$500 for each calendar day beyond the aforementioned completion date (refer also to Section 1.08 Prosecution and Progress in the Special Provisions) as hereinafter provided in the General Conditions.

## **17. Private Property/Construction of Adjoining Buildings**

Attention is drawn to the fact that some of this work will take place adjacent to other building construction on private property. The greatest care shall be taken to avoid any trespass onto said private property without the express written permission of the owner. Any inadvertent damage to private property caused by the contractor shall be repaired to the satisfaction of the owner and shall be reported immediately to the Town of Mansfield Engineering representative.

## **18. Notice to Contractor - Permits/Permit Applications**

The Contractor is hereby notified that all permit and permit applications contained herein shall be made a part of this contract. In the absence of the permit, the application shall be binding. 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 changes the character of the work, adjustment will be made to the contract in accordance with the appropriate articles in Section 1.04, Form 818. The requirements and conditions set forth in the permit and permit application shall be binding on the Contractor just as any other specification. Contractor shall be responsible for posting the bond or bonds required under any permits, including but not limited to the DOT permits included.

## **19. Control of Materials**

### *Certified Test Reports, Materials Certificate and Certificate of Compliance*

For all materials, a Certified Test Report and a Certificate of Compliance will be required confirming their conformance to the requirements set forth in these plans or specifications or both. Should the consignee noted on a Certified Test Report be other than the Prime Contractor, the Materials Certificates shall be required to identify the shipment.

All materials utilized in this project shall be subject to Certification, and/or sampling requirements. Payment will not be made for those items incorporated into the project which have not met testing requirements as set forth herein. Samples and/or certificates shall be provided two weeks in advance of utilization on the project to allow time for testing and approval. Materials or items used in the project without appropriate testing will be subject to removal and replacement at the contractor's sole expense if testing shows the material or item to be of poor quality or to be different from that specified herein.

## **20. Job Coordination Meetings**

Job coordination meetings will be conducted during the project and a responsible representative of the contractor will be required to attend each meeting. The representative

must be knowledgeable about contractor's work including knowledge of the design, status of materials and deliveries, and have the authority to make schedule commitments.

## **NOTICE TO CONTRACTOR: UTILITY SPECIFICATIONS AND COORDINATION**

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 also hereby required to notify and coordinate with the appropriate utility companies to verify the installation responsibilities of any temporary or permanent relocation of their utilities. The water main work will be performed by the Connecticut Water Company and the contractor shall coordinate this work directly with them.

## **NOTICE TO CONTRACTOR: CONTRACTOR TRAINING REQUIREMENT FOR 10-HOUR OSHA CONSTRUCTION SAFETY AND HEALTH COURSE**

In accordance with Connecticut General Statute 31-53b and Public Act No. 08-83, the Contractor is required to furnish proof that any person performing the work of a mechanic, laborer or worker pursuant to the classifications of labor under section 31-53, 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.

Proof of compliance with the provisions of the statute shall consist of a student course completion card issued by the federal Occupational Safety and Health Administration, or other such proof as deemed appropriate by the Commissioner of the Connecticut Department of Labor, dated no earlier than five years prior to the commencement of the project. Each employer shall affix a copy of the construction safety course completion card for each applicable employee to the first certified payroll submitted to the Department of Transportation on which the employee's name first appears.

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.

This section does not apply to employees of public service companies, as defined in section 16-1 of the 2008 supplement to the General Statutes, or drivers of commercial motor vehicles driving the vehicle on the public works project and delivering or picking up cargo from public works projects provided they perform no labor relating to the project other than the loading and unloading of their cargo.

The internet website for the federal Occupational Safety and Health Training Institute is <http://www.osha.gov/fso/ote/training/edcenters>.

Additional information regarding this statute can be found at the Connecticut Department of Labor website, <http://www.ctdol.state.ct.us/wgwkstnd/wgemenu.htm>.

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".



## **NOTICE TO CONTRACTOR: NON-DISCRIMINATION**

The following subsections are set forth here as required by section 4a-60 of the Connecticut General Statutes and specifically apply to this contract: Non-Discrimination

(a) For purposes of this Section, the following terms are defined as follows:

- i. "Commission" means the Commission on Human Rights and Opportunities;
- ii. "Contract" and "contract" include any extension or modification of the Contract or contract;
- iii. "Contractor" and "contractor" include any successors or assigns of the Contractor or contractor;
- iv. "Gender identity or expression" means a person's gender-related identity, appearance or behavior, whether or not that gender-related identity, appearance or behavior is different from that traditionally associated with the person's physiology or assigned sex at birth, which gender-related identity can be shown by providing evidence including, but not limited to, medical history, care or treatment of the gender-related identity, consistent and uniform assertion of the gender-related identity or any other evidence that the gender-related identity is sincerely held, part of a person's core identity or not being asserted for an improper purpose.
- v. "good faith" means that degree of diligence which a reasonable person would exercise in the performance of legal duties and obligations;
- vi. "good faith efforts" shall include, but not be limited to, those reasonable initial efforts necessary to comply with statutory or regulatory requirements and additional or substituted efforts when it is determined that such initial efforts will not be sufficient to comply with such requirements;
- vii. "marital status" means being single, married as recognized by the State of Connecticut, widowed, separated or divorced;
- viii. "mental disability" means one or more mental disorders, as defined in the most recent edition of the American Psychiatric Association's "Diagnostic and Statistical Manual of Mental Disorders", or a record of or regarding a person as having one or more such disorders;
- ix. "minority business enterprise" means any small contractor or supplier of materials fifty-one percent or more of the capital stock, if any, or assets of which is owned by a person or persons: (1) who are active in the daily affairs of the enterprise, (2) who have the power to direct the management and policies of the enterprise, and (3) who are members of a minority, as such term is defined in subsection (a) of Connecticut General Statutes § 32-9n; and
- x. "public works contract" means any agreement between any individual, firm or corporation and the State or any political subdivision of the State other than a municipality for construction, rehabilitation, conversion, extension, demolition or repair of a public building, highway or other changes or improvements in real property, or which is financed in whole or in part by the State, including, but not limited to, matching expenditures, grants, loans, insurance or guarantees.

For purposes of this Section, the terms "Contract" and "contract" do not include a contract where each contractor is (1) a political subdivision of the state, including, but not limited to, a municipality, (2) a quasi-public agency, as defined in Conn. Gen. Stat. Section 1-120, (3) any other state, including but not limited to any federally recognized Indian tribal governments, as defined in Conn. Gen. Stat. Section 1-267, (4) the federal government, (5) a foreign government,

or (6) an agency of a subdivision, agency, state or government described in the immediately preceding enumerated items (1), (2), (3), (4) or (5).

(b) (1) The Contractor agrees and warrants that in the performance of the Contract such Contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, mental retardation, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by such Contractor that such disability prevents performance of the work involved, in any manner prohibited by the laws of the United States or of the State of Connecticut; and the Contractor further agrees to take affirmative action to insure that applicants with job-related qualifications are employed and that employees are treated when employed without regard to their race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, mental retardation, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by the Contractor that such disability prevents performance of the work involved; (2) the Contractor agrees, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, to state that it is an "affirmative action-equal opportunity employer" in accordance with regulations adopted by the Commission; (3) the Contractor agrees to provide each labor union or representative of workers with which the Contractor has a collective bargaining Agreement or other contract or understanding and each vendor with which the Contractor has a contract or understanding, a notice to be provided by the Commission, advising the labor union or workers' representative of the Contractor's commitments under this section and to post copies of the notice in conspicuous places available to employees and applicants for employment; (4) the Contractor agrees to comply with each provision of this Section and Connecticut General Statutes §§ 46a-68e and 46a-68f and with each regulation or relevant order issued by said Commission pursuant to Connecticut General Statutes §§ 46a-56, 46a-68e and 46a-68f; and (5) the Contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the Commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the Contractor as relate to the provisions of this Section and Connecticut General Statutes § 46a-56. If the contract is a public works contract, the Contractor agrees and warrants that he will make good faith efforts to employ minority business enterprises as subcontractors and suppliers of materials on such public works projects.

(c) Determination of the Contractor's good faith efforts shall include, but shall not be limited to, the following factors: The Contractor's employment and subcontracting policies, patterns and practices; affirmative advertising, recruitment and training; technical assistance activities and such other reasonable activities or efforts as the Commission may prescribe that are designed to ensure the participation of minority business enterprises in public works projects.

(d) The Contractor shall develop and maintain adequate documentation, in a manner prescribed by the Commission, of its good faith efforts.

(e) The Contractor shall include the provisions of subsection (b) of this Section in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the State and such provisions shall be binding on a subcontractor, vendor or manufacturer unless exempted by regulations or orders of the Commission. The Contractor shall take such action with respect to any such subcontract or purchase order as the Commission may direct as a means of enforcing such provisions including sanctions for noncompliance in accordance with

Connecticut General Statutes §46a-56; provided if such Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the Commission, the Contractor may request the State of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the State and the State may so enter.

(f) The Contractor agrees to comply with the regulations referred to in this Section as they exist on the date of this Contract and as they may be adopted or amended from time to time during the term of this Contract and any amendments thereto.

(g)(1) The Contractor agrees and warrants that in the performance of the Contract such Contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of sexual orientation, in any manner prohibited by the laws of the United States or the State of Connecticut, and that employees are treated when employed without regard to their sexual orientation; (2) the Contractor agrees to provide each labor union or representative of workers with which such Contractor has a collective bargaining Agreement or other contract or understanding and each vendor with which such Contractor has a contract or understanding, a notice to be provided by the Commission on Human Rights and Opportunities advising the labor union or workers' representative of the Contractor's commitments under this section, and to post copies of the notice in conspicuous places available to employees and applicants for employment; (3) the Contractor agrees to comply with each provision of this section and with each regulation or relevant order issued by said Commission pursuant to Connecticut General Statutes § 46a-56; and (4) the Contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the Commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the Contractor which relate to the provisions of this Section and Connecticut General Statutes § 46a-56.

(h) The Contractor shall include the provisions of the foregoing paragraph in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the State and such provisions shall be binding on a subcontractor, vendor or manufacturer unless exempted by regulations or orders of the Commission. The Contractor shall take such action with respect to any such subcontract or purchase order as the Commission may direct as a means of enforcing such provisions including sanctions for noncompliance in accordance with Connecticut General Statutes § 46a-56; provided, if such Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the Commission, the Contractor may request the State of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the State and the State may so enter.

## **NOTICE TO CONTRACTOR: EXECUTIVE ORDERS**

The Agreement is subject to the provisions of Executive Order No. Three of Governor Thomas J. Meskill, promulgated June 16, 1971, concerning labor employment practices, Executive Order No. Seventeen of Governor Thomas J. Meskill, promulgated February 15, 1973, concerning the listing of employment openings and Executive Order No. Sixteen of Governor John G. Rowland promulgated August 4, 1999, concerning violence in the workplace, all of which are incorporated into and are made a part of the Agreement as if they had been fully set forth herein. At the contractor's request, TOWN shall provide a copy of these orders to the contractor. The Agreement may also be subject to Executive Order No. 7C of Governor M. Jodi Rell, promulgated July 13, 2006, concerning contracting reforms and Executive Order No. 14 of Governor M. Jodi Rell, promulgated April 17, 2006, concerning procurement of cleaning products and services, in accordance with their respective terms and conditions.

## **NOTICE TO CONTRACTOR: STATE ELECTION ENFORCEMENT COMMISSION (SEEC) CAMPAIGN CONTRIBUTION BAN**

This Agreement is subject to the provisions of the State Election Enforcement Commission (SEEC) Campaign Contribution Ban. For all State Contracts as defined in P.A. 07-1 having a value in a calendar year of \$50,000 or more or a combination or series of such agreements or contracts having a value of \$100,000 or more, the authorized signatory to this Agreement expressly acknowledges receipt of the State Elections Enforcement Commission's notice advising state contractors of state campaign contribution and solicitation prohibitions, and will inform its principals of the contents of the notice. See SEEC Form (below):

### **CONNECTICUT STATE ELECTIONS ENFORCEMENT COMMISSION**

Rev. 1/11

#### **NOTICE TO EXECUTIVE BRANCH STATE CONTRACTORS AND PROSPECTIVE STATE CONTRACTORS OF CAMPAIGN CONTRIBUTION AND SOLICITATION LIMITATIONS**

This notice is provided under the authority of Connecticut General Statutes §9-612(g)(2), as amended by P.A. 10-1, and is for the purpose of informing state contractors and prospective state contractors of the following law (*italicized words are defined later*).

#### **CAMPAIGN CONTRIBUTION AND SOLICITATION LIMITATIONS**

*No state contractor, prospective state contractor, principal of a state contractor or principal of a prospective state contractor, with regard to a state contract or state contract solicitation with or from a state agency in the executive branch or a quasi-public agency or a holder, or principal of a holder of a valid prequalification certificate, shall make a contribution to (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of Governor, Lieutenant Governor, Attorney General, State Comptroller, Secretary of the State or State Treasurer, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee (which includes TOWN committees).*

In addition, no holder or principal of a holder of a valid prequalification certificate, shall make a contribution to (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of State senator or State representative, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee.

On and after January 1, 2011, no state contractor, prospective state contractor, principal of a state contractor or principal of a prospective state contractor, with regard to a state contract or state contract solicitation with or from a state agency in the executive branch or a quasi-public agency or a holder, or principal of a holder of a valid prequalification certificate, shall knowingly solicit contributions from the state contractor's or prospective state contractor's employees or from a subcontractor or principals of the subcontractor on behalf of (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of Governor, Lieutenant Governor, Attorney General, State Comptroller, Secretary of the State or State Treasurer, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee.

## **DUTY TO INFORM**

State contractors and prospective state contractors are required to inform their principals of the above prohibitions, as applicable, and the possible penalties and other consequences of any violation thereof.

## **PENALTIES FOR VIOLATIONS**

Contributions or solicitations of contributions made in violation of the above prohibitions may result in the following civil and criminal penalties:

**Civil penalties**—Up to \$2,000 or twice the amount of the prohibited contribution, whichever is greater, against a principal or a contractor. Any state contractor or prospective state contractor which fails to make reasonable efforts to comply with the provisions requiring notice to its principals of these prohibitions and the possible consequences of their violations may also be subject to civil penalties of up to \$2,000 or twice the amount of the prohibited contributions made by their principals.

**Criminal penalties**—Any knowing and willful violation of the prohibition is a Class D felony, which may subject the violator to imprisonment of not more than 5 years, or not more than \$5,000 in fines, or both.

## **CONTRACT CONSEQUENCES**

In the case of a state contractor, contributions made or solicited in violation of the above prohibitions may result in the contract being voided.

In the case of a prospective state contractor, contributions made or solicited in violation of the above prohibitions shall result in the contract described in the state contract solicitation not being awarded to the prospective state contractor, unless the State Elections Enforcement Commission determines that mitigating circumstances exist concerning such violation.

The State shall not award any other state contract to anyone found in violation of the above prohibitions for a period of one year after the election for which such contribution is made or solicited, unless the State Elections Enforcement Commission determines that mitigating circumstances exist concerning such violation.

Additional information may be found on the website of the State Elections Enforcement Commission, [www.ct.gov/seec](http://www.ct.gov/seec). Click on the link to “Lobbyist/Contractor Limitations.”

## **DEFINITIONS**

“State contractor” means a person, business entity or nonprofit organization that enters into a state contract. Such person, business entity or nonprofit organization shall be deemed to be a state contractor until December thirty-first of the year in which such contract terminates. “State contractor” does not include a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision exclusively amongst themselves to further any purpose authorized by statute or charter, or an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person's capacity as a state or quasi-public agency employee.

“Prospective state contractor” means a person, business entity or nonprofit organization that

(i) submits a response to a state contract solicitation by the state, a state agency or a quasi-public agency, or a proposal in response to a request for proposals by the state, a state agency or a quasi-public agency, until the contract has been entered into, or (ii) holds a valid prequalification certificate issued by the Commissioner of Administrative Services under section 4a-100. "Prospective state contractor" does not include a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision exclusively amongst themselves to further any purpose authorized by statute or charter, or an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person's capacity as a state or quasi-public agency employee.

"Principal of a state contractor or prospective state contractor" means (i) any individual who is a member of the board of directors of, or has an ownership interest of five per cent or more in, a state contractor or prospective state contractor, which is a business entity, except for an individual who is a member of the board of directors of a nonprofit organization, (ii) an individual who is employed by a state contractor or prospective state contractor, which is a business entity, as president, treasurer or executive vice president, (iii) an individual who is the chief executive officer of a state contractor or prospective state contractor, which is not a business entity, or if a state contractor or prospective state contractor has no such officer, then the officer who duly possesses comparable powers and duties, (iv) an officer or an employee of any state contractor or prospective state contractor who has *managerial or discretionary responsibilities with respect to a state contract*, (v) the spouse or a *dependent child* who is eighteen years of age or older of an individual described in this subparagraph, or (vi) a political committee established or controlled by an individual described in this subparagraph or the business entity or nonprofit organization that is the state contractor or prospective state contractor.

"State contract" means an agreement or contract with the state or any state agency or any quasi-public agency, let through a procurement process or otherwise, having a value of fifty thousand dollars or more, or a combination or series of such agreements or contracts having a value of one hundred thousand dollars or more in a calendar year, for (i) the rendition of services, (ii) the furnishing of any goods, material, supplies, equipment or any items of any kind, (iii) the construction, alteration or repair of any public building or public work, (iv) the acquisition, sale or Agreement of any land or building, (v) a licensing arrangement, or (vi) a grant, loan or loan guarantee. "State contract" does not include any agreement or contract with the state, any state agency or any quasi-public agency that is exclusively federally funded, an education loan, a loan to an individual for other than commercial purposes or any agreement or contract between the state or any state agency and the United States Department of the Navy or the United States Department of Defense.

"State contract solicitation" means a request by a state agency or quasi-public agency, in whatever form issued, including, but not limited to, an invitation to bid, request for proposals, request for information or request for quotes, inviting bids, quotes or other types of submittals, through a competitive procurement process or another process authorized by law waiving competitive procurement.

"Managerial or discretionary responsibilities with respect to a state contract" means having direct, extensive and substantive responsibilities with respect to the negotiation of the state contract and not peripheral, clerical or ministerial responsibilities.

“Dependent child” means a child residing in an individual’s household who may legally be claimed as a dependent on the federal income tax of such individual.

“Solicit” means (A) requesting that a contribution be made, (B) participating in any fund-raising activities for a candidate committee, exploratory committee, political committee or party committee, including, but not limited to, forwarding tickets to potential contributors, receiving contributions for transmission to any such committee or bundling contributions, (C) serving as chairperson, treasurer or deputy treasurer of any such committee, or (D) establishing a political committee for the sole purpose of soliciting or receiving contributions for any committee. Solicit does not include: (i) making a contribution that is otherwise permitted by Chapter 155 of the Connecticut General Statutes; (ii) informing any person of a position taken by a candidate for public office or a public official, (iii) notifying the person of any activities of, or contact information for, any candidate for public office; or (iv) serving as a member in any party committee or as an officer of such committee that is not otherwise prohibited in this section.

“Subcontractor” means any person, business entity or nonprofit organization that contracts to perform part or all of the obligations of a state contractor's state contract. Such person, business entity or nonprofit organization shall be deemed to be a subcontractor until December thirty first of the year in which the subcontract terminates. “Subcontractor” does not include (i) a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision exclusively amongst themselves to further any purpose authorized by statute or charter, or (ii) an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person's capacity as a state or quasi-public agency employee.

“Principal of a subcontractor” means (i) any individual who is a member of the board of directors of, or has an ownership interest of five per cent or more in, a subcontractor, which is a business entity, except for an individual who is a member of the board of directors of a nonprofit organization, (ii) an individual who is employed by a subcontractor, which is a business entity, as president, treasurer or executive vice president, (iii) an individual who is the chief executive officer of a subcontractor, which is not a business entity, or if a subcontractor has no such officer, then the officer who duly possesses comparable powers and duties, (iv) an officer or an employee of any subcontractor who has managerial or discretionary responsibilities with respect to a subcontract with a state contractor, (v) the spouse or a dependent child who is eighteen years of age or older of an individual described in this subparagraph, or (vi) a political committee established or controlled by an individual described in this subparagraph or the business entity or nonprofit organization that is the subcontractor.

Date: \_\_\_\_\_  
Town: Mansfield  
6FR Part 31.



## **NOTICE TO CONTRACTOR – PROCUREMENT OF MATERIALS**

Upon award, the Contractor shall proceed with shop drawings, working drawings, procurement of materials, and all other submittals required to complete the work in accordance with the contract documents.

## **NOTICE TO CONTRACTOR - PROTECTION OF WATER MAIN**

The Connecticut Water Company has existing cast iron water mains within Hunting Lodge road. When excavating to subgrade in the vicinity of these water mains, the use of heavy-duty bulldozers, scrapers or other types of heavy earth-moving equipment will not be allowed above the water mains or within three feet from the water mains measured horizontally. Small lightweight bulldozers or tractor pay loaders may be used, as determined by the Engineer.

Rock or ledge encountered within 10 feet of the water mains shall be removed by mechanical means. Vibratory rollers and compaction equipment shall not be used above the water mains, or closer than a distance equal to the width of the roller drum from the centerline of the pipe. Non-vibratory rollers may be utilized for compacting bituminous pavement within the vicinity of the water mains.

The Contractor is reminded that based on the conditions stated above, the Contractor still must meet and satisfy all compaction requirements for all items of work required to complete this project.

The Contractor shall consider in his bid any inconvenience and additional work required to meet these conditions. The work to repair or replace any water mains damaged by the Contractor's operations will be made solely at the Contractor's expense.

## **NOTICE TO CONTRACTOR - NOTIFY OF ROAD CLOSURE**

The Contractor shall provide advanced notices of the closure of Hunting Lodge Road, which include at least 14 days to the following:

Town of Mansfield  
Department of Public Works  
4 S Eagleville Rd,  
Storrs, CT 06268  
Phone 860-429-3331

Town of Mansfield  
Fire and Emergence Services  
4 S Eagleville Road  
Storrs, CT 06268  
Phone: 860-429-3323

Town of Mansfield  
Police Department  
4 S Eagleville Rd,  
Storrs, CT 06268  
Phone: 860-429-6024

Town of Mansfield  
Public Schools  
Office of the Superintendent  
4 S Eagleville Road  
Storrs, CT 06268  
Phone: 860-429-3350

## **SECTION 1.07 - LEGAL RELATIONS AND RESPONSIBILITIES**

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

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

Eversource Energy – Electric Distribution  
Mr. Mark Bonjuklian,  
Manager - Distribution Projects and  
Programs  
9 Tindall Avenue  
Norwalk, CT 06851  
203-845-3456 (Office)  
email: [mark.bonjuklian@eversource.com](mailto:mark.bonjuklian@eversource.com)

Mr. Eric Clark  
Operations Manager  
Crown Castle Fiber  
1781 Highland Avenue, Suite 102  
Cheshire, CT 06410  
(203-649-3904 (Office)  
860-863-8311 (Mobile)  
email: [Eric.Clark@crowncastle.com](mailto:Eric.Clark@crowncastle.com)

Ms. Lynne DeLucia  
Manager Engineering & Construction  
Frontier Communications of CT

1441 North Colony Road  
Meriden, CT 06450-4101  
(203) 238-5000 (Office)  
(860) 67-4389 (Mobile)  
[Lynne.m.delucia@ftr.com](mailto:Lynne.m.delucia@ftr.com)

Mr. David Peeling, P.E.  
Director of Engineering  
Connecticut Water Company  
93 West Main Street  
Clinton, CT 06413  
(860) 664-6007 (office):  
email: [David.Peeling@ctwater.com](mailto:David.Peeling@ctwater.com)

Mr. Keith Cournoyer,  
Construction Supervisor  
Charter Communications  
Entertainment, 1 LLC  
207 Tuckie Road  
North Windham, CT 06256  
(860) 456-8346 ext 53029  
e-mail: [Keith.Cournoyer@charter.com](mailto:Keith.Cournoyer@charter.com)

Mr. Kenneth Ruel, Area Supervisor  
Algonquin Gas Transmission Company.  
252 Shunpike Road Cromwell, CT 06416  
(860) 894-1600 (Office)  
(860) 982-1806 (mobile)  
[Kenneth.Ruel@enbridge.com](mailto:Kenneth.Ruel@enbridge.com)

## **SECTION 1.08 – PROSECUTION AND PROGRESS**

Section 1.08 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 “Town for “Department” and for “State”. Substitute “Engineer” for “Commissioner”.

**1.08.04 - Limitation of Operations** - Is supplemented as follows:

The Contractor will not be permitted to perform any work which will interfere with the described traffic operations on all project roadways as follows:

### **Hunting Lodge Road**

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:**

- A. The contractor is alerted to the fact that Hunting Lodge Road is closed by the town of Mansfield and a detour is in place. Hunting Lodge Road will remain closed for the duration of construction.
- B. Working Drawings submittals for the relocation of the gas line and water line shall be approved prior to construction.

### **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.

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

**Description:** This work shall consist of excavating existing channel bottom material in areas where the channel bottom is to be disturbed and regraded to create a work area for a bridge, culvert, and cofferdam installation. This item shall also include the loading, transporting, unloading, stockpiling and protecting of the excavated material on the Site. Subsequent placement of the stockpiled material in the channel, and the removal and proper disposal of all unused and unacceptable material shall also be included.

**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 ledge (bedrock) formations or broken from larger boulders will not be accepted. Broken concrete will not be accepted.

**Construction Methods:** 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 excavated channel bottom material to and from the stockpile are minimized during the placement of material. The Contractor shall prepare the area approved by the Engineer, suitable in size and location for stockpiling the existing channel bottom 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 area shall be cleared and cleaned adequately to prevent mixing with underlying soil or other materials, including the use of a separation barrier such as: structural fabric, polyethylene sheeting, or similar. The stockpile area shall be adequately covered to protect the excavated channel bottom material from erosion by rain or other forces.

After clearing and grubbing, the Engineer will identify the limits of the exposed channel bottom material to be excavated under this item. The Engineer will identify the bottom limit of excavation, an amount up to but not exceeding 24 inches in depth, based upon visual inspection of the channel bottom material, unless otherwise specified in the Contract. After the limits of excavation have been determined, the Contractor shall excavate the channel bottom material, separate from any other roadway, structure, channel or unsuitable material excavation in the area. After the channel bottom material, and approved supplemental streambed channel material if needed, has been placed in the stockpile area, no other excavated or off-Site material shall be placed in the stockpile.

The stockpiled channel bottom material shall be placed at the designated location(s) to the required thickness as shown on the plans, denoted on the permit application, or as directed by the Engineer. Equipment and placement techniques shall prevent integration with the surrounding material and shall keep the channel bottom material relatively homogenous. Channel material shall be placed in a manner that replicates the original condition of the channel prior to excavation.

The Contractor shall perform all containment, diversion, or other separation of the channel flow when placing the channel bottom material to minimize sediment transport downstream.

The disposal of any surplus or unsuitable material shall be in accordance with Section 2.02. Restore the stockpile area as directed by the Engineer.

If it is agreed by the Engineer that there is an insufficient quantity of excavated channel bottom material within the Project limits, the Contractor shall obtain Supplemental Streambed Channel Material as specified under that item.

## **ITEM #0202217A - SUPPLEMENTAL STREAMBED CHANNEL MATERIAL**

**Description:** This work shall consist of procuring, transporting and placing supplemental streambed channel 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. This work shall also include any necessary temporary protection and stockpiling of the supplemental streambed channel material on the Site and removal and proper disposal of all unused material.

**Materials:** When a sufficient quantity of material is not available from the existing streambed channel within the permitted footprint of the Site, the Contractor shall furnish visually inspected and accepted supplemental streambed channel material from an off-Site source.

The supplemental streambed channel material for this item shall be consistent with the existing naturally-formed cobbles and rocks, gravel, and clean natural sediments found within the existing channel. Rock excavated from ledge (bedrock) formations, broken from larger boulders, broken concrete or angular material will not be accepted. Rock larger than 12 inches in diameter will not be accepted. Silts and clays will not be accepted.

The visual inspection of the supplemental streambed channel material shall be performed by the Engineer at the off-Site source prior to delivery of material to the Site. The Contractor shall notify the Engineer at least 10 days in advance of the need for inspection of proposed off-Site material.

**Construction Methods:** 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 channel bottom material. The Contractor shall select an upland location where disruption to the stream channel or impact to wetland areas caused by moving the supplemental streambed channel bottom 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 area shall be cleared and cleaned adequately to prevent mixing with underlying soil or other materials, including the use of structural fabric if required. The stockpile area shall be adequately covered to protect the supplemental streambed channel material from erosion by rain or other forces. After the supplemental streambed channel material and the excavated channel bottom material to be reused have been placed in the stockpile areas, no other excavated or off-Site material shall be placed in the stockpiles.

The reused and supplemental streambed channel material shall be placed at the designated location(s) to the required thickness as shown on the plans or denoted on the permit application, or as directed by the Engineer. Equipment and placement techniques shall prevent integration with the surrounding material and shall keep the channel bottom material relatively homogenous. Reused and supplemental streambed channel material shall be placed in a manner that replicates the original condition of the channel prior to excavation.

The Contractor shall perform all containment, diversion, or other separation of the channel flow when placing the reused and supplemental streambed channel material to minimize sediment transport downstream.

The disposal of any surplus or unsuitable material shall be in accordance with Section 2.02. Restore the stockpile area as directed by the Engineer.



## **ITEM #0204151A - HANDLING WATER**

**Description:** Work under this item shall consist of designing, furnishing, installing, maintaining, removing and disposing of a temporary water handling system. This shall include water-handling-cofferdams (temporary barriers), bypass pipes, bypass pumps/hoses, temporary energy dissipation, sumps, drainage channels, and equipment and work necessary for dewatering.

A temporary water handling system redirects surface 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 working drawings, 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 of ConnDOT Form 818, shall also be prepared and submitted. The Contractor's proposed design must meet all requirements established in regulatory permits for the Project, the requirements of 1.10, and any stage construction configurations.

The Contractor shall consider stream conditions and water elevations 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 be compatible with the stage construction and Maintenance and Protection of Traffic, as indicated in the Contract, and shall conform to Section 1.10. of ConnDOT Form 818.

The Contractor shall be responsible for maintenance of the water handling system. If the system becomes damaged or displaced during construction, the system shall be corrected as required.

Unless otherwise provided or directed, all temporary water handling system components shall be removed and disposed of in an acceptable manner when no longer required.

## ITEM 0212010.20 FULL DEPTH RECLAMATION (20 INCH MAXIMUM DEPTH)

**Description:** The services consist of pulverizing and blending existing bituminous concrete pavement and underlying granular layer(s) to an identified depth, stabilization of the reclaimed material, grading, and compacting to the lines, grades and thicknesses, as discussed and agreed upon in the pre-construction meeting.

Full depth reclamation may include raising elevations, lowering elevations, or replacing material by adding or removing materials from the roadway. The work must be performed as specified in this Exhibit A and payment made as indicated in the Exhibit B- Price Schedule. The Client Agency shall supply any additional stone materials required to do the work.

**Materials:** The reclaimed material must consist of existing bituminous pavement, the underlying granular material and calcium chloride for stabilization. Additional crushed stone may be required when it is necessary to alter the gradation of the reclaimed material.

(1) Reclaimed Material: The reclaimed material must meet the requirements of the Standards, Article M.02.06, Grading B. Field samples must be tested according to the following Grading B sieves:

Square Mesh Sieves	Percent Passing (by weight)
5 inch	100
3 1/2 inch	90-100
1 1/2 inch	55-95
1/4 inch	25-60
No. 200	0-5

(2) Calcium Chloride Stabilizer: The calcium chloride solution must conform to AASHTO M 144, Type 1 or Type 2. Solution must be provided by the manufacturer as a true solution and not reconstituted from flake.

The Contractor shall submit a representative sample to the Client Agency a minimum of thirty (30) days prior to construction and must include a Certified Test Report and Materials Certificate, as defined in the Standards.

(3) Crushed Stone: When crushed stone is needed to meet the blended gradation requirements, the material must conform with the Standards, Sub article M.01.02-2 and be one of the following: No. 3, No. 4, No. 6, No. 67, or No. 8 coarse aggregate, as proposed by the Contractor and approved and supplied by the Client Agency.

(4) Processed Aggregate Base: When additional material is required to meet the lines and grades on the road segment plans, Processed Aggregate Base must be used conforming to the requirements of the Standards, Section M.05.

(5) Testing and Certification: The Contractor shall test reclaimed material daily in accordance with AASHTO T 27 and AASHTO T 11 test methods. The Contractor shall provide

the Client Agency with a daily report of all tests performed including gradation, inplace material density, moisture content, stabilizer application rate, and depth of reclaimed material placed.

When the CTDOT is the Client Agency, a sample of the reclaimed material shall be obtained by the Contractor and delivered to the Client Agency upon request.

(6) Quality Control and Reporting: The Contractor shall submit a Quality Control Plan (QCP) meeting the format requirements of AASHTO R 26 a minimum of two (2) weeks prior to starting work.

The QCP must contain the following:

- a. Field-testing procedures and sampling frequency for reclaimed material gradation, density, moisture content, and reclaim depth verification.
- b. Qualifications of the Contractor's quality control representative.
- c. Calibration report for equipment.
- d. Reporting format for sampling and testing results that shall be provided to the Client Agency on a daily basis.

### **Construction Methods:**

Equipment: The Contractor shall utilize the following equipment and the equipment shall be inspected for acceptance by the Client Agency prior to starting work:

(1) Power Broom/Sweeper: A motorized broom or sweeper capable of cleaning the road surface prior to reclamation.

(2) Rotary Reclaimer: A self-propelled rotary reclaimer capable of cutting through, pulverizing and mixing the existing bituminous concrete pavement and underlying granular material to depths up to twelve (12) inches and twenty (20) inches for full depth reclamation and widths of up to eight (8) feet, in a single pass. The rotary reclaimer drum must be capable of operating at various revolutions per minute, independent of the forward speed. The machine must have a mounted spray bar capable of injecting water directly into the cutting drum/mixing chamber and a computerized system capable of regulating and monitoring the water application rate relative to depth of cut, width of cut and speed. The machine must be capable of blending to create a homogenous reclaimed material. The machine must be equipped with an adjustable grading blade in order to leave a smooth surface in its path. Road planers or cold milling machines designed to mill or shred the existing bituminous concrete, rather than crush or fracture it, will not be approved.

(3) Aggregate Spreader: An aggregate spreader will be required when additional crushed stone is requested by the Client Agency to elevate the profile of the road, or as a result of an inadequate test section. The aggregate spreader must distribute and spread the crushed stone evenly along the section of identified roadway. The Contractor shall be capable of spreading stone in variable widths depending on the width of the road. The type of spreader and estimated hours of use will be discussed and approved by the Client Agency at the preconstruction meeting.

(4) Distributor Truck: The distributor truck must be capable of applying liquid calcium chloride in accurately measured quantities at any rate between 0.10 and 2.0 gallons per square yard and in widths up to twenty (20) feet. The distributor truck must be capable of maintaining a uniform application rate and be equipped with a digital volumetric accumulator that is capable of measuring gallons applied and distance traveled. The distributor truck must be motorized to allow pressurized application. The spray nozzles must provide uniform fan-shaped spray throughout the entire length of the spray bar while operating and must be adjustable laterally and vertically.

(5) Motorized Grader: A self-propelled motorized grader capable of shaping, fine grading and finishing the reclaimed material, in addition to any processed aggregate base material, to the proper lines and grades shown in the road segment plans.

(6) Rollers: A minimum of one (1) pneumatic tire roller with a minimum gross weight of twenty-five (25) tons and a minimum of one (1) steel wheeled, double drum vibratory roller with a minimum gross weight of twelve (12) tons, with the capability of producing high amplitude and low frequency vibrations. Additional rollers and compactors may be used. The quantity and type(s) of rollers required will be based on the project type and location and approved by the Client Agency at the pre-construction meeting.

(7) Water Tank Truck: A tank truck equipped with a pressure spray bar for applying water to the roadway during the reclamation process. The water tank truck must be capable of providing a controlled and consistent spray without eroding material.

**Full Depth Reclamation:** The reclamation operation must proceed in accordance with the requirements of the "Maintenance and Protection of Traffic" and "Prosecution and Progress" specifications found in the Standards and as identified in this Exhibit A.

(1) Utilities and Drainage: All utility companies must be notified thirty (30) days prior to the start of the reclamation in order to allow utilities and drainage systems to be identified, protected, or relocated where necessary and as indicated by the Client Agency.

All inlets and basins must be protected to prevent reclaimed material and other contaminants from entering throughout the duration of the project. Sufficient drainage must be provided to avoid ponding or erosion from excessive runoff.

(2) Weather Requirements: Reclamation must not be Performed when rain is forecasted within twenty-four (24) hours of the scheduled work, when ambient temperatures are below forty degrees Fahrenheit (40 F), or when temperatures are forecasted to fall below freezing ° within three (3) days after reclamation is Performed.

(3) Road Surface Preparation: The Client Agency shall complete any clearing, grubbing and removal of trees, stumps, branches, leaves, brush, grass, weeds, soil, rubbish and any other objectional material extending into the roadway limits. The Contractor shall remove raised pavement markers, loop wires, thermoplastic markers and other materials that will adversely affect the reclaimed mix. Immediately prior to reclamation. The Contractor shall clean the roadway surface using a motorized sweeper and any other equipment or means

necessary to remove all foreign debris and material including but not limited to leaves, branches, dirt, sand and garbage. All debris and material removed shall be disposed of by the Contractor. The Contractor shall perform full depth sawcutting at adjacent roadway surfaces such as side streets and driveways, as shown on the road segment plans or as directed by the Client Agency. The road surface preparation shall be approved by the Client Agency.

(4) Test Section: A test section must be completed prior to the start of any reclamation work and taken from the location requested and approved by the Client Agency.

The test section must be at least five hundred (500) feet long, a full lane width and be constructed in accordance with all specification requirements. The materials must be sampled and tested by the Contractor for conformance with the gradation identified in this Contract and as accepted by CTDOT's Material Evaluation and Specification Unit.

The Contractor shall demonstrate a rolling pattern to achieve specified density requirements verified by sampling and testing the placed material in a manner acceptable to the Client Agency. The Contractor shall be responsible for determining the optimum moisture content and maximum dry density for compaction in accordance with AASHTO T 180 Method D.

If the test section does not meet the Contract requirements, the Contractor shall propose a revised work procedure, which may require introducing additional crushed stone. The Contractor shall construct additional test section(s) until compliance is demonstrated to the satisfaction of the Client Agency. An acceptable test section must be completed within the time permitted as outlined in the Section K. (Limitation of Operations) of this Exhibit A.

Production work will not begin until successful completion of the test strip is authorized in writing by the Client Agency.

(5) Reclamation: The existing bituminous concrete pavement and underlying granular layer(s) must be pulverized and blended to the depth required in the road segment plans with a tolerance of plus one inch (+1") or minus one inch (-1"). Individual passes must overlap by six (6) inches wherever feasible. The blended material must be homogeneous to the satisfaction of the Client Agency and meet the gradation requirements. The Contractor shall maintain the cutting drum throughout the project by performing daily inspection, which shall include replacing all worn and broken cutting teeth.

When additional crushed stone is required, the work must be performed using one of the coarse aggregate designations listed in Section F, Materials, of this Exhibit A. The selection of coarse aggregate size must be proposed by the Contractor and approved by the Client Agency and based on the results of the test section or as directed on the road segment plans.

The Contractor shall reclaim only the amount of roadway that can be graded and compacted by the end of the work shift to allow for the reopening to traffic.

(6) Handling Reclaimed Material: In areas where the vertical or horizontal geometry of the proposed roadway is different than that of the existing roadway, requiring moving of the reclaimed material, the reclaimed material must be placed in windrows or stockpiled while any filling or excavation is completed. The Client Agency shall approve any plan to windrow the

reclaimed material. The area of stockpile may be determined by the Contractor but shall be approved by the Client Agency. The Contractor shall store materials in a manner that does not interfere with commercial store fronts or residential access and maintain a safe and clear opening free of any obstructions to all driveways and town roads.

The reclaimed material must be removed from the roadway in accordance with the Standards, Section 2.02 "Earth Excavation" and cost shown in the Exhibit B- Price Schedule. Any additional roadway excavation must be Performed in accordance with the Standards and the requirements set forth in this Exhibit A. The resulting plane must be graded and compacted in accordance with the Standards, Section 2.09 "Formation of Subgrade" prior to the replacement of reclaimed material. This work must be included in the cost associated with "Full Depth Reclamation" as shown in the Exhibit B- Price Schedule. When the proposed elevation is achieved, the reclaimed material must be placed back onto the roadway in lifts no greater than six (6) inches in depth. The Contractor may request approval from the Client Agency to place the reclaimed material in lifts up to eight (8) inches in depth. The Contractor shall demonstrate the ability to meet all Contract requirements at the increased depth.

Any areas affected by the temporary stockpiling or windrowing of reclaimed asphalt pavement must be reestablished or repaired as directed by the Client Agency and at no cost to the Client Agency.

(7) Stabilization: After the initial pass with the rotary reclaimer, the calcium chloride solution must be uniformly distributed over the reclaimed material at an application rate of 0.75 gallons per square yard or as approved by the Client Agency. A second pass with the reclaimer to blend the applied calcium chloride must be completed immediately and to the same depth as the initial pass with the rotary reclaimer. Grading, finishing and compaction must be Performed immediately after the second rotary reclaimer pass. After all grading, finishing and compaction is Performed, a final calcium chloride application of 0.10 to 0.25 gallons per square yard must be applied to cap the surface. The application rate for the cap will depend on the specific site conditions, including soil type and the length of time the surface will be open to traffic prior to paving. The Contractor shall demonstrate the chosen application rate for the calcium chloride cap during the test section and as approved by the Client Agency.

Application of the calcium chloride solution must be completed in continuous segments. The calcium chloride solution cannot be applied in the rain or when rain is forecasted. The Client Agency shall visually evaluate the stabilized surface after opening to traffic and may request additional application or compaction.

(8) Grading and Finishing: Reclaimed material must be shaped, fine graded and finished to the proper lines and grades shown in the road segment plans. The Contractor shall utilize the crushed stone supplied by the Client Agency to meet the gradation requirements as requested by the Client Agency.

Where additional material is required to meet the lines and grades shown in the road segment plans, shaping and grading must be Performed and constructed in accordance with the Standards, Section 3.04 "Processed Aggregate Base." The additional material must only be placed after the reclaimed material has been fully compacted.

Where the removal of material is required to meet the lines and grades shown on the road segment plans, such removal must be Performed in accordance with the Standards, Section 2.02. After material has been removed, the remaining reclaimed material must be graded and compacted in accordance with the Standards and the requirements set forth in this Exhibit A. The Contractor shall dispose of excess material in a manner acceptable to the Client Agency and in accordance with the Standards, Section 1.10.03.

(9) Compaction: Reclaimed material must be compacted using a minimum of one (1) vibratory roller and one (1) pneumatic tire roller. Reclaimed material must be compacted in maximum six (6) inch lifts. The Contractor may request approval from the Client Agency to compact the reclaimed material in lifts up to eight (8) inches in depth. The Contractor shall demonstrate the ability to meet all requirements at the increased depth. The Contractor shall ensure the moisture content is within two percent (2%) of the specified optimum moisture before starting compaction. The compaction of the reclaimed material must be a minimum of ninety-five percent (95%) of the maximum dry density determined during construction of the test section (AASHTO T 180 Method D). The surface must support construction equipment without rutting or shoving prior to placement of bituminous concrete. The quantity and type(s) of rollers required will be based on the project type and location and approved by the Client Agency at the pre-construction meeting.

(10) Protection of Surface: Traffic must not be permitted on the reclaimed road surface until all compaction has been completed. Traffic must be held to speeds no greater than twenty-five (25) miles per hour, using Trafficpersons. The Trafficpersons must be used to control traffic flow at all points during work operations. Signing must not be removed until all other Contract requirements are fulfilled, so that the original posted speed limit can be reinstated. The Contractor shall correct any surface irregularities that develop during or after the abovedescribed work to the satisfaction of the Client Agency.

## **ITEM #0219011A - SEDIMENTATION CONTROL AT CATCH BASIN**

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

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

### Siltsack®

SI Geosolutions:

Phone: (800) 621-0444

Website: [www.sigeosolutions.com](http://www.sigeosolutions.com)

### Dandy Sack™

Dandy Products Inc.

P.O. Box 1980

Westerville, Ohio 43086

Phone: (800) 591-2284

Fax: (740) 881-2791

Email: [dlc@dandyproducts.com](mailto:dlc@dandyproducts.com)

Website: [www.dandyproducts.com](http://www.dandyproducts.com)

### FLeXstorm Inlet Filters

Inlet & Pipe Protection

24137 W. 111th St - Unit A

Naperville, IL 60564

Phone: (866) 287-8655

Fax: (630) 355-3477

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

Construction Methods: Installation, removal, and maintenance shall be per manufacturer instructions and recommendations.



## **ITEM #0406194A – JOINT AND CRACK SEALING OF BITUMINOUS CONCRETE PAVEMENT**

**Description:** This work consists of furnishing and applying hot-applied rubberized asphalt crack sealer to bituminous concrete pavement joints and cracks. It shall be constructed in close conformity with the lines, grades, thicknesses, and typical cross sections shown on the plans or established by the Engineer. Joint and Crack Sealing of Bituminous Concrete Pavement may be used in conjunction with other repair treatments including joint and crack filling or patching, in which case the sequence of treatments will be provided in the Plans or directed by the Engineer.

For the purposes of this document, the word “crack” includes all longitudinal (along the direction of travel) and transverse (perpendicular to the direction of travel) cracks and joints. All work specified for “crack(s)” herein shall apply to all types of cracks and joints unless otherwise specified.

### **Materials:**

1. **Crack Seal:** The crack seal material shall be composed of a hot-applied, rubberized asphalt meeting AASHTO M 324 Type II requirements. The crack seal material will also contain a minimum of 10% crumb rubber by weight. The Contractor must submit to the Engineer all Material Safety Data Sheet documents from the material manufacturer prior to the commencement of work. During work progress, the Contractor must submit to the Engineer the manufacturer’s Material Certificate for compliance to AASHTO M 324 Type II requirements for each batch or lot of material utilized on the Contract.
2. **Optional Barrier Material – Backer Rod:** The backer rod shall be a heat resistant material compatible with the crack sealant and acceptable to the manufacturer of the sealant. No bond or reaction shall occur between the sealant and the rod. It shall be of a non-water absorbent material and shall not melt or shrink when hot sealant is poured on it.

The backer rod shall have a maximum of 5% absorption when immersed in water for 24 hours with the ends sealed. The backer rod shall be of such a size that compression is required for installation in the crack, so that it maintains its position during the sealing operation. Backer rod shall be dry.

3. **Optional Barrier Material – Hot Mix Asphalt (HMA):** Any HMA placed in the bottom of a crack between 1.5 and 2 inches wide shall be HMA S0.25 Traffic Level 2 and shall meet all requirements of Section 4.06 - Bituminous Concrete.

The Contractor must submit to the Engineer all Material Safety Data Sheet documents from the material manufacturer(s) prior to the commencement of work. During work progress, the Contractor must submit to the Engineer the manufacturer’s Material Certificate for compliance to applicable specifications for each batch or lot of material utilized on the Contract.

**Construction Methods:** The crack sealing operation shall proceed in accordance with the requirements of the “Prosecution and Progress” specifications.

1. **Equipment:** The equipment used by the Contractor shall include, the following:

- a. **Melter Applicator:** The unit shall consist of a boiler kettle equipped with pressure pump, hose, and applicator wand; the boiler kettle may be a combination melter and pressurized applicator of a double-boiler type with space between the inner and outer shells filled with heat transfer oil. Heat transfer oil shall have a flash point of not less than 600°F. The kettle shall include a temperature control indicator. The kettle shall be capable of maintaining the crack seal material at the manufacturer's specified application temperature range. The kettle shall include an insulated applicator hose and application wand. The hose shall be equipped with a shutoff control. The kettle shall include a mechanical full sweep agitator to provide continuous blending. The unit shall be equipped with thermometers to monitor the material temperature and the heating oil temperature. The unit shall be equipped with thermostatic controls that allow the operator to regulate material temperature up to at least 425°F.
  - b. **Application Wand and Squeegee Applicator:** The material shall be applied with a wand followed by a squeegee applicator. The squeegee applicator shall be of commercial/industrial quality designed with a "U" shaped configuration. It shall be of a size adequate to strike off, flush with the surrounding pavement surface and without overflow around the sides, all crack seal material placed. This tool shall be either attached to the applicator wand or used separately as its own long handled tool.
  - c. **Hot Air Lance:** The unit shall be designed for cleaning and drying the pavement surface cracks. Minimum compressed air capacity shall be 100 psi. The compressed air emitted from the tip of the lance shall be capable of achieving a temperature of at least 1500°F.
  - d. **Vertically Mounted Power Driven Wire Brush:** This tool shall be used to remove any dirt, debris, or vegetation to the depths specified that cannot be removed by the hot air lance. It shall be of adequate size and power to remove all material from cracks as specified.
2. **Weather Requirements:** Work shall not be performed unless the pavement is dry. No frost, snow, ice, or standing water may be present on the roadway surface or within the cracks. The ambient temperature must be 40°F and rising during the field application operations for work to proceed.
  3. **Material Mixing Procedure:** The prepackaged material shall be added to the melter applicator in the presence of the Engineer. It shall then be mixed and heated to the recommended application temperature. The crack seal material shall never exceed 400°F.
  4. **Determination of Cracks to be Sealed:** The width and depth requirements for cracks to be sealed are as follows:

All crack width determinations shall be made by measuring the crack width flush at the surface of the pavement prior to being sealed. A straightedge shall be used whenever necessary to establish the location or limits of the flush surface of the pavement.

All cracks from  $\frac{1}{8}$  inch up to 1.5 inches wide shall be prepared and sealed as stated below. Cracks that are between  $\frac{1}{8}$  inch and 1.5 inches wide, but eventually taper in width below

the minimum  $\frac{1}{8}$  inch, shall also be prepared and sealed as stated below. Only cracks that are less than  $\frac{1}{8}$  inch wide throughout their entire length shall be excluded.

Transverse cracks, where a portion of the crack (50% or less) exceeds a width of 1.5 inches, up to 2 inches, shall also be prepared and sealed as stated below.

All joints to be sealed that are raveled (loss of the pavement surface material) shall be at least  $\frac{1}{2}$  inch in depth at the joint's deepest point. The minimum width of a raveled joint must be  $\frac{1}{2}$  inch. The maximum width of a raveled joint to be sealed is 3 inches.

Any cracks exceeding the width and depth requirements specified above shall be repaired using separate items.

5. Crack Preparation: Cracks to be sealed shall be treated with a hot air lance prior to application of the crack seal material. Two (2) passes minimum shall be made with the hot air lance. The hot air lance operation shall proceed at a rate no greater than 120 feet per minute. There shall be no more than 10 minutes between the second hot air lance treatment and the material application.

The use of the hot air lance is not intended to heat the crack. It is to be used to blow all debris from the crack to the depths specified below and to remove any latent moisture from the crack until the inside of the crack is completely dry as determined by the Engineer. "Moisture" does not include standing water. The hot air lance is not to be used to boil off or blow standing water from the bottom of a crack. If standing water is present in the bottom of any crack, the sealing operation shall be postponed until such time that the standing water evaporates naturally. The Contractor may use compressed, oil-free air (not heated) to blow standing water from a crack to help accelerate the natural evaporation process. If standing water remains after using compressed air, the crack shall be allowed to dry naturally until remaining standing water evaporates. The hot air lance shall be used after visible water has evaporated. If a crack is already completely dry as determined by the Engineer, the hot air lance shall be operated at its lowest temperature possible.

The hot air lance is to be used to blow all debris from cracks (not including raveled joints) to a depth of at least  $\frac{3}{4}$  inch for cracks between  $\frac{1}{8}$  inch and  $\frac{3}{4}$  inch wide, and to a depth of 1.25 inches for cracks between  $\frac{3}{4}$  inch and 2 inches wide. The hot air lance shall be used to blow all debris from raveled joints to a depth of 1 inch or the full depth of the joint, whichever is smaller.

In the event that cracks are packed tightly with debris, dirt, vegetation, or other material, except previously placed sealant or filler, the Contractor shall use a vertically mounted power driven wire brush to remove all material and burnish the sides of the crack to the depths specified above. Cracks treated with the power driven wire brush shall subsequently be treated with a hot air lance as described in this section. The use of both the power driven wire brush and the hot air lance shall result in the complete removal of all material in the crack (except previously placed sealant or filler) to the depths specified above such that the sides of the crack are completely free and clean of any debris and moisture.

In the event that cracks have depths greater than 2 inches below the pavement surface, the Contractor may place a barrier composed of backer rod as specified herein. The backer rod

shall be placed in a manner leaving 1.25 inches below the elevation of the pavement surface for crack seal material. Use of backer rod will not be allowed for cracks wider than 1.5 inches or less than ½ inch wide. For cracks between 1.5 and 2 inches wide, HMA S0.25 Traffic Level 2 may be placed in the bottom of the prepared crack. HMA shall be placed and compacted with a steel T-bar approved by the Engineer in a manner leaving 1.25 inches below the elevation of the pavement surface for crack seal material.

6. Crack Sealing: As soon as cracks have been prepared, they shall be filled to refusal along their entire length with the crack sealant material. The treatment material shall be maintained at the manufacturer's specified/recommended application temperature range at all times. The sealing operation shall be suspended if the temperature of the crack seal material falls outside the specified temperature range and shall remain suspended until the crack seal material is brought within the specified temperature range. Sealed cracks are to be squeegeed immediately following application of the crack seal material, striking excess sealer flat to the adjacent pavement surface. There shall be no build-up of treatment material above or adjacent to the crack at any time. If the initial application of crack sealant material fails to fill the crack or shrinks upon cooling such that there is a depression formed of at least ¼ inch or greater, a second application of sealant shall be placed over the first application.
7. Protection of Sealed Cracks: Traffic shall not be permitted on the pavement until the crack seal material is set so that the material does not track and is not deformed or pulled out by tires. If the work under this item is being performed prior to placing a hot mix overlay or other surface treatment, a detackifier or blotting agent will not be allowed. If work under this item is not followed by placement of an overlay of any kind, a detackifier or blotting agent may be used. If a detackifier or blotting agent is used, it shall be one recommended by the supplier of the crack seal material and shall be used as recommended by the supplier, except that no paper, cotton, or other organic materials shall be allowed. Information on the type and usage of a detackifier or blotting agent shall be presented to the Engineer for their written acceptance prior to use.
8. Removal and Disposal of Material: All debris generated from the operations described above shall be removed from the roadway by the Contractor.

Treatment material remaining in the Contractor's kettle at the close of the daily work session shall be discarded. At no time shall treatment material be re-heated for use in subsequent crack sealing applications unless permitted by the Engineer following a review of specific circumstances.

All debris and surplus treatment material shall be properly disposed in accordance with Article 1.10.03 of ConnDOT Form 818 and State of Connecticut law.

9. Acceptance of Work: When work is complete, an inspection shall be scheduled with the Engineer. The Engineer will note all deficiencies including, areas exhibiting adhesion failure, cohesion failure, tracking of sealant material, and missed cracks. Work identified by the Engineer as not acceptable shall be repaired at the Contractor's expense. The Contractor shall notify the Engineer upon completion of any corrective work performed.

## **ITEM #0406303A - SAWING AND SEALING JOINTS**

**Description:** Work under this section shall consist of making a straight-line saw cut transversely across the final lift of HMA pavement. The sawing and sealing of joints shall be completed for HMA pavements with a total depth of 3 inches or greater. The saw cut shall be immediately cleaned and sealed with a joint seal material. The sawing and sealing shall commence within one week of the completion of the final lift of pavement and be a continuous operation until all joints have been completed.

**Materials:** Joint sealer conforming to the requirements of AASHTO M324 Type II. Material that is heated or cooled beyond the manufacturer's recommended temperature range shall be discarded.

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

- a) Kettle: The unit shall be a combination melter and pressurized applicator of a double-boiler type with space between the inner and outer shells filled with oil or other material not having a flash point of less than 600°F. The kettle shall include a temperature control indicator and mechanical agitator. The kettle shall be capable of maintaining the material at a temperature within 15°F of the manufacturer's recommended temperature.
- b) Compressor: The compressor shall have a sufficient capacity and length of hose to enable a continuous sealing operation.
- c) Saw: The saw shall be capable of providing a straight-cut of uniform depth and width.

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

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

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

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

**Acceptance of Work:** Work identified by the Engineer as not acceptable shall be re-done at the Contractor's expense. The Contractor shall notify the Engineer upon completion of required corrective work.

## **ITEM #0601088A - CONCRETE FORM LINERS**

**Description:** Work under this item shall consist of furnishing, installing and removing concrete form liners that will be used to produce a simulated stone facing on the exposed faces of the cast-in-place concrete, wingwalls, and end blocks as shown on the plans, as directed by the Engineer and in accordance with these specifications. All form lined concrete surfaces shall be stained.

**Materials:** The concrete form liner shall conform to:

Pattern No. 1352 North East Dry Stack from Concrete Rock Surfaces, LLC, Bethel, Connecticut or pattern #1203 "New England Dry Stack" from Custom Rock International, Inc., St. Paul, Minnesota, as distributed by Connecticut Bomanite Systems, inc., Newtown, Connecticut  
or approved equal.

Color Stain – Concrete Stain shall be recommended by the Engineer, but final selection of the stain will be by the Town of Mansfield.

Color Stain shall be a special penetrating stain mix as provided by the manufacturer, shall achieve color variations present in then natural stone being simulated by the pattern selected for the project. The stain shall create a surface finish that is breathable (allowing water vapor transmission), and that resists deterioration from water, alkali, fungi, sunlight or weathering. The stain shall be a water borne, low V.O.C. material less than 180 grams/liter, and shall meet requirements for weathering resistance – 2000 hours accelerated exposure in accordance with the 3-bulb test of ASTM G23, scrub test – 100 revolutions, abrasion resistance (Tabor CF-10) – 500 cycles, adhesion – 1.00 mm cross cuts on glass pass 3 or higher on a scale of 1 to 5 in accordance with ASTM D3359. chemical resistance – ASTM D1308.

Form Liners – The form liners shall be reusable, made of high-strength urethane and not compress more than 3/16" when concrete is poured at a rate of 10 vertical feet per hour. All form liners for the project shall be from a single supplier.

Release Agent – The release agent shall be compatible with the form liners as recommended by the manufacturer.

Form Ties – The form ties shall be designed to separate at least 1 inch back from the finished surface, leaving only a neat hole that can be plugged with patching material. Patching material shall be Portland Cement Mortar (Class S).

**Construction Methods:** The Contractor shall submit the following for approval by the Engineer prior to beginning the forming 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, weep-hole locations, 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 50 square feet, or larger if needed to adequately illustrate the pattern selected.
2. The test pattern shall contain an area demonstrating stone masonry butt joint and the continuation of the pattern through an expansion joint.
3. The test panel shall include staining as may be required for the selected pattern.
4. Upon completion of the Test Panel, the Engineer along with a representative of the Town of Mansfield shall review the constructed test panel for the form liner pattern, stain used and the overall aesthetics and provide approval of the pattern and the stain to the Contractor before the form liner is used for the construction of the wingwalls and the end blocks.
5. The test panel shall be removed when it is no longer needed, to the satisfaction of the Engineer.

General: The manufacturer of the simulated stone form liners and custom coloring systems shall demonstrate at least three (3) years of experience making custom simulated stone form liners and color stains to create formed concrete surfaces to match natural stone shapes, surface textures and colors. Evidence and color pictures of projects actually constructed over the last three years shall be submitted prior to approval.

The contractor or subcontractor who is to install the form liners and perform the work shall demonstrate at least three (3) years of experience placing vertically formed architectural concrete, including training in the manufacturer's special techniques as may be required in achieving realistic surfaces.

An authorized representative from both the form liner manufacturer and the color stain manufacturer (if floor 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 to coordinate the work. Included for attendance



shall be the manufacturer's authorized representatives, the Contractor, the subcontractor (installer), and 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 such that there is 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 maybe 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 them 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 brushed 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 greater than 3/8" in greatest principal dimension shall be filled with concrete patching material such as Tamms Speed-crete (or equal) mixed with latex or acrylic bonder, as approved by the manufacturer and Engineer. All honeycombed areas shall be filled and textured to match surrounding areas. Seam lines and other unnatural protrusions shall be ground down 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 his 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 laitance, dirt, oil and other objectionable materials. After the wall had 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 and falling.

All staining work shall be scheduled after adjacent earth work is completed to avoid contamination or damaging the surface. Top soil, riprap, backfill, etc. shall be placed after staining is complete and approved.

## **ITEM #0601132A - 8' X 6' PRECAST CONCRETE BOX CULVERT**

**Description:** Work under this item shall consist of designing, furnishing and installing a precast concrete box culvert, constructed of four sided, reinforced, monolithically precast concrete sections with open ends, in accordance with the details shown on the plans, in accordance with these specifications and as ordered by the Engineer.

**Materials:** The precast concrete shall meet the requirements of Subarticle M.14.01-1. of ConnDOT Form 818.

The concrete mix design shall be submitted to the Engineer and shall attain a minimum compressive strength ( $f'c$ ) of 5,000 psi and a minimum electrical resistivity of 29 k $\Omega$ -cm in accordance with AASHTO T 358 at 28 days.

All reinforcing steel, including dowel bar mechanical connectors, shall be galvanized and meet the requirements of Subarticle M.06.01 of ConnDOT Form 818.

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 as shown on the plans.

Gaskets shall be flexible, expanded rubber conforming to ASTM D1056.

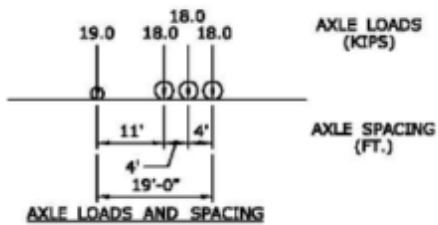
Non-shrink grout shall conform to Subarticle M.03.5 of ConnDOT Form 818, except that the non-shrink grout shall attain a minimum compressive strength of 3000 psi prior to allowing the passage of water over the grout.

### **Construction Methods:**

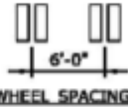
1. Design and **Load Rating:** The design of the precast concrete box culvert shall conform to the requirements of the latest edition of the AASHTO LRFD Bridge Design Specifications, including the latest interim specifications, as supplemented by ASTM C1577 and amended as follows:

- In addition to the HL-93 design live load, the precast concrete box culvert shall be designed to carry the legal and permit live loads shown in Figure 1.
- The precast concrete box culvert shall be designed for all construction load effects that may be applied during all stages/phases of construction.
- The precast concrete box culvert shall be designed for the load effects resulting from all current and future finished grading conditions shown on the plans.
- The precast concrete box culvert shall be designed to have an adequate stiffness to limit the deflection, due to the design live load, to no greater than 1/800 of the span (clear distance between the inside face of walls).
- The minimum side wall length of any box culvert section (skewed or straight) shall be 4'-0"

- The reinforcement in box culvert sections skewed greater than  $15^\circ$  shall be deformed steel bars. The use of welded wire fabric in these skewed sections is not permitted. Bar reinforcement in the roof and floor of skewed end of these box culvert sections shall be placed parallel to the skewed end and splayed/fanned along the section until it is oriented normal to the centerline of the section.



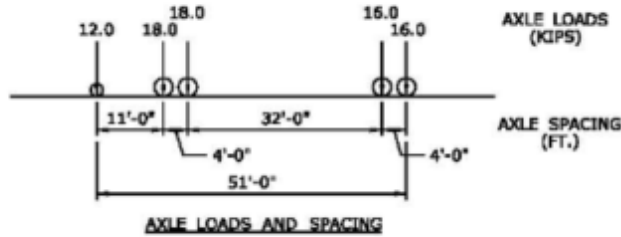
AXLE LOADS AND SPACING



WHEEL SPACING

NOTE: CT- L73.0 REPRESENTS THE CONSTRUCTION VEHICLE DESCRIBED IN SECTION 14-269(d) OF THE CT GENERAL STATUTES

**CT-L73.0 LEGAL LIVE LOAD VEHICLE**  
73 KIPS ON 4 AXLES



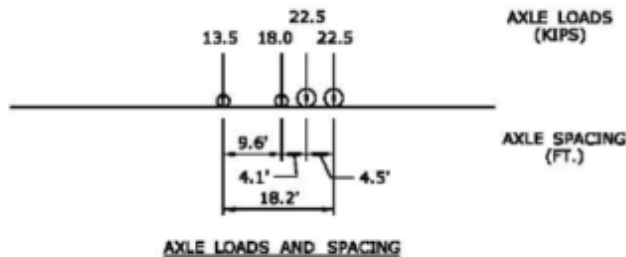
AXLE LOADS AND SPACING



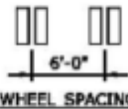
WHEEL SPACING

NOTE: CT- L3S2 REPRESENTS THE VEHICLE DESCRIBED IN SECTION 14-267A(b)(8) OF THE CT GENERAL STATUTES

**CT-L3S2 LEGAL LIVE LOAD VEHICLE**  
80 KIPS ON 5 AXLES



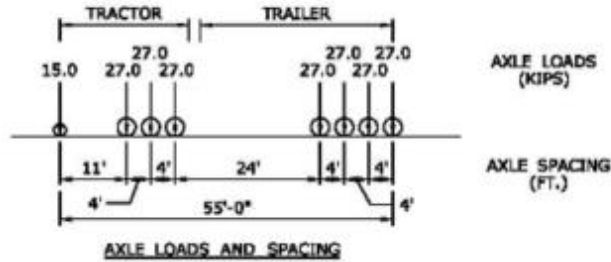
AXLE LOADS AND SPACING



WHEEL SPACING

**CT-P76.5 PERMIT LIVE LOAD VEHICLE**  
76.5 KIPS ON 4 AXLES

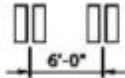
**FIGURE 1**



AXLE LOADS (KIPS)

AXLE SPACING (FT.)

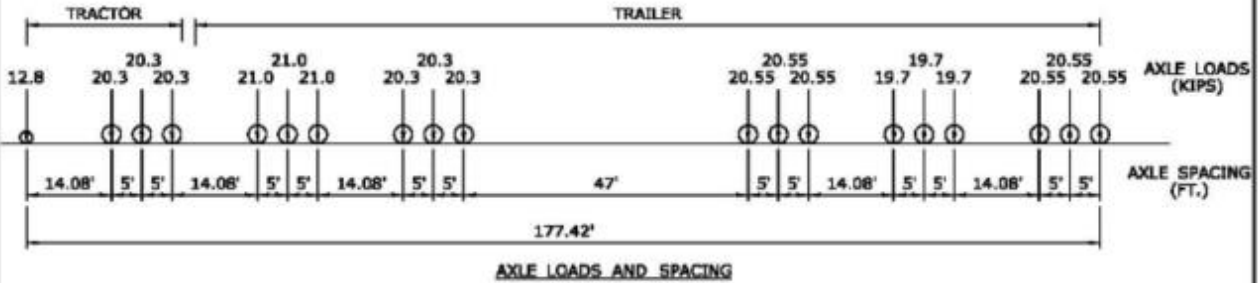
AXLE LOADS AND SPACING



WHEEL SPACING

NOTE: CT-P204 IS A NOTIONAL VEHICLE

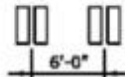
**CT-P204 PERMIT LIVE LOAD VEHICLE**  
204 KIPS ON 8 AXLES



AXLE LOADS (KIPS)

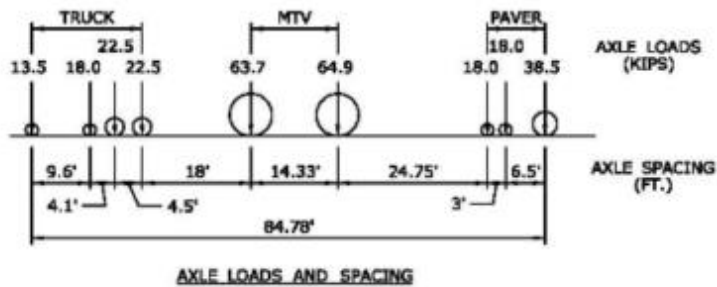
AXLE SPACING (FT.)

AXLE LOADS AND SPACING



WHEEL SPACING

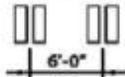
**CT-P380 PERMIT LIVE LOAD VEHICLE**  
380 KIPS ON 19 AXLES



AXLE LOADS (KIPS)

AXLE SPACING (FT.)

AXLE LOADS AND SPACING



WHEEL SPACING

NOTE: TLC = TRI-LOAD COMBINATION OF VEHICLES IN PAVING TRAIN

**CT-TLC PERMIT LIVE LOAD VEHICLE**  
279.6 KIPS ON 9 AXLES

**FIGURE 1**

Design, legal and permit vehicle live load ratings shall be prepared for each box culvert.

The live load ratings shall be prepared and submitted in accordance with the Chapter 7 of the Department's Bridge Inspection Manual amended as follows:

- Live load ratings shall be computed in accordance with the load and resistance factor rating (LRFR) method described in the AASHTO Manual for Bridge Evaluation (AASHTO MBE).
- In the event of conflict between live load rating requirements and procedures outlined in the Bridge Inspection Manual with those of the AASHTO MBE, the AASHTO MBE shall govern.

Live load ratings for each box culvert shall be prepared in accordance with the requirements of AASHTO MBE Table 6A.4.2.2-1 for all limit states, including all optional checks.

For strength I and II limit states, the live load ratings shall be prepared for the live loads, the load factor criteria and analysis parameters shown in Table 1.4.4-1. The average daily truck traffic (ADTT), in one direction, used to determine load factors shall be greater than 5000. The value of the condition factor used in the rating analysis shall be 1.00. The value of the system factor used in flexural, axial and shear rating analysis shall be 1.00. The dynamic load allowance shall conform to the AASHTO MBE. The minimum acceptable rating factors shall be no less than the values shown in Table 1.4.4-1.

For service I limit states, the live load ratings shall be prepared for the live loads, the load factor criteria and analysis parameters shown in Table 1.4.4-2. The live load distribution and dynamic load allowance shall conform to the AASHTO MBE, unless noted otherwise. The minimum acceptable rating factors shall be no less than the values shown in Table 1.4.4-2.

**Table 1.4.4.-1 – Strength Limit States**

Rating Procedure	Live Load Vehicle	Load factor criteria and analysis parameters	Minimum Acceptable Rating Factor (RF)
Design Load Rating	H-93	Evaluation Level - inventory	1.00
Design Load Rating	H-93	Evaluation Level - operating	Report value
Legal Load Rating	CT-L73.0	Load Factor: use AASHTO MBE Table 6A.4.5.4.2a- 1 Permit Type: Routine or Annual Frequency: Unlimited Crossings Loading Condition: Mix with traffic Distribution Factor: Two or more lanes	1.00
Legal Load Rating	CT-L3S2	Load Factor: use AASHTO MBE Table 6A.4.5.4.2a- 1 Permit Type: Routine or Annual Frequency: Unlimited Crossings Loading Condition: Mix with traffic Distribution Factor: Two or more lanes	1.00
Permit Load Rating	CT-P76.5	Load Factor: use AASHTO MBE Table 6A.4.5.4.2a- 1 Permit Type: Routine or Annual Frequency: Unlimited Crossings Loading Condition: Mix with traffic Distribution Factor: Two or more lanes	1.00
Permit Load Rating	CT-P204	Load Factor: use AASHTO MBE Table 6A.4.5.4.2a-1 Permit Type: Routine or Annual Frequency: Unlimited Crossings Loading Condition: Mix with traffic Distribution Factor: Two or more lanes	1.00
Permit Load Rating	CT-P380	Load Factor: use AASHTO MBE Table 6A.4.5.4.2a-1 Permit Type: Special or Limited Crossing Frequency: Single Trip Loading Condition: Escorted with no other vehicles on the bridge Distribution Factor: One lane ADTT: N/A	1.00
Permit Load Rating	CT-TLC	Load Factor: use AASHTO MBE Table 6A.4.5.4.2a- 1 Permit Type: Special or Limited Crossing Frequency: Single trip Loading Condition: Mix with traffic Distribution Factor: One lane Dynamic Load Allowance: 0.00	1.00



**Table 1.4.4-2 - Service Limit States**

Rating Procedure	Live Load Vehicle	Load factor criteria and analysis parameters	Minimum Acceptable Rating Factor (RF)
Design Load Rating	HL-93	Evaluation Level — inventory Load Factor: use AASHTO MBE Table 6A.4.2.2. 1	1.00
Design Load Rating	HL-93	Evaluation Level— operating Load Factor: use AASHTO MBE Table 6A.4.2.2.1	Report value
Legal Load Rating	CT-L73.0	Load Factor: use AASHTO MBE Table 6A.4.2.2. 1	1.00
Legal Load Rating	CT-L3S2	Load Factor: use AASHTO MBE Table 6A.4.2.2. 1	1.00
Permit Load Rating	CT-P76.5	Load Factor: use AASHTO MBE Table 6A.4.2.2. 1	1.00
Permit Load Rating	CT-P204	Load Factor: use AASHTO MBE Table 6A.4.2.2. 1	1.00
Permit Load Rating	CT-P380	Load Factor: use AASHTO MBE Table 6A.4.2.2. 1 Distribution Factor: One lane	1.00
Permit Load Rating	CT-TLC	Load Factor: use AASHTO MBE Table 6A.4.2.2.1 Distribution Factor: One lane Dynamic Load Allowance: 0.00	1.00

All software used to compute the live load ratings shall be pre-approved by the Department. The live load rating may be computed using the latest versions of the following software:

- Virtis
- STAAD
- MathCad
- Excel
- CANDE-2007
- BXLRFD

CANDE-2007 and BXLRFD are stand alone software programs.

CANDE-2007 is a Culvert Analysis and Design program developed under NCHRP Project 15-28. CANDE-2007 is available for no cost. Additional information about this program can be found on the internet at the following address:

<http://144.171.11.40/cmsfeed/TRBNetProjectDisplay.asp?ProjectID=408>

BXLRFD is a LRFD Box Culvert Design and Rating program developed by the Pennsylvania Department of Transportation (PennDOT). Additional information about this program can be found on the internet at the following address:

<http://penndot.engrprograms.com/home/>

All design and analysis with CANDE-2007 shall be performed using Solution Level 2, an automated finite element solution.

- 1. Working Drawings, Design Computations and Load Rating Submittals:** Prior to fabrication, the Contractor shall submit working drawings and design computations for each box culvert, crane placement(s), pick radii, and any rail system used for sliding of segments into place to the Engineer for review in accordance with Article 1.05.02 of ConnDOT Form 818. An individual, independently packaged set of working drawings and computations, with all details and documents necessary for fabrication and erection, including a copy of the certificate of insurance, shall be prepared and submitted for each box culvert. The working drawings and computations shall be prepared in Customary U.S. units.

The packaged set of working drawings and computations for each box culvert shall be submitted either in paper (hard copy) form or in an electronic portable document format (.pdf) with appropriate bookmarks. The packaged set submitted in paper form shall be bound with a staple. The packaged set submitted in an electronic portable document format (.pdf) shall be in an individual file. The packaged set shall include the following:

- title sheet
- table of contents
- contact information for designer and fabricator — contact information should include name and address of each firm and the name of contact person with phone number and email address
- copy of the certificate of insurance
- box culvert working drawings
- box culvert design computations and supporting data

The working drawings and design computations shall be signed, dated, and sealed by a Professional Engineer licensed in the State of Connecticut, who shall also be available for consultation in interpreting their computations and drawings, and in the resolution of any problems which may occur during the performance of the work. Each working drawing shall be

signed, dated, and sealed. The cover/first sheet for the computations shall be signed, dated, and sealed.

Working drawings submitted in paper form shall be printed on ANSI B (11" x 17"; Ledger/Tabloid) sheets. Each drawing shall have a border and title block. Located in the lower right hand corner of the drawing adjacent to the title block, each drawing shall have a rectangular box, 2 1/4" wide x 1 1/4" high, for the reviewers stamp. On the ANSI B sheets, the minimum text height and width shall be 1/16". All letter characters shall be uppercase. Design computations, procedures and other supporting data shall be submitted on 8 1/2" x 11" (Letter) sheets.

Working drawings submitted in an electronic portable document format (.pdf) shall be created on ANSI D (22" x 34") full scale (1" electronic file = 1" paper) sheets. (The purpose of creating the drawings on ANSI D sheets is so that the sheets may be printed/plotted at that size or smaller without loss of legibility.) Each drawing shall have a border and title block. Located in the lower right hand corner of the drawing adjacent to the title block, each drawing shall have a rectangular box, 2 1/4" wide x 1 1/4" high, for the reviewers stamp. On the ANSI D full scale sheets, the minimum text height and width shall be 1/8". All letter characters shall be uppercase. The electronic files for the design computations, procedures and other supporting data shall be created on ANSI A (8 1/2" x 11") letter sheets.

The working drawings shall include complete details of the precast concrete box culvert. The drawings shall include, but not be limited to the following:

- Project number, town and crossing
- Layout plan of the precast box culvert. The plan shall include the dimensions of each box culvert section. The length of each box culvert section shall be determined by the Contractor and shall satisfy the stages of construction, sequence of construction, and construction methodology shown on the plans. When installed, the combined length of the box culvert sections shall equal the total length of the box culvert shown on the plans.
- Plans and cross-sections of the box culvert sections detailing the length, width, height and thickness of walls and slabs.
- Type, size, location and spacing of steel reinforcing, mechanical connectors, and concrete inserts for anchoring threaded deformed steel bars. Provide bending diagrams, material lists and catalog cuts for mechanical connectors and inserts as applicable.
- Crane placement plans detailing pick radii of each individual precast segment, including crane load charts.
- Calculations for any rail system utilized for sliding precast segments into place.

- Type, size and location of lifting holes and seating fixtures. All fixtures (inserts, etc.) cast permanently into the sections shall be recessed a minimum of  $\frac{3}{4}$ ". No more than four lifting holes or fixtures shall be located in each box section.
- Location and size of all holes cast for grouting deformed steel bars or other reasons as noted on the plans.
- Complete details of the lap joints at the end of the box sections, which shall include the type, size and location of gaskets and additional steel reinforcement. Except where shown otherwise, the ends of the box sections shall have lap joints with not less than  $1\frac{1}{2}$ " of concrete overlap. Each joint shall be provided with a preplaced gasket.
- Material specifications/designations for all components

The design computations and load ratings shall include, but not be limited to the following:

- Project number, town and crossing
- References to design specifications, including interim specifications
- Diagrams identifying all members and load conditions and combinations
- Descriptions for each notation used, and references to applicable specification sections and articles
- Bending moment and shear diagrams
- Section specific computations for box culvert sections skewed greater than  $15^\circ$
- Computations for reinforcing development lengths and diagrams identifying splice locations
- Complete tabulated results from all load conditions and load combinations.
- Electronic copies of STAAD, CANDE-2007, or BXLRFD input files
- Electronic unprotected copies of MathCad and Excel files
- Results of live load ratings tabulated on a summary sheet for each box culvert

The Contractor shall submit the packaged set of working drawings and calculations to the "Engineer of Record". The "Engineer of Record" is identified in the signature block on the structural contract plans. A copy of the transmittal shall be sent to the District Construction office administering the project.

The reviewed and stamped working drawings and calculations shall be sent by the reviewer, along with a recommendation regarding acceptance, to the District Construction office for review, comment and distribution. After the District Construction office has reviewed the working drawings and calculations, ensured all comments have been addressed and have found the submittal to be acceptable, in addition to distributing copies of the working drawings and calculations to the Contractor and District offices, a copy of each packaged set of working drawings and calculations shall be sent to the following:

Bridge Safety and Evaluation  
Research and Materials Engineer  
of Record

**2. Fabrication and Manufacture:** The fabrication and manufacture of the precast concrete box culvert shall conform to the latest edition of the AASHTO LRFD Bridge Design Specifications, including the latest interim specifications, as supplemented by ASTM C1577 and the following:

3-1. **Forms and Forming Material:** Forms shall be mortar-tight and sufficiently strong to prevent misalignment of adjacent precast sections. Forms shall be constructed to allow their removal without damage to the concrete. A positive means of supporting reinforcing cages in place during forming shall be required.

The forms shall not be removed until the concrete is sufficiently strong to avoid possible damage to the concrete. Forms shall not be removed without approval being granted by the Engineer. Damage to the concrete due to early removal of the forms shall be cause for rejection.

All forming materials used for casting cylindrical openings for lifting holes or holes for grouting deformed steel bars shall be removed. All non-plastic material used as forms for casting weepholes shall also be removed.

**3-2. Concrete Mix:** The Contractor shall design and submit to the Engineer for review a concrete mix that shall attain a minimum 28-day compressive strength,  $f'_c$  of 5,000 psi.

**3-3. Reinforcement Steel:** Shall be subject to the provisions of Articles 6.02.03-2 through 6.02.03-8 of ConnDOT Form 818. The welding of reinforcement, unless specifically indicated in the Plans, shall not be permitted.

**3-4. Placing Concrete:** Concrete shall not be deposited in the forms until the Engineer has verified the presence and proper location of the reinforcing steel and other components and has given his approval thereof.

Concrete shall not be deposited into the forms when the ambient temperature is below 40° F or above 100° F, unless adequate heating or cooling procedures are provided and have been previously approved by the Engineer. The concrete temperature shall be within the range of 60° F to 90° F at the time of placement.

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

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

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

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

3-5. Test Cylinders: During the casting of the sections, the Contractor shall make test cylinders under the supervision of a representative of the Department. A minimum of 4 cylinders shall be taken during each production run or as ordered by the Engineer. The dimensions and type of cylinder mold shall be as specified by the Engineer. Cylinders shall be cured under the requirements of ASTM C31 and shall be used to determine the 28 day compressive strength requirements ( $f'_c$ ). The Engineer also reserves the right to request and test core specimens from the sections to determine their adequacy.

**3-6. 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 Subarticle 6.01.03-21 of ConnDOT Form 818.

**3-7. Handling and Storage:** Care shall be taken during storage, transporting, hoisting and handling of all box sections to prevent damage. Sections damaged by improper storing, transporting or handling shall be repaired or replaced by the Contractor, as directed by the Engineer and at no cost to the Department. All storage and handling operations shall be as directed by the Engineer. The box sections shall not be shipped to the job site until the 28 day strength ( $f'_c$ ) has been attained.

**3-8. Repairs:** The Engineer shall evaluate the acceptability and the cause of the defects and the service condition of the box section. No repairs shall be done by the Contractor unless permission has been granted by the Engineer. The Contractor shall submit to the Engineer, for review, the proposed methods and materials to be used in the repair operation. All repairs shall be sound and properly finished and cured before the box section is delivered to the job site. The Contractor shall bear the costs of all repair work.

**3. Installation:** The installation of the precast concrete box culvert shall conform to the following requirements:

The installation of the precast concrete box culvert sections shall proceed as required by the sequence of construction, stage construction plans, and the special provisions entitled "Prosecution and Progress".

The box sections shall be placed in a manner to best accommodate and facilitate the construction or installation of all adjacent structures including cut-off walls, headwalls, return walls, and wingwalls. No box sections shall be set on cast-in-place concrete without the approval of the Engineer.

The box sections shall be set to the line and grade indicated on the plans or as directed by the Engineer. Placement of the sections shall not start until the Engineer has approved the depth of excavation and the suitability of the foundation material.

The lap joints shall be securely seated together to achieve a silt-tight joint all around. A silt-tight joint is defined as a joint in which the gasket is compressed to a minimum of one half of its uncompressed width. The gasket shall be uniformly compressed along all vertical and horizontal surfaces. A positive means, through the use of seating devices, shall be used for pulling one section against another to assure an adequate silt-tight joint.

Details for the seating method shall be submitted to the Engineer for review. The lap joints shall be seated such that they make a continuous line of sections with a smooth interior free from irregularities in the invert line.

The top portions of the horizontal lap joints for the roof and floor slabs and the outside face of the vertical lap joints (full height on each side) shall be neatly filled with non-shrink grout after seating the sections. The exposed portions of the lap joints within the haunches or fillets shall also be neatly filled with non-shrink grout. The finished surface shall be smooth and level with the adjacent concrete.

The box sections for multiple barrel culverts shall be placed as detailed on the plans. Slight mismatches along the 1" longitudinal joint may be tolerated by the Engineer provided that the vertical difference between the top surfaces of adjacent sections is 1" or less. The top 2" of the longitudinal joint shall be filled flush with non-shrink grout. The top surface of the non-shrink grout shall be sloped to form a smooth transition to correct any allowable mismatches.

After its installation, any box section or joint that is, 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 no additional cost to the State.

All fixtures or holes cast into the sections for lifting or seating shall be neatly filled with non-shrink grout. The finished surface shall be smooth and level with the adjacent concrete. The surface preparation, mixing, placing, curing, and finishing of the non-shrink grout shall conform to the written instructions provided by the manufacturer of the grout. The Contractor shall furnish the Engineer with copies of the instructions. The grout shall be cured at least 1 day unless determined otherwise by the Engineer.



## **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, in accordance with this specification and as directed by the Engineer. Work shall also include conditioning of the surface to be coated and all quality-control testing noted herein.

The completed membrane system shall be comprised of a primer coat, two layers of the 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, reinforcing material at deck panel joints and two applications of asphalt emulsion (tack coat) at a rate of 0.05-0.07 gal/s.y. each, allowing the first application to break prior to applying the second.

**Materials:** The Contractor shall select a waterproofing membrane system from the Department's current Qualified Product List (QPL) for Spray-Applied Membrane Waterproofing System. All materials incorporated in the works shall meet the Manufacturer's specification for the chosen system. The Engineer will reject any system that is not on the QPL.

Reinforcing material shall be as recommended by the manufacturer.

Materials Certificate: The Contractor shall submit to the Engineer a Materials Certificate for the primer, membrane and aggregate in accordance with the requirements of Article 1.06.07 of ConnDOT Form 818.

**Construction Methods:** At least 30 days prior to installation of the membrane system, the Contractor shall submit to the Engineer a Site-specific Installation Plan that includes the manufacturer's recommended procedure for preparing the deck surface, pre-treatment or preparing at cracks and gaps, treatment at curbs, vertical surfaces or discontinuities, applying the primer and membrane, placing of aggregated coat and all Quality Control (QC Plan) testing operations to be performed during the membrane system's installation. Procedures shall also include recommended repairs of system non-compliant issues identified during application. The system shall be applied to the prepared area(s) as defined or shown in the plans, strictly in accordance with the Installation Plan.

A technical representative, in the direct employ of the manufacturer, shall be present on-Site immediately prior to and during application of the membrane. The representative shall inspect and approve the surface prior to priming, and provide guidance on the handling, mixing and addition of components and observe application of the primer and membrane. The technical representative 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.

1. **Applicator Approval:** The Contractor's membrane Applicator shall be fully trained and licensed by the membrane manufacturer and shall have successfully completed at least three spray membrane projects in the past five 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.

2. **Job Conditions:**

(a) **Environmental Requirements:** Air and substrate temperatures shall be between 32°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.

(b) **Safety Requirements:** All open flames and spark producing equipment shall be removed from the work area prior to commencement of application.

"No Smoking" signs shall be visibly posted at the Site during application of the membrane waterproofing.

Personnel not involved in membrane application shall be kept out of the work area.

3. **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 and batch number.

(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 Material Safety Data Sheets (MSDS) 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 shelf life has expired shall be used.

4. **Surface Preparation:**

- (a) Protection: The Applicator shall be responsible for the protection of equipment and adjacent areas from over spray or other contamination. Parapets and bridge joints shall be masked prior to application of the materials.
- (b) Surface Preparation: Sharp peaks and discontinuities 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. Any valley or minor surface deterioration of ½ inch or greater shall also be repaired. The extent and location of surface patches require the approval of the Engineer before the membrane system is applied.

Surfaces shall be free of oil, grease, curing compounds, loose particles, moss, algae, growth, laitance, friable matter, dirt, bituminous products, and previous waterproofing materials. If required, degreasing shall be done by detergent washing in accordance with ASTM D4258.

The surface shall be abrasively cleaned, in accordance with ASTM D4259, to provide a sound substrate free from laitance.

Voids, honeycombed areas, and blow holes on vertical surfaces shall be repaired as indicated in the Installation Plan.

All steel components to receive membrane waterproofing shall be blast cleaned in accordance with SSPC SP6 and shall be coated with the membrane waterproofing system within the same work shift.

5. Inspection and Testing: Prior to priming of the surface, the Engineer, 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," a "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 system's Manufacturer, whichever is less.

- (b) 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 D4541. 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 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.

If the tensile bond strength is lower than the minimum specified, the Engineer may request additional substrate preparation. Any primer not adequately applied shall be removed and new primer applied at the Contractor's expense, as directed by Engineer.

- (c) 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.

#### 6. 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.
  - 4) Membrane application (minimum 2 layers)
  - 5) Membrane with aggregate
- (b) Immediately prior to the application of any components of the System, the surface shall be adequately dry (see Section 5(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.
- (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.

- (g) Membrane and Reinforcing Material: Application of the membrane on the primed surface shall not commence until the primer is cured as described in Section 6(f) of this specification and the adhesion pull tests are completed in accordance with Section 5(b) of this specification.

The waterproofing membrane shall consist of two coats for a total dry film thickness of a minimum 80 mils but not to exceed 120 mils. Adjacent coats shall be of a contrasting color to aid in Quality Assurance and inspection. Any reinforcing material shall be applied immediately before the first coat of membrane in accordance with the Manufacturer's recommendations.

The membrane shall be comprised of Components A and B and a hardener powder which is to be added to Component B in accordance with the Manufacturer's recommendations.

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 tensile bond strength shall be conducted on the membrane in accordance with the requirements of ASTM D4541. 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: If an area is left untreated or the membrane 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 and wiped with solvent (e.g. acetone) up to a width of at least four inches on the periphery, removing any contaminants unless otherwise recommended by the Manufacturer. The substrate shall be primed as necessary, followed by the membrane layers. A continuous layer shall be obtained over the substrate with a four-inch overlap onto existing membrane.

Where the membrane is to be joined to existing cured material, the new application shall overlap the existing by at least four inches. Cleaning and surface preparation on areas to be lapped shall be as recommended in the Manufacturer's written instructions.

- (i) 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) Localized areas not fully coated shall be touched-up with additional membrane and aggregate as needed.
    - 3) Using motorized mechanical sweepers or a vacuum sweeper apparatus, remove all loose and excess aggregate from the surface to the satisfaction of the Engineer and dispose of properly after application prior to allowing traffic onto finished surface or application of tack coat. Any areas not fully coated after sweeping shall be touched up with additional membrane and aggregate as needed.
7. 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.

## **ITEM #0819002A - PENETRATING SEALER PROTECTIVE COMPOUND**

**Description:** Work under this item shall consist of cleaning concrete surfaces of dirt, dust, and debris, and furnishing and applying a clear, penetrating sealer to concrete surfaces where shown on the plans, to provide a barrier against the intrusion of moisture and chlorides. This work also includes furnishing, installing, and removing platforms, scaffolding, ladders, and other means of access as well as shields, as required, to protect adjacent areas and traffic from overspray.

**Materials:** The penetrating sealer shall conform to Article M.03.09 of ConnDOT Form 818. A Materials Certificate shall be submitted for the penetrating sealer in accordance with Article 1.06.07 of ConnDOT Form 818. A product not listed on the Qualified Products List (QPL) may be considered for approval. A Certified Test Report shall be submitted in accordance with Article 1.06.07 of ConnDOT Form 818 indicating that the product being considered conforms to the Test Requirements listed on the QPL.

### **Construction Methods:**

**Submittals:** The Contractor shall submit to the Engineer Safety Data Sheets (SDS), Technical Data Sheets and product literature for the approved sealer. The literature shall include written instructions how to apply the sealer to vertical and horizontal surfaces, and where required, overhead surfaces. Application rate and number of applications of sealer shall be addressed.

The Contractor shall submit to the Engineer, in accordance with Article 1.05.02 of ConnDOT Form 818, written procedures for cleaning the concrete surfaces prior to sealer application. The submittal shall include proposed equipment and materials and shall address how adjacent traffic and other areas shall be protected from dust, debris and overspray during the cleaning and application processes. Where the sealer is to be applied to parapets before pavement is placed, the submittal shall address protection of the deck and curb to which membrane waterproofing will be applied. Should the membrane already be present, the submittal shall address shielding of the membrane. It shall also indicate how vegetation and regulated areas shall be protected from overspray. The submittal shall address the conditions under which work may proceed, including wind speed, temperature and precipitation. It shall also include procedures to be followed to protect the work should unfavorable weather conditions occur before the product has been absorbed.

The Contractor shall inspect the surfaces to be sealed to identify surface cleaning needs before submitting the procedures. The Contractor shall identify concrete surfaces that:

- Need repair
- Require special attention or cleaning procedures
- Have been previously treated with coatings or curing compounds that would hinder penetration of the sealer into the concrete
- Will be new or newly repaired

Written procedures shall include observations listed above. Application of penetrating sealer to new concrete shall be addressed in the application procedures. Forms for surfaces of new concrete to receive penetrating sealer shall not be treated using form release oil, which can inhibit or prevent penetration of the sealer into the concrete.

Surface Preparation: Concrete surfaces to which penetrating sealer will be applied shall be clean and free of grease, oil, and other surface contaminants, including biological growth. Dry surfaces may be cleaned by sweeping with brushes or brooms, and blowing clean with oil-free, compressed air. The Contractor shall take care not to damage the concrete surface finish during cleaning operations. Care shall be taken so that cleaning methods do not damage joint sealant or other components of the structure that are to remain.

Application: Application of the sealer may begin only after the Engineer evaluates the concrete surfaces and determines that conditions for installation comply with the accepted written application procedures.

The sealer shall be applied in accordance with the accepted application procedures at the rate specified by the manufacturer. The Contractor shall monitor and record the number of square feet of concrete surface sealed and the number of gallons of sealer applied over that surface area to verify that the required application rate is being met. A minimum of three applications of sealer shall be assumed to be needed. After the first application of the sealer, curing time shall be recorded and submitted to the Engineer. Additional applications of sealer shall be applied as specified in the application instructions, provided adequate time between applications and appropriate curing of the sealer have occurred. For each application, the Contractor shall record the area and number of gallons of sealer applied as well as the curing time for that application. The Contractor may be directed to apply sealer in up to three separate applications if concrete surfaces readily absorb the previous application.

If the Contractor is directed to apply more than three applications of sealer, the additional applications will be compensated as extra work. Should salts, oil or other visually undesirable materials be evacuated from the concrete by the penetrating sealer and remain on the surface after sufficient rain events have occurred, the Engineer may order surface cleaning of the concrete as extra work.

The Engineer shall be provided access to inspect the concrete surface during application and after the sealer has had adequate time to cure.



## **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 818. The following mix shall be used for this item:

Turf Seed Mix: In order to preserve and enhance the diversity, the source for seed mixtures shall be locally obtained within the Northeast USA including New England, New York, Pennsylvania, New Jersey, Delaware, or Maryland. One approved seed mixture is detailed below. Other proposed mixtures must be approved by the ConnDOT Landscape Design office.

<b><u>Proportion (Percent)</u></b>	<b><u>Species Common name</u></b>	<b><u>Scientific name</u></b>
20	Kentucky Bluegrass	Poa
45	Red Fescue	Festuca rubra improved varieties
35	Perennial Ryegrass	Lolium perenne Improved varieties

**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.