

MASSDOT STANDARD CONTRACT FORM



This form is issued and published by the Massachusetts Department of Transportation (MassDOT or Department). Any changes to the official printed language of this form shall be void. Additional non-conflicting terms may be added by Attachment. Contractors may not require any additional agreements, engagement letters, contract forms or other additional terms as part of this Contract without prior Department approval. Click on hyperlinks for definitions, instructions and legal requirements that are incorporated by reference into this Contract.

CONTRACTOR LEGAL NAME: TOWN OF BOXFORD (and d/b/a):		DEPARTMENT NAME: Massachusetts Department of Transportation MMARS Department Code: DOT	
Legal Address: (W-9, W-4,T&C):		Business Mailing Address: 10 Park Plaza, Boston MA 02116	
Contract Manager:		Billing Address (if different):	
E-Mail:		Contract Manager: Cassandra Gascon	
Phone:	Fax:	E-Mail: Cassandra.gascon@dot.state.ma.us	
Contractor Vendor Code: VC6000191730		Phone: (857) 368-4636	Fax: n/a
Vendor Code Address ID (e.g. "AD001"): AD (Note: The Address Id Must be set up for EFT payments.)		MMARS Doc ID(s):	
		RFR/Procurement or Other ID Number:	

<p style="text-align: center;"><u> </u> NEW CONTRACT</p> <p>PROCUREMENT OR EXCEPTION TYPE: (Check one option only)</p> <p><input type="checkbox"/> Statewide Contract (OSD or an OSD-designated Department)</p> <p><input type="checkbox"/> Collective Purchase (Attach OSD approval, scope, budget)</p> <p><input type="checkbox"/> Department Procurement (includes State or Federal grants 815 CMR 2.00) (Attach RFR and Response or other procurement supporting documentation)</p> <p><input type="checkbox"/> Emergency Contract (Attach justification for emergency, scope, budget)</p> <p><input type="checkbox"/> Contract Employee (Attach Employment Status Form, scope, budget)</p> <p><input checked="" type="checkbox"/> Other Procurement Exception: (Attach authorizing language/justification, scope and budget)</p>	<p style="text-align: center;"><u> </u> CONTRACT AMENDMENT</p> <p>Enter Current Contract End Date Prior to Amendment: , 20 .</p> <p>Enter Amendment Amount: \$. (or "no change")</p> <p>AMENDMENT TYPE: (Check one option only. Attach details of Amendment changes.)</p> <p><input type="checkbox"/> Amendment to Date, Scope or Budget (Attach updated scope and budget)</p> <p><input type="checkbox"/> Interim Contract (Attach justification for Interim Contract and updated scope/budget)</p> <p><input type="checkbox"/> Contract Employee (Attach any updates to scope or budget)</p> <p><input type="checkbox"/> Other Procurement Exception: (Attach authorizing language/justification and updated scope and budget)</p>
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The Standard Contract Form Instructions, Contractor Certifications and the MassDOT Terms and Conditions documents are incorporated by reference into this Contract and are legally binding [MassDOT TERMS AND CONDITIONS](#) MassDOT IT TERMS AND CONDITIONS

COMPENSATION: (Check ONE option): The Department certifies that payments for authorized performance accepted in accordance with the terms of this Contract will be supported in the state accounting system by sufficient appropriations or other non-appropriated funds, subject to intercept for MassDOT/Commonwealth owed debts under 815 CMR 9.00.

Rate Contract (No Maximum Obligation. Attach details of all rates, units, calculations, conditions or terms and any changes if rates or terms are being amended.)

Maximum Obligation Contract Enter Total Maximum Obligation for total duration of this Contract (or *new* Total if Contract is being amended). \$ 100,000.00.

PROMPT PAYMENT DISCOUNTS (PPD): Commonwealth payments are issued through EFT 45 days from invoice receipt. Contractors requesting **accelerated** payments must identify a PPD as follows: Payment issued within 10 days % PPD; Payment issued within 15 days % PPD; Payment issued within 20 days % PPD; Payment issued within 30 days % PPD. If PPD percentages are left blank, identify reason: agree to standard 45 day cycle statutory/legal or Ready Payments ([G.L. c. 29, § 23A](#)); only initial payment (subsequent payments scheduled to support standard EFT 45 day payment cycle. See Prompt Pay Discounts Policy.)

BRIEF DESCRIPTION OF CONTRACT PERFORMANCE or REASON FOR AMENDMENT: (Enter the Contract title, purpose, fiscal year(s) and a detailed description of the scope of performance or what is being amended for a Contract Amendment. Attach all supporting documentation and justifications.)
An agreement between MassDOT and the TOWN OF BOXFORD for design funding provided through the Municipal Small Bridge Program.

ANTICIPATED START DATE: (Complete ONE option only) The Department and Contractor certify for this Contract, or Contract Amendment, that Contract obligations:

1. may be incurred as of the Effective Date (latest signature date below) and **no** obligations have been incurred **prior** to the Effective Date.

2. may be incurred as of , 20 , a date **LATER** than the Effective Date below and **no** obligations have been incurred **prior** to the Effective Date.

3. were incurred as of , 20 , a date **PRIOR** to the Effective Date below, and the parties agree that payments for any obligations incurred prior to the Effective Date are authorized to be made either as settlement payments or as authorized reimbursement payments, and that the details and circumstances of all obligations under this Contract are attached and incorporated into this Contract. Acceptance of payments forever releases the Commonwealth and MassDOT from further claims related to these obligations.

CONTRACT END DATE: Contract performance shall terminate as of **December 31, 2023**, with no new obligations being incurred after this date unless the Contract is properly amended, provided that the terms of this Contract and performance expectations and obligations shall survive its termination for the purpose of resolving any claim or dispute, for completing any negotiated terms and warranties, to allow any close out or transition performance, reporting, invoicing or final payments, or during any lapse between amendments.

CERTIFICATIONS: Notwithstanding verbal or other representations by the parties, the "**Effective Date**" of this Contract or Amendment shall be the latest date that this Contract or Amendment has been executed by an authorized signatory of the Contractor, the Department, or a later Contract or Amendment Start Date specified above, subject to any required approvals. The Contractor certifies that they have accessed and reviewed all documents incorporated by reference as electronically published and the Contractor makes all certifications required under the Standard Contract Form Instructions and Contractor Certifications under the pains and penalties of perjury, and further agrees to provide any required documentation upon request to support compliance, and agrees that all terms governing performance of this Contract and doing business in Massachusetts are attached or incorporated by reference herein according to the following hierarchy of document precedence, the MassDOT Terms and Conditions <https://www.mass.gov/doc/massdot-terms-and-conditions-0/download> or IT Terms and Conditions, this Standard Contract Form, the Standard Contract Form Instructions, Contractor Certifications, , the Request for Response (RFR) or other solicitation, the Contractor's Response, and additional negotiated terms, provided that additional negotiated terms will take precedence over the relevant terms in the RFR and the Contractor's Response only if made using the process outlined in [801 CMR 21.07](#), incorporated herein, provided that any amended RFR or Response terms result in best value, lower costs, or a more cost effective Contract.

AUTHORIZING SIGNATURE FOR THE CONTRACTOR:

X: _____ Date: _____
(Signature and Date Must Be Handwritten At Time of Signature or conform to the MassDOT Electronic Signature Policy, as in effect from time to time)

Print Name: _____
Print Title: _____

AUTHORIZING SIGNATURE FOR MassDOT:

X: _____ Date: _____
(Signature and Date Must Be Handwritten At Time of Signature, or conform to the MassDOT Electronic Signature Policy, as in effect from time to time)

Print Name: _____
Print Title: _____

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INSTRUCTIONS

The following instructions, Contractor Certifications and the MassDOT Terms and Conditions are incorporated by reference into an executed MassDOT Standard Contract Form. Instructions are provided to assist with Completion of the MassDOT Standard Contract Form. Additional terms are incorporated by reference. Links to legal citations are to unofficial versions and Contractors should consult with their legal counsel to ensure compliance with all legal requirements. Please note that not all applicable laws have been cited.

CONTRACTOR LEGAL NAME (AND D/B/A): Enter the Full Legal Name of the Contractor's business as it appears on the Contractor's W-9 or W-4 Form (Contract Employees only) and the MassDOT Terms and Conditions. If Contractor also has a "doing business as" (d/b/a) name, BOTH the legal name and the "d/b/a" name must appear in this section.

Contractor Legal Address: Enter the Legal Address of the Contractor as it appears on the Contractor's W-9 or W-4 Form (Contract Employees only) and the MassDOT Terms and Conditions, which must match the legal address on the 1099I table in MMARS (or the Legal Address in HR/CMS for Contract Employee).

Contractor Contract Manager: Enter the authorized Contract Manager who will be responsible for managing the Contract. The Contract Manager should be an Authorized Signatory or, at a minimum, a person designated by the Contractor to represent the Contractor, receive legal notices and negotiate ongoing Contract issues. The Contract Manager is considered "Key Personnel" and may not be changed without the prior written approval of the Department. If the Contract is posted on COMMBUYS, the name of the Contract Manager must be included in the Contract on COMMBUYS.

Contractor E-Mail Address/Phone/Fax: Enter the electronic mail (e-mail) address, phone and fax number of the Contractor Contract Manager. This information must be kept current by the Contractor to ensure that the Department can contact the Contractor and provide any required legal notices. Notice received by the Contract Manager (with confirmation of actual receipt) through the listed address, fax number(s) or electronic mail address will meet any written legal notice requirements.

Contractor Vendor Code: The Department must enter the MMARS Vendor Code assigned by the Commonwealth. If a Vendor Code has not yet been assigned, leave this space blank and the Department will complete this section when a Vendor Code has been assigned. The Department is responsible under the Vendor File and W-9s Policy for verifying with authorized signatories of the Contractor, as part of contract execution, that the legal name, address and Federal Tax Identification Number (TIN) in the Contract documents match the state accounting system.

Vendor Code Address ID: (e.g., "AD001") The Department must enter the MMARS Vendor Code Address ID identifying the payment remittance address for Contract payments, which MUST be set up for EFT payments PRIOR to the first payment under the Contract in accordance with the Bill Paying and Vendor File and W-9 policies.

COMMONWEALTH DEPARTMENT NAME: Enter the full Department name with the authority to obligate funds encumbered for the Contract.

Commonwealth MMARS Alpha Department Code: Enter the three (3) letter MMARS Code assigned to this Commonwealth Department in the state accounting system.

Department Business Mailing Address: Enter the address where all formal correspondence to the Department must be sent. Unless otherwise specified in the Contract, legal notice sent or received by the Department's Contract Manager (with confirmation of actual receipt) through the listed address, fax number(s) or electronic mail address for the Contract Manager will meet any requirements for legal notice.

Department Billing Address: Enter the Billing Address or email address if invoices must be sent to a different location. Billing or confirmation of delivery of performance issues should be resolved through the listed Contract Managers.

Department Contract Manager: Identify the authorized Contract Manager who will be responsible for managing the Contract, who should be an authorized signatory or an employee designated by the Department to represent the Department to receive legal notices and negotiate ongoing Contract issues.

Department E-Mail Address/Phone/Fax: Enter the electronic mail (e-mail) address, phone and fax number of the Department Contract Manager. Unless otherwise specified in the Contract, legal notice sent or received by the Contract Manager (with confirmation of actual receipt) through the listed address, fax number(s) or electronic mail address will meet any requirements for written notice under the Contract.

MMARS Document ID(s): Enter the MMARS 20 character encumbrance transaction number associated with this Contract which must remain the same for the life of the Contract. If multiple numbers exist for this Contract, identify all Doc Ids.

RFR/Procurement or Other ID Number or Name: Enter the Request for Response (RFR) or other Procurement Reference number, Contract ID Number or other reference/tracking number for this Contract or Amendment and will be entered into the Board Award Field in the MMARS encumbrance transaction for this Contract.

NEW CONTRACTS (left side of Form):

Complete this section ONLY if this Contract is brand new. (Complete the CONTRACT AMENDMENT section for any material changes to an existing or an expired Contract, and for exercising options to renew or annual contracts under a multi-year procurement or grant program.)

PROCUREMENT OR EXCEPTION TYPE: Check the appropriate type of procurement or exception for this Contract. Only one option can be selected. See the Office of the Comptroller Guidance for Vendors Policies ([State Finance Law and General Requirements, Acquisition Policy and Fixed Assets](#)) and the Operational Services Division Conducting Best Value Procurements Handbook for details.

Statewide Contract (OSD or an OSD-designated Department). Check this option for a Statewide Contract under OSD, or by an OSD-designated Department.

Collective Purchase approved by OSD. Check this option for Contracts approved by OSD for collective purchases through federal, state, local government or other entities.

Department Procurement. Check this option for a Department procurement including state grants and federal sub-grants under [815 CMR 2.00](#) and State Grants and Federal Subgrants Policy, Departmental Master Agreements (MA). If multi-Department user Contract, identify multi-Department use is allowable in Brief Description.

Emergency Contract. Check this option when the Department has determined that an unforeseen crisis or incident has arisen which requires or mandates immediate purchases to avoid substantial harm to the functioning of government or the provision of necessary or mandated services or whenever the health, welfare or safety of clients or other persons or serious damage to property is threatened.

Contract Employee. Check this option when the Department requires the performance of an Individual Contractor, and when the planned Contract performance with an Individual has been classified using the Employment Status Form (prior to the Contractor's selection) as work of a Contract Employee and not that of an Independent Contractor.

Other Procurement Exception. Check this option when another procurement exception exists, such as legislation with specific language naming the Contractor as a recipient of a grant or contract, an existing legal obligation, a prohibition or other circumstance that exempts or prohibits a Contract from being competitively procured, or identify any other procurement exception not already listed. Legislative "earmarks" exempt the Contract solely from procurement requirements, and all other Contract and state finance laws and policies apply. Supporting documentation must be attached to explain and justify the exemption.

CONTRACT AMENDMENT (Right Side of Form)

Complete this section for any Contract being renewed, amended or to continue a lapsed Contract. All Contracts with available options to renew must be amended referencing the original procurement and Contract doc ids, since all continuing contracts must be maintained in the same Contract file (even if the underlying appropriation changes each fiscal year.) "See Amendments, Suspensions, and Termination Policy.)

Enter Current Contract End Date: Enter the termination date of the Current Contract being amended, even if this date has already passed. (Note: Current Start Date is not requested since this date does not change and is already recorded in MMARS.)

Enter Amendment Amount: Enter the amount of the Amendment increase or decrease to a Maximum Obligation Contract. Enter "no change" for Rate Contracts or if no change.

AMENDMENT TYPE: Identify the type of Amendment being done. Documentation supporting the updates to performance and budget must be attached.

Amendment to Date, Scope or Budget. Check this option when renewing a Contract or executing an Amendment ("material change" in Contract terms) even if the Contract has lapsed. The parties may negotiate a change in any element of Contract performance or cost identified in the RFR or the Contractor's response which results in lower costs, or a more cost-effective or better value performance than was presented in the original selected response, provided the negotiation results in a better value within the scope of the RFR than what was proposed by the Contractor in the original selected response. Any "material" change in the Contract terms must be memorialized in a formal Amendment even if a corresponding MMARS transaction is not needed to support the change. Additional negotiated terms will take precedence over the relevant terms in the RFR and the Contractor's Response only if made using the process outlined in [801 CMR 21.07](#), incorporated herein, provided that any amended RFR or Response terms result in best value, lower costs, or a more cost effective Contract.

Interim Contracts. Check this option for an Interim Contract to prevent a lapse of Contract performance whenever an existing Contract is being re-procured but the new procurement has not been completed, to bridge the gap during implementation between an expiring and a new procurement, or to contract with an interim Contractor when a current Contractor is unable to complete full performance under a Contract.

Contract Employee. Check this option when the Department requires a renewal or other amendment to the performance of a Contract Employee.

Other Procurement Exception. Check this option when another procurement exception exists, such as legislation with specific language naming the Contractor as a recipient of a grant or contract, an existing legal obligation, prohibition or other circumstance exempts or prohibits a Contract from being competitively procured, or identify any other procurement exception not already listed. Legislative "earmarks" exempt the Contract solely from



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procurement requirements, and all other Contract and state finance laws and policies apply. Attach supporting documentation to explain and justify the exemption and whether Contractor selection has been publicly posted.

the Commonwealth and MassDOT from further obligations for the identified performance. All settlement payments require justification and must be under same encumbrance and object codes as the Contract payments. Performance dates are subject to [G.L. c.4, § 9](#).

MASSDOT TERMS AND CONDITIONS

Identify whether the MassDOT [Terms and Conditions](#) (TC) or the MassDOT IT Terms and Conditions (TC-IT) is incorporated by reference into this Contract. The Comptroller Expenditure Classification Handbook identifies the applicable Commonwealth Terms and Conditions based upon the object code for the contract.

CONTRACT END DATE

The Department must enter the date that Contract performance will terminate. **If the Contract is being amended and the Contract End Date is not changing, this date must be re-entered again here.** A Contract must be signed for at least the initial duration but not longer than the period of procurement listed in the RFR, or other solicitation document (if applicable). No new performance is allowable beyond the end date without an amendment, but the Department may allow a Contractor to complete minimal close out performance obligations if substantial performance has been made prior to the termination date of the Contract and prior to the end of the fiscal year in which payments are appropriated, provided that any close out performance is subject to appropriation and funding limits under state finance law, and CTR may adjust encumbrances and payments in the state accounting system to enable final close out payments. Performance dates are subject to [G.L. c.4, § 9](#).

COMPENSATION

Identify if the Contract is a **Rate Contract** (with no stated Maximum Obligation) or a **Maximum Obligation Contract** (with a stated Maximum Obligation) and identify the Maximum Obligation. If the Contract is being amended, enter the new Maximum Obligation based upon the increase or decreasing Amendment. The Total Maximum Obligation must reflect the total funding for the dates of service under the contract, including the Amendment amount if the Contract is being amended. The Maximum Obligation must match the MMARS encumbrance. Funding and allotments must be verified as available and encumbered prior to incurring obligations. If a Contract includes both a Maximum Obligation component and Rate Contract component, check off both, specific Maximum Obligation amounts or amended amounts and Attachments must clearly outline the Contract breakdown to match the encumbrance.

CONTRACTOR AUTHORIZED SIGNATORIES FOR EXECUTION

See Comptroller policies entitled Department Head Signature Authorization Policy and the Contractor Authorized Signatory Listing for policies on Contractor and Department signatures for guidance.

Authorizing Signature for Contractor/Date: The Authorized Contractor Signatory must (in their own handwriting and in ink) sign AND enter the date the Contract is signed. See section above under "Anticipated Contract Start Date". Acceptance of payment by the Contractor shall waive any right of the Contractor to claim the Contract/Amendment is not valid and the Contractor may not void the Contract. **Rubber stamps, typed or other images are not acceptable.** Proof of Contractor signature authorization on a **Contractor Authorized Signatory Listing** may be required by the Department if not already on file. **Electronic or digital signatures are permitted pursuant to the MassDOT Electronic Signatory Policy.**

PAYMENTS AND PROMPT PAY DISCOUNTS

Payments are processed within a 45 day payment cycle through EFT in accordance with the Commonwealth Bill Paying Policy for investment and cash flow purposes. Departments may NOT negotiate accelerated payments and Payees are NOT entitled to accelerated payments UNLESS a prompt payment discount (PPD) is provided to support the Commonwealth's and MassDOT's loss of investment earnings for this earlier payment, or unless a payments is legally mandated to be made in less than 45 days (e.g., construction contracts, Ready Payments under [G.L. c. 29, s. 23A](#)). See Prompt Pay Discounts Policy. PPD are identified as a percentage discount which will be automatically deducted when an accelerated payment is made. Reduced contracts rates may not be negotiated to replace a PPD. If PPD fields are left blank please identify that the Contractor agrees to the standard 45 day cycle; a statutory/legal exemption such as Ready Payments ([G.L. c. 29, § 23A](#)); or only an initial accelerated payment for reimbursements or start up costs for a grant, with subsequent payments scheduled to support standard EFT 45 day payment cycle. Financial hardship is not a sufficient justification to accelerate cash flow for *all* payments under a Contract. Initial grant or contract payments may be accelerated for the *first* invoice or initial grant installment, but subsequent periodic installments or invoice payments should be scheduled to support the Payee cash flow needs and the standard 45 day EFT payment cycle in accordance with the Bill Paying Policy. Any accelerated payment that does not provide for a PPD must have a legal justification in Contract file for audit purposes explaining why accelerated payments were allowable without a PPD.

Contractor Name /Title: The Contractor Authorized Signatory's name and title must appear legibly as it appears on the **Contractor Authorized Signatory Listing**.

Authorizing Signature For Department/Date: The Authorized Department Signatory must (in their own handwriting and in ink) sign AND enter the date the Contract is signed. See section above under "Anticipated Start Date". **Rubber stamps, typed or other images are not accepted.** The Authorized Signatory must be an employee within the Department legally responsible for the Contract. See Department Head Signature Authorization. The Department must have the legislative funding appropriated for all the costs of this Contract or funding allocated under an approved Interdepartmental Service Agreement (ISA). A Department may not contract for performance to be delivered to or by another state department without specific legislative authorization (unless this Contract is a Statewide Contract). For Contracts requiring Secretariat signoff, evidence of Secretariat signoff must be included in the Contract file.

BRIEF DESCRIPTION OF CONTRACT PERFORMANCE

Enter a brief description of the Contract performance, project name and/or other identifying information for the Contract to specifically identify the Contract performance, match the Contract with attachments, determine the appropriate expenditure code (as listed in the [Expenditure Classification Handbook](#)) or to identify or clarify important information related to the Contract such as the Fiscal Year(s) of performance (ex. "FY2012" or "FY2012-14"). Identify settlements or other exceptions and attach more detailed justification and supporting documents. Enter "Multi-Department Use" if other Departments can access procurement. For Amendments, identify the purpose and what items are being amended. Merely stating "see attached" or referencing attachments without a narrative description of performance is insufficient.

Department Name /Title: Enter the Authorized Signatory's name and title legibly.

CONTRACTOR CERTIFICATIONS AND LEGAL REFERENCES

Notwithstanding verbal or other representations by the parties, the "Effective Date" of this Contract or Amendment shall be the latest date that this Contract or Amendment has been executed by an authorized signatory of the Contractor, the Department, or a later Contract or Amendment Start Date specified, subject to any required approvals. The Contractor makes all certifications required under this Contract under the pains and penalties of perjury, and agrees to provide any required documentation upon request to support compliance, and agrees that all terms governing performance of this Contract and doing business in Massachusetts are attached or incorporated by reference herein:

ANTICIPATED START DATE

The Department and Contractor must certify when obligations under this Contract/Amendment may be incurred. Option 1 is the default option when performance may begin as of the Effective Date (latest signature date and any required approvals). If the parties want a new Contract or renewal to begin as of the upcoming fiscal year then list the fiscal year(s) (ex. "FY2012" or "FY2012-14") in the Brief Description section. Performance starts and encumbrances reflect the default Effective Date (if no FY is listed) or the later FY start date (if a FY is listed). Use Option 2 only when the Contract will be signed well in advance of the start date and identify a specific future start date. Do not use Option 2 for a fiscal year start unless it is certain that the Contract will be signed prior to fiscal year. Option 3 is used in lieu of the Settlement and Release Form when the Contract/Amendment is signed late, and obligations have already been incurred by the Contractor prior to the Effective Date for which the Department has either requested, accepted or deemed legally eligible for reimbursement, and the Contract includes supporting documents justifying the performance or proof of eligibility, and approximate costs. Any obligations incurred outside the scope of the Effective Date under any Option listed, even if the incorrect Option is selected, shall be automatically deemed a settlement included under the terms of the Contract and upon payment to the Contractor will release

MassDOT and Contractor Ownership Rights. The Contractor certifies and agrees that MassDOT is entitled to ownership and possession of all "deliverables" purchased or developed with Contract funds. A Department may not relinquish rights to deliverables nor may Contractors sell products developed with MassDOT resources without just compensation. The Contract should detail all MassDOT deliverables and ownership rights and any Contractor proprietary rights.

Qualifications. The Contractor certifies it is qualified and shall at all times remain qualified to perform this Contract; that performance shall be timely and meet or exceed industry standards for the performance required, including obtaining requisite licenses, registrations, permits, resources for performance, and sufficient professional, liability; and other appropriate insurance to cover the performance. If the Contractor is a business, the Contractor certifies that it is listed under the Secretary of State's website as licensed to do business in Massachusetts, as required by law.

Laws and Regulations Prohibiting Discrimination and Human Trafficking. Contractors acknowledge and certify as a condition of this Contract that they are responsible for complying fully with all state and federal laws prohibiting discrimination, human trafficking, and forced labor, including but not limited to Chapter 178 of the Acts of 2011.

Business Ethics and Fraud, Waste and Abuse Prevention. The Contractor certifies that performance under this Contract, in addition to meeting the terms of the Contract, will be

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made using ethical business standards and good stewardship of taxpayer and other public funding and resources to prevent fraud, waste and abuse.

Collusion. The Contractor certifies that this Contract has been offered in good faith and without collusion, fraud or unfair trade practices with any other person, that any actions to avoid or frustrate fair and open competition are prohibited by law, and shall be grounds for rejection or disqualification of a Response or termination of this Contract.

Public Records and Access The Contractor shall provide full access to records related to performance and compliance to the Department and officials listed under [Executive Order 195](#) and [G.L. c. 11, s.12](#) for six (6) years beginning on the first day after the final payment under this Contract or such longer period necessary for the resolution of any litigation, claim, negotiation, audit or other inquiry involving this Contract. Access to view Contractor records related to any breach or allegation of fraud, waste and/or abuse may not be denied and Contractor can not claim confidentiality or trade secret protections solely for viewing but not retaining documents. Routine Contract performance compliance reports or documents related to any alleged breach or allegation of non-compliance, fraud, waste, abuse or collusion may be provided electronically and shall be provided at Contractor's own expense. Reasonable costs for copies of non-routine Contract related records shall not exceed the rates for public records under [950 C.M.R. 32.00](#).

Debarment. The Contractor certifies that neither it nor any of its subcontractors are currently debarred or suspended by the federal or state government under any law or regulation including, [Executive Order 147](#); [G.L. c. 29, s. 29F](#); [G.L. c.30, § 39R](#); [G.L. c.149, § 27C](#); [G.L. c.149, § 44C](#); [G.L. c.149, § 148B](#) and [G.L. c. 152, s. 25C](#).

Applicable Laws. The Contractor shall comply with all applicable state laws and regulations including but not limited to the applicable [Massachusetts General Laws](#); the Official [Code of Massachusetts Regulations](#); [Code of Massachusetts Regulations](#) (unofficial); [801 CMR 21.00](#) (Procurement of Commodity and Service Procurements, Including Human and Social Services); [815 CMR 2.00](#) (Grants and Subsidies); [808 CMR 1.00](#) (Compliance, Reporting and Auditing for Human And Social Services); [AICPA Standards](#); confidentiality of Department records under [G.L. c. 66A](#); and the [Massachusetts Constitution Article XVIII](#) if applicable.

Invoices. The Contractor must submit invoices in accordance with the terms of the Contract and the Commonwealth Bill Paying Policy. Contractors must be able to reconcile and properly attribute concurrent payments from multiple Departments. Final invoices in any fiscal year must be submitted no later than August 15th for performance made and received (goods delivered, services completed) prior to June 30th, in order to make payment for that performance prior to the close of the fiscal year to prevent reversion of appropriated funds. Failure to submit timely invoices by August 15th or other date listed in the Contract shall authorize the Department to issue an estimated payment based upon the Department's determination of performance delivered and accepted. The Contractor's acceptance of this estimated payment releases the Commonwealth and MassDOT from further claims for these invoices. **If budgetary funds revert due to the Contractor's failure to submit timely final invoices, or for disputing an estimated payment, the Department may deduct a penalty up to 10% from any final payment in the next fiscal year for failure to submit timely invoices.**

Payments Subject To Appropriation. Pursuant to [G.L. c. 29](#) § 26, § 27 and § 29, Departments are required to expend funds only for the purposes set forth by the Legislature and within the funding limits established through appropriation, allotment and subsidiary, including mandated allotment reductions triggered by [G.L. c. 29, § 9C](#). A Department cannot authorize or accept performance in excess of an existing appropriation and allotment, or sufficient non-appropriated available funds. Any oral or written representations, commitments, or assurances made by the Department or any other Commonwealth representative are not binding. The Commonwealth and MassDOT have no legal obligation to compensate a Contractor for performance that is not requested and is intentionally delivered by a Contractor outside the scope of a Contract. Contractors should verify funding prior to beginning performance.

Intercept. Contractors may be registered as Customers in the Vendor file if the Contractor owes a Commonwealth debt. Unresolved and undisputed debts, and overpayments of Contract payments that are not reimbursed timely shall be subject to intercept pursuant to [G.L. c. 7A, s. 3](#) and [815 CMR 9.00](#). Contract overpayments will be subject to immediate intercept or payment offset. The Contractor may not penalize any state Department or assess late fees, cancel a Contract or other services if amounts are intercepted or offset due to recoupment of an overpayment, outstanding taxes, child support, other overdue debts or Contract overpayments.

Tax Law Compliance. The Contractor certifies under the pains and penalties of perjury: (1) tax compliance with federal tax laws; (2) tax compliance with state tax laws including, but not limited to [G.L. c. 62C](#), [G.L. c. 62C, s. 49A](#); reporting of employees and contractors, withholding and remitting of tax withholdings and child support; and (3) Contractor is in good standing with respect to all state taxes and returns due; reporting of employees and contractors under [G.L. c. 62E](#), withholding and remitting child support including [G.L. c. 119A, s. 12](#); TIR 05-11; New Independent Contractor Provisions and applicable TIRs.

Bankruptcy, Judgments, Potential Structural Changes, Pending Legal Matters and Conflicts. The Contractor certifies it has not been in bankruptcy and/or receivership within the last three calendar years, and the Contractor certifies that it will immediately notify the Department in writing at **least 45 days prior** to filing for bankruptcy and/or receivership,

any potential structural change in its organization, or if there is **any risk** to the solvency of the Contractor that may impact the Contractor's ability to timely fulfill the terms of this Contract or Amendment. The Contractor certifies that at any time during the period of the Contract the Contractor is required to affirmatively disclose in writing to the Department Contract Manager the details of any judgment, criminal conviction, investigation or litigation pending against the Contractor or any of its officers, directors, employees, agents, or subcontractors, including any potential conflicts of interest of which the Contractor has knowledge, or learns of during the Contract term. Law firms or Attorneys providing legal services are required to identify any potential conflict with representation of any Department client in accordance with Massachusetts Board of Bar Overseers (BBO) rules.

Federal Anti-Lobbying and Other Federal Requirements. If receiving federal funds, the Contractor certifies compliance with federal anti-lobbying requirements including 31 USC 1352; other federal requirements; Executive Order 11246; Air Pollution Act; Federal Water Pollution Control Act and Federal Employment Laws.

Protection of Commonwealth Data, Personal Data and Information. The Contractor certifies that all steps will be taken to ensure the security and confidentiality of all Commonwealth/MassDOT data for which the Contractor becomes a holder, either as part of performance or inadvertently during performance, with special attention to restricting access, use and disbursement of personal data and information under [M.G.L. c. 93H](#) and [c. 66A](#) and other applicable state and federal privacy requirements. The Contractor shall comply with [M.G.L. c. 93I](#) for the proper disposal of all paper and electronic media, backups or systems containing personal data and information. The Contractor shall also ensure that any personal data or information transmitted electronically or through a portable device is properly encrypted using (at a minimum) the Commonwealth's "Cryptographic Management Standard" set forth in the Enterprise Information Security Policies and Standards published by the Executive Office for Technology, Services and Security (TSS), or a comparable Standard prescribed by the Department. Contractors with access to credit card or banking information of Commonwealth/MassDOT customers certify that the Contractor is PCI compliant in accordance with the Payment Card Industry Council Standards, and shall provide confirmation compliance during the Contract. The Contractor shall immediately notify the Department in the event of any security breach including the unauthorized access, disbursement, use or disposal of personal data or information, and in the event of a security breach, the Contractor shall cooperate fully with the Commonwealth/MassDOT and provide access to any information necessary for the Commonwealth/MassDOT to respond to the security breach and shall be fully responsible for any damages associated with the Contractor's breach including but not limited to [G.L. c. 214, s. 3B](#).

For all Contracts involving the Contractor's access to personal information, as defined in [G.L. c. 93H](#), and personal data, as defined in [G.L. c. 66A](#), or access to MassDOT systems containing such information or data, Contractor certifies under the pains and penalties of perjury that the Contractor (1) has read M.G.L. c. 93H and c. 66A and agrees to protect any and all personal information and personal data; and (2) has reviewed all of the Enterprise Information Security Policies and Standards published by the Executive Office for Technology Services and Security (TSS), or stricter standards prescribed by the Department. Notwithstanding any contractual provision to the contrary, in connection with the Contractor's performance under this Contract, for all public authorities, executive offices, boards, commissions, agencies, departments, divisions, councils, bureaus, and offices, now existing and hereafter established, the Contractor shall: (1) obtain a copy, review, and comply with any pertinent security guidelines, standards, and policies; (2) comply with all Enterprise Information Security Policies and Standards published by the Executive Office for Security Services and Technology (TSS), or a comparable set of policies and standards ("Information Security Policy") as prescribed by the Department; (3) communicate and enforce such security guidelines, standards, policies and the applicable Information Security Policy among all employees (whether such employees are direct or contracted) and subcontractors; (4) implement and maintain any other reasonable appropriate security procedures and practices necessary to protect personal information and data to which the Contractor is given access by the contracting Department from the unauthorized access, destruction, use, modification, disclosure or loss; (5) be responsible for the full or partial breach of any of these terms by its employees (whether such employees are direct or contracted) or subcontractors during or after the term of this Contract, and any breach of these terms may be regarded as a material breach of this Contract; (6) in the event of any unauthorized access, destruction, use, modification, disclosure or loss of the personal information or personal data (collectively referred to as the "unauthorized use"): (a) immediately notify the contracting Department if the Contractor becomes aware of the unauthorized use; (b) provide full cooperation and access to information necessary for the contracting Department to determine the scope of the unauthorized use; and (c) provide full cooperation and access to information necessary for the contracting Department and the Contractor to fulfill any notification requirements. Breach of these terms may be regarded as a material breach of this Contract, such that the Commonwealth and MassDOT may exercise any and all contractual rights and remedies, including without limitation indemnification under MassDOT's [Terms and Conditions](#) or IT Terms and Conditions, withholding of payments, Contract suspension, or termination. In addition, the Contractor may be subject to applicable statutory or regulatory penalties, including

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and without limitation, those imposed pursuant to [G.L. c. 93H](#) and under [G.L. c. 214, § 3B](#) for violations under [M.G.L. c. 66A](#).

Corporate and Business Filings and Reports. The Contractor certifies compliance with any certification, filing, reporting and service of process requirements of the Secretary of the Commonwealth, the Office of the Attorney General or other Departments as related to its conduct of business in the Commonwealth; and with its incorporating state (or foreign entity).

Employer Requirements. Contractors that are employers certify compliance with applicable state and federal employment laws or regulations, including but not limited to [G.L. c. 7, s. 22](#) (Prevailing Wages for Contracts for Meat Products and Clothing and Apparel); minimum wages and prevailing wage programs and payments; unemployment insurance and contributions; workers' compensation and insurance, child labor laws, AGO fair labor practices; [G.L. c. 149](#) (Labor and Industries); [G.L. c. 150A](#) (Labor Relations); [G.L. c. 151](#) and [455 CMR 2.00](#) (Minimum Fair Wages); [G.L. c. 151A](#) (Employment and Training); [G.L. c. 151B](#) (Unlawful Discrimination); [G.L. c. 151E](#) (Business Discrimination); [G.L. c. 152](#) (Workers' Compensation); [G.L. c. 153](#) (Liability for Injuries); [29 USC c. 8](#) (Federal Fair Labor Standards); [29 USC c. 28](#) and the Federal Family and Medical Leave Act and [M.G.L. c. 175M](#) (Family and Medical Leave).

Federal And State Laws And Regulations Prohibiting Discrimination Contractors certify compliance with applicable state and federal anti-discrimination laws, including but not limited to the Federal Equal Employment Opportunity (EEO) Laws the Americans with Disabilities Act; 42 U.S.C. Sec. 12,101, et seq., the Rehabilitation Act, 29 USC c. 16 s. 794; 29 USC c. 16 s. 701; 29 USC c. 14, 623; the 42 USC c. 45; (Federal Fair Housing Act); [G.L. c. 151B](#) (Unlawful Discrimination); [G.L. c. 151E](#) (Business Discrimination); the Public Accommodations Law [G.L. c. 272, s. 92A](#); [G.L. c. 272, s. 98](#) and 98A, [Massachusetts Constitution Article CXIV](#) and [G.L. c. 93, s. 103](#); [47 USC c. 5, sc. II, Part II, s. 255](#) (Telecommunication Act; Chapter 149, [Section 105D](#), [G.L. c. 151C](#), [G.L. c. 272, Section 92A](#), [Section 98](#) and [Section 98A](#), and [G.L. c. 111, Section 199A](#), and Massachusetts Disability-Based Non-Discrimination Standards For Executive Branch Entities, and related Standards and Guidance, authorized under Massachusetts Executive Order or any disability-based protection arising from state or federal law or precedent. See also MCAD and MCAD links and Resources.

Small Business Purchasing Program (SBPP). A Contractor may be eligible to participate in the SBPP, created pursuant to [Executive Order 523](#), if qualified through the SBPP COMMBUYS subscription process at: [www.commbuys.com](#) and with acceptance of the terms of the SBPP participation agreement.

Limitation of Liability. Contracts may not use the following limitation on liability language unless approved by legal staff at the Office of the Comptroller or Operational Services Division and it may not be used if MassDOT is using the IT Terms and Conditions. The term "other damages" in Section 11 of the MassDOT Terms and Conditions, "Indemnification," shall include, but shall not be limited to, the reasonable costs the Commonwealth/MassDOT incurs to repair, return, replace or seek cover (purchase of comparable substitute commodities and services) under a Contract. "Other damages" shall not include damages to the Commonwealth/MassDOT as a result of third party claims, provided that this in no way limits the Commonwealth's or MassDOT's right of recovery for personal injury or property damages or patent and copyright infringement under Section 11 or the Commonwealth's/MassDOT's ability to join the contractor as a third party defendant. Further, the term "other damages" shall not include, and in no event shall the contractor be liable for, damages for the Commonwealth's or MassDOT's use of contractor provided products or services, loss of Commonwealth or MassDOT's records, or data (or other intangible property), loss of use of equipment, lost revenue, lost savings or lost profits of the Commonwealth or MassDOT. In no event shall "other damages" exceed the greater of \$100,000, or two times the value of the product or service (as defined in the Contract scope of work) that is the subject of the claim. Section 11 sets forth the Contractor's entire liability under a Contract. Nothing in this section shall limit the Commonwealth's or MassDOT's ability to negotiate higher limitations of liability in a particular Contract, provided that any such limitation must specifically reference Section 11 of the MassDOT Terms and Conditions. In the event the limitation of liability conflicts with accounting standards which mandate that there can be no cap of damages, the limitation shall be considered waived for that audit engagement. The terms of this Clarification may not be modified.

Northern Ireland Certification. Pursuant to [G.L. c. 7 s. 22C](#) for state agencies, state authorities, the House of Representatives or the state Senate, by signing this Contract the Contractor certifies that it does not employ ten or more employees in an office or other facility in Northern Ireland and if the Contractor employs ten or more employees in an office or other facility located in Northern Ireland the Contractor certifies that it does not discriminate in employment, compensation, or the terms, conditions and privileges of employment on account of religious or political belief; and it promotes religious tolerance within the work place, and the eradication of any manifestations of religious and other illegal discrimination; and the Contractor is not engaged in the manufacture, distribution or sale of firearms, munitions, including rubber or plastic bullets, tear gas, armored vehicles or military aircraft for use or deployment in any activity in Northern Ireland.

Pandemic, Disaster or Emergency Performance. In the event of a serious emergency, pandemic or disaster outside the control of the Department, the Department may negotiate

emergency performance from the Contractor to address the immediate needs of the MassDOT even if not contemplated under the original Contract or procurement. Payments are subject to appropriation and other payment terms.

Attorneys. Attorneys or firms providing legal services or representing MassDOT may be subject to [G.L. c. 30, s. 65](#), and if providing litigation services must be approved by the Office of the Attorney General to appear on behalf of a Department, and shall have a continuing obligation to notify the Commonwealth of any conflicts of interest arising under the Contract.

Subcontractor Performance. The Contractor certifies full responsibility for Contract performance, including subcontractors, and that comparable Contract terms will be included in subcontracts, and that the Department will not be required to directly or indirectly manage subcontractors or have any payment obligations to subcontractors. .

EXECUTIVE ORDERS

For covered Executive state Departments, the Contractor certifies compliance with applicable Massachusetts Executive Orders, including but not limited to the specific orders listed below. A breach during the period of a Contract may be considered a material breach and subject Contractor to appropriate monetary or Contract sanctions.

Executive Order 481. Prohibiting the Use of Undocumented Workers on State Contracts. For all state agencies in the Executive Branch, including all executive offices, boards, commissions, agencies, Departments, divisions, councils, bureaus, and offices, now existing and hereafter established, by signing this Contract the Contractor certifies under the pains and penalties of perjury that they shall not knowingly use undocumented workers in connection with the performance of this Contract; that, pursuant to federal requirements, they shall verify the immigration status of workers assigned to a Contract without engaging in unlawful discrimination; and shall not knowingly or recklessly alter, falsify, or accept altered or falsified documents from any such worker

Executive Order 130. Anti-Boycott. The Contractor warrants, represents and agrees that during the time this Contract is in effect, neither it nor any affiliated company, as hereafter defined, participates in or cooperates with an international boycott (See IRC § 999(b)(3)-(4), and IRS Audit Guidelines Boycotts) or engages in conduct declared to be unlawful by [G.L. c. 151E, s. 2](#). If there is a breach in the warranty, representation, and agreement contained in this paragraph, without limiting such other rights as it may have, MassDOT and the Commonwealth may rescind this Contract. As used herein, an affiliated company shall be any business entity of which at least 51% of the ownership interests are directly or indirectly owned by the Contractor or by a person or persons or business entity or entities directly or indirectly owning at least 51% of the ownership interests of the Contractor, or which directly or indirectly owns at least 51% of the ownership interests of the Contractor, or which directly or indirectly owns at least 51% of the ownerships interests of the Contractor.

Executive Order 346. Hiring of State Employees By State Contractors Contractor certifies compliance with both the conflict of interest law [G.L. c. 268A specifically s. 5 \(f\)](#) and this order; which includes limitations regarding the hiring of state employees by private companies contracting with the Commonwealth/MassDOT. A privatization contract shall be deemed to include a specific prohibition against the hiring at any time during the term of Contract, and for any position in the Contractor's company, of a state management employee who is, was, or will be involved in the preparation of the RFP, the negotiations leading to the awarding of the Contract, the decision to award the Contract, and/or the supervision or oversight of performance under the Contract.

Executive Order 444. Disclosure of Family Relationships With Other State Employees. Each person applying for employment (including Contract work) within the Executive Branch under the Governor must disclose in writing the names of all immediate family as well as persons related to immediate family by marriage who serve as employees or elected officials of the Commonwealth. All disclosures made by applicants hired by the Executive Branch under the Governor shall be made available for public inspection to the extent permissible by law by the official with whom such disclosure has been filed.

Executive Orders 523, 526 and 565. Executive Order 523 (Establishing the Massachusetts Small Business Purchasing Program). Executive Order 526 (Order Regarding Non-Discrimination, Diversity, Equal Opportunity and Affirmative Action which supersedes Executive Order 478). Executive Order 565 (Reaffirming and Expanding the Massachusetts Supplier Diversity Program). All programs, activities, and services provided, performed, licensed, chartered, funded, regulated, or contracted for by the state shall be conducted without unlawful discrimination based on race, color, age, gender, ethnicity, sexual orientation, gender identity or expression, religion, creed, ancestry, national origin, disability, veteran's status (including Vietnam-era veterans), or background. The Contractor and any subcontractors may not engage in discriminatory employment practices. The Contractor certifies compliance with applicable federal and state laws, rules, and regulations governing fair labor and employment practices. The Contractor also commits to purchase supplies and services from certified minority, women, veteran, service-disabled veteran, LGBT or disability-owned businesses, small businesses, or businesses owned by socially or economically disadvantaged persons; and Contractor commits to comply with any applicable Department contractual requirements pertaining to the employment of persons with disabilities pursuant to [M.G.L. c. 7 s. 61\(s\)](#). These provisions shall be enforced through the contracting Department, OSD, and/or the Massachusetts Commission

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Against Discrimination. Any breach shall be regarded as a material breach of the contract that may subject the contractor to appropriate sanctions.

COMMONWEALTH OF MASSACHUSETTS CONTRACTOR AUTHORIZED SIGNATORY LISTING



CONTRACTOR LEGAL NAME :
CONTRACTOR VENDOR/CUSTOMER CODE:

INSTRUCTIONS: Any Contractor (other than a sole-proprietor or an individual contractor) must provide a listing of individuals who are authorized as legal representatives of the Contractor who can sign contracts and other legally binding documents related to the contract on the Contractor’s behalf. In addition to this listing, any state department may require additional proof of authority to sign contracts on behalf of the Contractor, or proof of authenticity of signature (a notarized signature that the Department can use to verify that the signature and date that appear on the Contract or other legal document was actually made by the Contractor’s authorized signatory, and not by a representative, designee or other individual.)

NOTICE: *Acceptance of any payment under a Contract or Grant shall operate as a waiver of any defense by the Contractor challenging the existence of a valid Contract due to an alleged lack of actual authority to execute the document by the signatory.*

For privacy purposes **DO NOT ATTACH** any documentation containing personal information, such as bank account numbers, social security numbers, driver’s licenses, home addresses, social security cards or any other personally identifiable information that you do not want released as part of a public record. The Commonwealth reserves the right to publish the names and titles of authorized signatories of contractors.

AUTHORIZED SIGNATORY NAME	TITLE

I certify that I am the President, Chief Executive Officer, Chief Fiscal Officer, Corporate Clerk or Legal Counsel for the Contractor and as an authorized officer of the Contractor I certify that the names of the individuals identified on this listing are current as of the date of execution below and that these individuals are authorized to sign contracts and other legally binding documents related to contracts with the Commonwealth of Massachusetts on behalf of the Contractor. I understand and agree that the Contractor has a duty to ensure that this listing is immediately updated and communicated to any state department with which the Contractor does business whenever the authorized signatories above retire, are otherwise terminated from the Contractor’s employ, have their responsibilities changed resulting in their no longer being authorized to sign contracts with the Commonwealth or whenever new signatories are designated.

Signature

Date:

Title:

Telephone:

Fax:

Email:

[Listing can not be accepted without all of this information completed.]

A copy of this listing must be attached to the “record copy” of a contract filed with the department.

COMMONWEALTH OF MASSACHUSETTS CONTRACTOR AUTHORIZED SIGNATORY LISTING



CONTRACTOR LEGAL NAME :
CONTRACTOR VENDOR/CUSTOMER CODE:

PROOF OF AUTHENTICATION OF SIGNATURE

**This page is optional and is available for a department to authenticate contract signatures.
It is recommended that Departments obtain authentication of signature for the signatory
who submits the Contractor Authorized Listing.**

This Section MUST be completed by the Contractor Authorized Signatory in presence of notary.

Signatory's full legal name (print or type):

Title:

X _____

Signature as it will appear on contract or other document (**Complete only in presence of notary**):

AUTHENTICATED BY NOTARY OR CORPORATE CLERK (PICK ONLY ONE) AS FOLLOWS:

I, _____ (NOTARY) as a notary public certify that I witnessed
the signature of the aforementioned signatory above and I verified the individual's identity on this date:

_____, 20 ____.

My commission expires on:

AFFIX NOTARY SEAL

I, _____ (CORPORATE CLERK) certify that I witnessed the
signature of the aforementioned signatory above, that I verified the individual's identity and confirm the individual's
authority as an authorized signatory for the Contractor on this date:

_____, 20 ____.

AFFIX CORPORATE SEAL

**Municipal Small Bridge Program
Design Funding Agreement**

Agreement Number: _____

Date: _____

Municipality: Boxford

Project: Endicott Rd/Washington St under Fish Brook - FY23

This Agreement made and entered into by and between the MASSACHUSETTS DEPARTMENT OF TRANSPORTATION, hereinafter called "MassDOT", and the CITY/TOWN OF Boxford (hereinafter called the "MUNICIPALITY") and

WHEREAS, the MUNICIPALITY proposes to rehabilitate Bridge #B-19-005 (89B) On Endicott Rd/Washington St under Fish Brook (hereinafter referred to as the "PROJECT"), in accordance with the PROJECT's approved MGL Chapter 85, Section 35 review of the plans, specifications and estimate (hereinafter referred to as "SPECIFICATIONS"), which shall be kept on file at MassDOT and the MUNICIPALITY, and

WHEREAS, the PROJECT is to be financed by funds provided by MassDOT under the Acts of 2016, Chapter 220 utilizing non-federal aid funding for a five year FIFTY MILLION DOLLAR (\$50,000,000) Program to provide reimbursement assistance to Cities and Towns of up to \$500,000 per year to aid in funding the replacement and preservation of municipally owned bridges with spans between 10' and 20', hereto attached and labeled "EXHIBIT C" and

WHEREAS, the MUNICIPALITY has procured the services of the consulting firm of TEC Engineering Corp (hereinafter called the "DESIGN ENGINEER") to develop the design of said PROJECT, and

WHEREAS, MassDOT has prequalified the DESIGN ENGINEER to perform the required work through its Architects & Engineering Review Board, where they have been Prequalified in "Basic Bridge/ Rating", and

WHEREAS, the Contractor, in order to be eligible to bid on said PROJECT shall be approved by MassDOT's prequalification process, and where they need to be Prequalified under the Class of Work BRIDGE - CULVERTS or BRIDGE - CONSTRUCTION in accordance with MGL Chapter 81 Subsection 8B, and the award of said PROJECT shall be subject to MGL Chapter 30 Section 39M, and

WHEREAS, said SPECIFICATIONS shall be in conformance with the spreadsheets entitled "Municipal Bridge Projects, MGL Chapter 85 Section 35 Review Process" hereto attached and labeled "Exhibit C" and/or to the satisfaction of MassDOT - Highway Division, Bridge Engineer, **where Construction for said PROJECT shall not commence until the Municipality receives a copy of the approved Construction plan mylars that are stamped and signed by the Bridge Engineer.**

WHEREAS, the reimbursement to the MUNICIPALITY is limited up to \$100,000.00, which includes eligible design costs for the said PROJECT, and shall be done in accordance with the above referenced SPECIFICATIONS. The requested design cost totals \$ 100,000.00. The PROJECT design costs may be established using the Lump Sum Fee method of payment or the Costs Plus a Net Fee Method. The Net Fee for profit for either method shall be between 10% and 12%.

WHEREAS, the parties hereto have reached an agreement as to the apportionment of work and expense necessary for the completion of the PROJECT.

NOW THEREFORE, in consideration of the obligations contained herein and other good and valuable consideration, the receipt of which is hereby acknowledged, MASSDOT and the MUNICIPALITY hereby agree, each with the other, as follows:

DIVISION OF WORK

The MUNICIPALITY shall provide by its own DESIGN ENGINEER and Contractor(s) and/or Subcontractor(s) all necessary labor, materials, equipment and other services to design said PROJECT pursuant with any and all applicable SPECIFICATIONS, local, state and federal laws or regulations in accordance with the attached Scope of Work, labeled "EXHIBIT A". In addition please find the MUNICIPALITY's **Municipal Small Bridge Program Application** for a detailed description of the PROJECT, hereto attached and labeled "EXHIBIT A-1".

In addition, any and all design and construction activities or related work required for the construction of said PROJECT shall be in conformance with any and all policies and procedures of MASSDOT as stated in "Exhibit C".

To be eligible to bid on said PROJECT, the Contractor shall be approved in accordance with MassDOT's prequalification process, where the application forms are located on MassDOT's Highway Division Web Site, and under Construction Prequalification. The MUNICIPALITY shall follow the same guidelines as if the said PROJECT were under MassDOT's Chapter 90 program.

Any and all approvals made by MassDOT during the PROJECT'S design review shall not relieve the MUNICIPALITY'S responsibility for design errors and omissions as specified under this Agreement.

The MUNICIPALITY shall obtain any and all applicable permits and/or clearances required by local, state, and federal agencies. The MUNICIPALITY shall also be responsible for obtaining all easements, property right interests and/ or right of way appraisals needed for the construction. Prior to awarding the PROJECT, the MUNICIPALITY shall submit these documents to MassDOT certifying that any and all necessary environmental permits and right of way has been acquired. Upon obtaining approval of the said documents by MassDOT, the MUNICIPALITY can proceed with the construction award. Any and All ROW acquisitions shall be borne by the MUNICIPALITY

DIVISION OF EXPENSE

The MassDOT will reimburse the MUNICIPALITY for the eligible design costs incurred based upon the summation of the preliminary costs estimates stated on page 2 of this Agreement, which totals \$100,000.00, **where the total design cannot exceed \$100,000.** All costs incurred shall be approved by MASSDOT prior to reimbursement. Any costs in and above this amount shall be borne by the MUNICIPALITY.

For all design services to be performed under this Agreement, **if applicable,** the MUNICIPALITY shall be compensated in accordance with the **Fee Proposal** (Workhour Estimate) hereto attached and labeled "EXHIBIT B". The maximum amounts to be paid under this Agreement for said Design services are indicated in "EXHIBIT B".

Extra work, change orders, additional items that may arise as a result of any errors, omissions, or at the request of the MUNICIPALITY shall be considered non-participating costs and shall be borne by the MUNICIPALITY.

The DESIGN ENGINEER shall insure that the compensation provisions and cost principles in Federal Acquisition Regulations (Technical Reference 49 CFR, Chapter 1, Part 31) are adhered to, as applicable.

The MassDOT Audit Operations Unit may have performed a current prequalification audit on the DESIGN ENGINEER in accordance with 23 CFR, Part 172, and the overhead rate will be included as "EXHIBIT D", if applicable. The overhead billing rate shall be limited to a maximum of 155.0% per MassDOT's policy. The said overhead rate on allowable indirect cost shall apply, notwithstanding any audit which indicates that the higher indirect costs were actually incurred.

The following provisions shall supersede the relative paragraphs of the Standard Provisions ("Attachment I, Division I" hereto attached by reference):

- **MassDOT's current policy does limit the hourly rate for engineering and technical employees.**
- No CADD machine time charges for computerized drafting or design shall be allowed under direct expenses. No markup will be allowed on Direct Expenses.

Direct Expenses in excess of the stated limit or amended limit, as well as any costs which are directly attributable to this

Agreement that are not pre-approved in writing as direct expenses, shall be considered to be unallocated Costs and shall not be charged to overhead.

Reimbursable direct expenses for private mileage, meals, and lodging shall conform to the following limits:

1.Private Mileage - In accordance with present company policy and the Federal Travel Regulations, but limited to a maximum of 58 Cents per mile. Necessary tolls and parking fees will be considered included under said mileage limit.

2.Meals - In accordance with present company policy, and the Federal Travel Regulations, but limited to breakfast \$5.00 max, lunch \$10.00 max, and dinner \$20.00 max, except that the cost of meals related to trips made in the course of the normal work day shall not be reimbursed.

3.Lodging - Actual costs in accordance with present company policy, and the Federal Travel Regulations, but not to exceed \$125.00 per day, only when the work performed is greater than 50 miles from the Consultant's office or subconsultant office, and only when overnight lodging is required. All reimbursable expenses are to be accompanied by a receipt.

The Administration costs incurred by the MUNICIPALITY for the said PROJECT are not eligible for reimbursement.

It is understood that rates and cost components used in the estimate are not intended for use as reimbursable billing rates or costs in lieu of actual costs supported by the MUNICIPALITY's accounting records.

METHOD OF PAYMENT TO THE MUNICIPALITY

Section 1. During the course of the design and/ or construction of said PROJECT, the MUNICIPALITY may present monthly progress bills of the incurred costs for approval and payment by MASSDOT.

Section 2. Upon the completion of the PROJECT to the satisfaction of MASSDOT and the MUNICIPALITY, written notification shall be given to the District Highway Director of MASSDOT by the MUNICIPALITY that said work has been completed and, within 120 days thereof, the MUNICIPALITY will submit to MASSDOT a final detailed bill (in quintuplicate) as required, and final settlement will then be made between the COMMONWEALTH and the MUNICIPALITY. The MUNICIPALITY shall follow MassDOT's CHAPTER 90 process for reimbursement and shall complete any and all forms required as directed by MassDOT's State Aid Engineers. The said billing shall be reviewed by the District's State Aid Engineers, and upon approval they shall be responsible for completing the Payment Commodity Form (PRC) and forwarding the said payment to MassDOT's - Highway Engineering Division - Bridge Section for authorization of said billing. This information may be submitted in an electronic format compatible with MASSDOT's needs.

Section 3. All reimbursable charges in connection with this Agreement will be subject to audit by representatives of MASSDOT and the MUNICIPALITY will retain all records and documents pertaining to the Agreement charges until such audit is completed or until written approval to destroy the records is given by MASSDOT.

The Governor or his designee, the Secretary of Administration and Finance, and the State Auditor or his designee shall have the right at reasonable times and upon reasonable notice to examine the books,

records and other compilations of data of the MUNICIPALITY which pertain to the performance of the provisions and requirements of this Agreement.

FUTURE MAINTENANCE

The MUNICIPALITY shall continue to have sole responsibility for the maintenance and upkeep of all property associated with the PROJECT and the costs thereof.

MISCELLANEOUS

This Agreement shall not be considered fully executed, and work shall not commence until MASSDOT signs this Agreement and the MUNICIPALITY has received an official Notice to Proceed from MassDOT. Any and All work that is eligible for reimbursement as it relates to the design or construction activities of said PROJECT that is performed prior to the issuance of the NTP shall be borne by the MUNICIPALITY.

Section 8.08 Submittals – Electronic Files

*This Section of the Standard Provisions is modified by adding the following language, **if applicable under the Chapter 85 review or procurement process.***

The Consultant is required to provide accessible electronic deliverables. For purposes of this provision “accessible” shall be construed to mean accessible and usable by people with disabilities, including use with assistive technologies. For the purposes of this provision, the term “electronic deliverables” includes, but is not limited to any or all of the following: pamphlets, presentations, specifications, cost estimates, studies, reports, web pages and applications.

Deliverables, or components thereof, such as plans, drawings, schedules, field notes, measurements or calculations that cannot reasonably be made accessible will be exempt from these requirements, subject to review and approval by MassDOT. Compliance with the following standards (“Accessibility Standards”) is required to ensure accessibility of electronic deliverables:

Web Content Accessibility Guidelines (WCAG) 2.0 Level AA --
<http://www.w3.org/TR/WCAG20/>

and when applicable:

Enterprise IT Accessibility Standards -- <http://www.mass.gov/anf/research-and-tech/policies-legal-and-technical-guidance/it-policies-standards-and-procedures/ent-pols-and-stnds/accessibility-standards/enterprise-it-accessibility-standards.html>

Prior to delivery, the Consultant is responsible for confirming deliverable compliance with the Accessible Electronic Deliverable Requirements (refer to the Guidelines that follow). The Consultant shall be responsible for curing each instance of non-compliance identified by MassDOT with the foregoing accessibility requirements at no additional cost.

Guidelines for Creation of Accessible Electronic Deliverables

Web accessibility means that people with disabilities can perceive, understand, navigate, and interact with the Web. It encompasses all disabilities that affect access to the Web, including visual, auditory, physical, speech, cognitive, and neurological disabilities along with changing abilities due to aging or other conditions.

A document is considered accessible if all users, with or without disabilities, can read and understand all the information it contains. Every user should be able to:

- Understand the document's structure,
- Navigate to and within sections of the document,
- Read and understand the document's contents, including narrative, images, and data tables, and
- Interact with forms.

Minimum Requirements

Authors should employ the following techniques, at a minimum, to create accessible documents:

- Provide text alternatives for images
 - All images and figures require alternative text that serves as a replacement for the image. A person unable to see the image should be able to understand the content and meaning for its use from this text.
 - Alternative text should be no longer than 50 characters; if a longer description is required it should be in the document text. Do not use images of text.
- Ensure correct reading order
 - Ensure that content is formatted in the correct order on the page so that it reads correctly and does not jump around the page when using Assistive Technology (AT).

- Avoid using tables for layout and avoid the use of call-out boxes for unique information.
- Provide headings
 - Use heading levels to indicate the document outline levels (e.g., h1 followed by h2, h2 followed by h2 or h3, etc.) this allows Assistive Technology (AT) to scan the page.
- Provide links and link text
 - Make sure that hyperlinked text makes sense when read out of context. For example, avoid "click here" and use the name of a document/Website or other indication of where you are taking the reader.
 - Use footnotes instead of using the URL as the link text when you need it to appear in print.
- Set the default language
 - Every document should have a language set in the document properties section.
- Lists
 - Create lists of related items using the provided list elements (bullets or numbers) and formatting in the software program. These elements will be recognized by AT.
- Tables
 - Use the provided functionality in the software program to create tables, providing a title/caption and identifying row and column headers, so the content can be read correctly.
- Color and contrast
 - Color should not be used as the sole indication of meaning, such as using bold or red text as the only way to indicate required information. (An asterisk is always used in this case.)
 - Ensure that font and background colors have sufficient contrast so they can be read.

In addition, scanned documents converted to PDF are not accessible. Scanned documents should be converted to text using optical character recognition technology.

PDF use on websites is addressed by [23 different Techniques for Web Content Accessibility](http://www.w3.org/WAI/GL/WCAG20-TECHS/pdf.html) (<http://www.w3.org/WAI/GL/WCAG20-TECHS/pdf.html>) provided as guidance to achieve meeting the standards.

EXPIRATION DATE

This Agreement is set to expire on December 31, 2023. In the event that the MUNICIPALITY believes an extension of time is necessary, the MUNICIPALITY agrees to submit to MassDOT a written

request for an extension no later than 60 days prior to the termination date specified on the attached signature page. The request will need to address the current expiration date, the proposed expiration date and any other information deemed necessary. MassDOT, in its absolute discretion, may agree to grant said request for an extension of time if it finds that sufficient justification has been provided by the MUNICIPALITY. An extension for this Agreement after this date will not be granted and the Agreement will be terminated.

IN WITNESS WHEREOF, the Parties have executed this Agreement as an instrument under seal as of the date first above written.

MASSACHUSETTS DEPARTMENT OF
TRANSPORTATION

By: _____
Name:
Title:

MUNICIPALITY

By: _____
Name:
Title:

Exhibit A: Scope of Work

Exhibit A -1 : Application

Exhibit B: Fee Proposal

Exhibit C: Chapter 85 Specifications

SCOPE OF WORK: Boxford/Topsfield Small Bridge – Endicott Road over Fish Brook

The Town of Boxford (Client) has retained TEC, Inc. (TEC) to provide engineering services for the superstructure replacement of the Endicott Road Bridge over Fish Brook (B-19-005) in the Town of Boxford and Topsfield. Preliminary review during the application process indicated that a full superstructure replacement would be the most prudent course of action.

Task 1 – Wetland Delineation and Site Survey **\$10,000.00**

- TEC's Subconsultant shall perform wetland delineations at the bridge location including placement of numbered sequences of flags by a qualified wetland scientist to identify and delineate the boundary and type of wetland resources present within 100 feet of the limits of work at the bridge, including a wetland report with DEP Field Delineation forms.
- Perform a field survey (including topographic, utility and boundary survey) of the project limits and within 100' of structure per MassDOT LRFD Bridge Manual. Field survey will extend 25' off the edge of pavement or curb line.
- Establish survey control on Massachusetts State Plane Coordinate System (NAD83) and North American Vertical Datum of 1988.
- Bridge detail survey per MassDOT's LRFD Bridge Manual.
- Develop the base plan from the field survey and generate a surface and 1' contours within the project limits.
- Research, locate and plot any underground utilities onto the base plan.
- Research street and abutting properties, locate monuments and plot road layout onto the base plan.
- Stream survey per MassDOT's LRFD Bridge Manual.

Task 2 – Geotechnical Engineering and Reporting **\$20,000.00**

- Since Endicott Road is categorized as an Urban Minor Arterial, perform a three-day exploration program to include two borings at the existing culvert location, straddling the existing structure. One boring will extend to bedrock and a 10-foot rock core shall be taken. The second boring depth is planned to be around 30 feet below existing road grade or the top of bedrock whichever comes first. Borings and rock core will be performed in accordance with MassDOT standards. The subsurface information will be summarized in boring logs and gradation (sieve analysis) and/or Atterberg limits testing will be performed on a few soil samples if needed. TEC's Subconsultant has included the cost for a police detail for three days to control traffic during the on-site drilling.
- Perform a series of probes at one abutment to determine abutment geometry.
- Compile and analyze the data obtained to determine:
 - the allowable bearing capacity and settlement of the foundations,
 - lateral foundation performance,
 - seismic issues, including site class and liquefaction potential for soils, and
 - construction, earth support, and dewatering issues.
- Prepare recommendations summarizing the results of the findings in a report, prepared in accordance with the MassDOT LRFD Bridge Manual.
- Obtain stream sediment samples at the bridge crossing location within the study area to supplement the Hydrologic and Hydraulic Analysis and Reporting.

Task 3 – Hydrologic and Hydraulic Analysis and Reporting **\$8,000.00**

- A full Hydraulic Report will be prepared in accordance for the MassDOT Chapter 85 Review Matrix because Endicott Road is considered a Urban Minor Arterial.
- Review Hydrology of the area based on sources including USGS StreamStats, FEMA FIS for Essex County, nearby USGS Stream Gauges (if available), FHWA Peak Discharge Regressions, and NETC Peak Discharge Regressions to generate flow data representative of the stream crossing site. Calculate peak discharges for the 10-yr, 25-yr, 100-yr, 200-yr and 500-yr return frequencies per MassDOT LRFD Bridge Design Manual requirements.
- Perform a site visit to become familiar with the site and document current conditions. Perform confirmation measurements of the stream and existing structure, and to evaluate stream and floodplain conditions to aid in the development of a hydraulic model.

- Use field survey collected in accordance with and to the extent of the MassDOT LRFD Bridge Manual merged with available LiDAR DER(s) to produce an accurate representation of existing conditions. The model will be georeferenced utilizing Massachusetts State Plan NAD83 (feet) horizontal datum and NAVD 88 (feet) vertical datum and produced in accordance with the MassDOT LRFD H&H modeling requirements.
- Use the hydraulic model to evaluate the existing hydraulic opening. Results will include profiles, water surface elevations, and velocities for the design flow event. The design flow event will be based on the Highway Functional Classification for Endicott Road based on MassDOT guidelines and the MassDOT Chapter 85 Review matrix.
- Use the hydraulic model to evaluate scour in accordance with the MassDOT LRFD Bridge Manual for the design frequency required based on the Highway Functional Class.
- Compile the results of the hydrology, hydraulics and scour analyses in an H&H Report in conformance with the MassDOT LRFD Bridge Manual.

Task 4 – Preliminary Design and Engineering **\$30,000.00**

- Perform a site visit to document field measurements and condition of the various bridge components and confirm with the latest MassDOT Bridge Inspection.
- Develop preliminary plans, calculations, and details for proposed replacement structure. Based on early assessments by TEC, it is anticipated that the superstructure will be replaced with a precast prestressed deck beam superstructure with a cast in place topping slab and compliant traffic safety features.
- Prepare temporary traffic management plans in accordance with MUTCD and MassDOT standards.
- Prepare preliminary construction cost estimate for Client review to aid in future capital planning discussions for future Small Bridge Grant applications.
- Review preliminary designs and estimates with Client for feedback prior to submitting to Chapter 85 review.
- Submit the preliminary plans to MassDOT for review.

Task 5 – Final Design and Engineering **\$32,000.00**

- Respond to MassDOT comments on the 25% design plans. Incorporate changes requested and resubmit 25% design plans to MassDOT (if deemed necessary by MassDOT).
- Prepare a final set of Construction Plans and one set of design calculations (checked by a second engineer per the MassDOT Chapter 85 review matrix).
- Finalize project specifications. Specifications shall be based on MassDOT's latest Standard Specifications.
- Submit plans, specifications, reports (Hydraulic and Geotechnical) and calculations to MassDOT for Chapter 85 review.
- Any requested changes from MassDOT or changes that result from the permitting process will be covered under a separate amendment to the Town.



Municipal Small Bridge Program Fiscal Year 2023 Funding Application

Instructions

Complete this application to the best of the municipality's ability. For sections that do not apply to this application, write N/A. Submit application and supporting documents as one PDF to SmallBridgeProgram@dot.state.ma.us and copy your District Bridge Engineer.

Application Type (check one):

Phase 1 (design)

Phase 2 (construction)

Part A: Applicant Information

Date of Submission: _____ City/Town: _____

Applicant Name: _____ Applicant Title: _____

Address: _____

E-mail: _____ Telephone: _____

Part B: Bridge Information

Road: _____ Bridge Number: _____

Feature under Bridge: _____

Proposed Project Type: New Bridge Bridge Rehabilitation Bridge Preservation

Reason for Application (Describe the condition of the bridge):

Is the bridge currently closed, posted (include the loading) or restricted (include by how much)?

Yes No

Comment:



Municipal Small Bridge Program Fiscal Year 2023 Funding Application

Part C: Eligibility

1. Is the span of the bridge greater than 10 feet and less than or equal to 20 feet?

Yes No

Comment:

2. Is the bridge on a public way?

Yes No

Comment:

3. Are all municipally-owned bridges in the City/Town with reduced weight-carrying capacity properly posted as previously directed by MassDOT?

Yes No

Comment:

4. Can the 25% design be submitted within 6 months of the application approval?

Yes No

Comment:

Part D: Proposed Project

1. Description of Work

- a. Has the bridge(s) been inspected? If yes, please provide the condition ratings and a copy of the inspection report as an appendix to this application. If no, please advise MassDOT to allow earliest determination of dimensions and eligibility.

Yes No

Comment:



Municipal Small Bridge Program Fiscal Year 2023 Funding Application

- b. Has the bridge(s) been rated? If so, please provide the inventory ratings and copy of the rating report as an appendix to this application.

Yes No

Comment:

- c. If neither of the above is applicable, provide a description of the condition of the bridge(s); state the City/Town's concerns regarding the continued unrestricted use of the bridge(s); and what actions are planned by the City/Town to ensure continued safe use of the bridge(s).

2. Describe the scope of work for the proposed project. Provide consultant scope if available.

Yes No

Comment:



Municipal Small Bridge Program Fiscal Year 2023 Funding Application

3. Describe any anticipated design services that will be required for this project, including the length of time required to secure and complete these services.

4. Provide a breakdown of the estimated cost of the project, including design services.

5. Has the community signed the Community Compact?

Yes No

6. Demonstration of Public Need
 - a. What is the length (in miles) of a suitable detour around the bridge?

 - b. Please describe the emergency services carried by the bridge. Consider how often the roadway is used as a fire, police, and/or EMT route.

 - c. Please describe how the bridge serves the local economy (commercial and industrial). Consider the following: agricultural, tourist/recreational sites, commercial district, major employer, other economic generators, etc.



Municipal Small Bridge Program Fiscal Year 2023 Funding Application

- d. Please describe the essential services carried by the bridge. Consider the following: heating oil, propane gas, trash/recycling, septic tank service, school buses, mail, other delivery services, etc. and if a viable detour for these services currently exists.

7. Description of Demonstrated Financial Need

- a. Explain why the limited funds of the Municipal Small Bridge Program are needed to advance the project.

- b. Provide the current annual Chapter 90 apportionment for your municipality and balance of uncommitted funds.

- c. What other sources of funds does the municipality have to repair its bridges? Please explain why these are insufficient or inappropriate for this project.

- d. What is the municipality's annual revenue?



TOWN OF TOPSFIELD

Kevin Harutunian, Town Administrator

8 West Common Street, Topsfield, Massachusetts 01983

Telephone 978-887-1500; Fax 978-887-1502

February 9, 2022

Mr. Paul Stedman

District Highway Director -District 4

Massachusetts Department of Transportation

519 Appleton Street Arlington, MA 02476

Attention: Leonard Aversa
District 4 Bridge Engineer

RE: Municipal Small Bridge Program
Application Package for Bridge B-19-005 (89B)
Endicott Road over Fish Brook, Boxford MA

Dear Paul,

Please accept this letter, on behalf of the Town of Topsfield, offering our support of the Town of Boxford's application to design for the replacement of the Endicott Road Bridge over fish brook under the MassDOT Small Bridge Program. This bridge is a shared bridge at the Town/City line of both Boxford and Topsfield. We look forward to working with the Town of Boxford and MassDOT should the project be selected for funding.

Sincerely,

Kevin Harutunian

Town Administrator

978.887.1500

Latest Inspection Report

STRUCTURES INSPECTION FIELD REPORT

2-DIST
04

B.I.N.
89B

CULVERT INSPECTION

BR. DEPT. NO.
B-19-005

CITY/TOWN BOXFORD	8.-STRUCTURE NO. B19005-89B-MUN-BRI	11-Kilo. POINT 000.000	41-STATUS A:OPEN	90-ROUTINE INSP. DATE MAY 7, 2020
07-FACILITY CARRIED HWY ENDICOTT RD	MEMORIAL NAME/LOCAL NAME	27-YR BUILT 1850	106-YR REBUILT 1900	YR REHAB'D (NON 106) 0000
06-FEATURES INTERSECTED WATER FISH BROOK	26-FUNCTIONAL CLASS Urban Minor Arterial	DIST. BRIDGE INSPECTION ENGINEER J. Dideo		
43-STRUCTURE TYPE 819 : Masonry Culvert	22-OWNER Town Agency	21-MAINTAINER Town Agency	TEAM LEADER O. *Moustafa	
107-DECK TYPE N : Not applicable	WEATHER Sunny	TEMP. (air) 18°C	TEAM MEMBERS A. LABIB	

TYPE OF CULVERT: <table border="1"> <tr> <td>SHAPE:</td> <td>RECTANGULAR</td> </tr> <tr> <td>MATERIAL:</td> <td>CONCRETE AND MASONRY</td> </tr> <tr> <td>COATING:</td> <td>NONE</td> </tr> </table>	SHAPE:	RECTANGULAR	MATERIAL:	CONCRETE AND MASONRY	COATING:	NONE	BARRELS: (In Meters) <table border="1"> <tr> <td>SIZE:</td> <td>5.00Wx2.00H</td> <td>NUMBER:</td> <td>2</td> </tr> </table>	SIZE:	5.00Wx2.00H	NUMBER:	2
SHAPE:	RECTANGULAR										
MATERIAL:	CONCRETE AND MASONRY										
COATING:	NONE										
SIZE:	5.00Wx2.00H	NUMBER:	2								
	DEPTH OF COVER (To the nearest tenth of a meter) <table border="1"> <tr> <td>E</td> <td>W</td> </tr> <tr> <td>0.3</td> <td>0.3</td> </tr> </table>	E	W	0.3	0.3						
E	W										
0.3	0.3										
	CURB REVEAL (In millimeters) <table border="1"> <tr> <td>150</td> <td>0</td> </tr> </table>	150	0								
150	0										

ITEM 62 CULVERT & RETAINING WALLS 6 162 (Dive Report): N 162 (This Report): 6

	Dive This Rpt.	Rpt.	DEF		Dive This Rpt.	Rpt.	DEF		Dive This Rpt.	Rpt.	DEF	
1. Roof	N	6	M-P	7. Protective Coating	N	N	-	13. Member Alignment	N	7	-	UNDERMINING (Y/N) If YES please explain N
2. Floor	N	N	-	8. Embankment	N	N	-	14. Deformation	N	N	-	
3. Walls	N	6	M-P	9. Wearing Surface	N	7	M-P	15. Scour	N	X	-	COLLISION DAMAGE: <i>Please explain</i> None (X) Minor () Moderate () Severe ()
4. Headwall	N	5	S-A	10. Railing	N	3	S-A	16. Settlement	N	N	-	
5. Wingwall	N	7	M-P	11. Sidewalks	N	5	S-A	17.	N	N	-	LOAD VIBRATION: <i>Please explain</i> None (X) Minor () Moderate () Severe ()
6. Pipe	N	N	-	12. Utilities	N	7	-	18.	N	N	-	

ITEM 61 CHANNEL & CHANNEL PROTECTION 7

	Dive This Rpt.	Rpt.	DEF		Dive This Rpt.	Rpt.	DEF
1. Channel Scour	N	X	-	5. Utilities	N	N	-
2. Embankment Erosion	N	6	M-P	6. Rip-Rap/Slope Protection	N	N	-
3. Debris	N	N	-	7. Aggradation	N	N	-
4. Vegetation	N	7	-				

STREAM FLOW VELOCITY: Tidal () High () Moderate () Low (X)

ITEM 61 (Dive Report): **N**

ITEM 61 (This Report): **7**

93b-U/W INSP DATE: **00/00/0000**

APPROACH CONDITION

	DEF
a. Appr. pavement condition	7 -
b. Appr. Roadway Settlement	7 -
c. Appr. Sidewalk Settlement	7 -
d.	N -

WEIGHT POSTING

Actual Posting: Not Applicable

Recommended Posting: H 3 3S2 Single

Waived Date: **00/00/0000** EJDMT Date: **00/00/0000**

Signs In Place (Y=Yes, N=No, NR=Not Required):

At bridge		Advance	
N	S	N	S
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Legibility/Visibility

ITEM 36 TRAFFIC SAFETY

	36	COND	DEF
A. Bridge Railing	0	3	S-A
B. Transitions	0	3	S-A
C. Approach Guardrail	0	3	S-A
D. Approach Guardrail Ends	0	3	S-A

ACCESSIBILITY (Y/N/P):

	Needed	Used	Needed	Used
Ladder	N	N		
Boat	Y	Y	N	N
Waders	P	Y		

TOTAL HOURS **6**

PLANS (Y/N): **Y**

(V.C.R.) (Y/N): **N**

TAPE#:

RATING

Rating Report (Y/N): **N**

Date: **00/00/0000**

Inspection data at time of existing rating
I 62: - Date: **00/00/0000**

Recommend for Rating or Rerating (Y/N): **N**

REASON:

If YES please give priority:
HIGH () MEDIUM () LOW ()

X=UNKNOWN N=NOT APPLICABLE H=HIDDEN/INACCESSIBLE R=REMOVED

CITY/TOWN BOXFORD	B.I.N. 89B	BR. DEPT. NO. B-19-005	8.-STRUCTURE NO. B19005-89B-MUN-BRI	INSPECTION DATE MAY 7, 2020
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REMARKS, PHOTOS & SKETCHES

BRIDGE ORIENTATION

The structure is a double barrel rectangular culvert composed of concrete and masonry walls with concrete and granite slabs. The approaches are North and South. The elevations are East and West. The spans were numbered from South to North. Fish Brook flows from West to East. **(Sketches 1,2 and 3).**

ITEM 62 - CULVERT

Item 62.1 - Roof

The roof for both the East and West entrance undersides consists of concrete slabs and then there is approximately 19'-7" of granite slabs making up the remainder of the roof. **(Sketch 1).**

The West fascia has widespread areas of large spalls with exposed reinforcing that have extended down the face from the bridge rail concrete base and the headwall. **(Photo 1).**

Span 1 near the west fascia, the underside of the concrete deck has a spall 30" long x 12" wide x 1.5" deep with exposed and rusted rebar that has 100% section loss. Also, there is an area of scaling and honeycombing up to full width x 2.5' long x 1" deep. **(Photo 2).**

Both span 1 and span 2 near the east end, the joint between the concrete slab and the first granite slab has active leakage with efflorescence. **(Photos 3 and 4).**

Span 2 at the edge of the west fascia, there is a spall up to 7" diameter **(Photo 5)** and the underside of the concrete deck has full length x full width area of honeycombing/scaling with moderate efflorescence **(Photo**

CONDITION RATING GUIDE

	CODE	CONDITION	DEFECTS
	N	NOT APPLICABLE	Use if structure is not a culvert.
G	9	EXCELLENT	No deficiencies.
G	8	VERY GOOD	No noticeable or noteworthy differences which affect the condition of the culvert. Insignificant scrape marks caused by drift.
G	7	GOOD	Shrinkage cracks, light scaling, and insignificant spalling, which does not expose reinforcing steel. Insignificant damage caused by drift with not misalignment and not requiring corrective action. Some minor scouring has occurred near curtain walls, wingwalls, or pipes. Metal culverts have a smooth symmetrical curvature with superficial corrosion and no pitting.
F	6	SATISFACTORY	Deterioration or initial disintegration, minor chloride contamination, cracking with some leaching, or spalls on concrete or masonry walls and slabs. Local minor scouring at curtain walls, wingwalls, or pipes. Metal culverts have a smooth curvature, non-symmetrical shape, significant corrosion or moderate pitting.
F	5	FAIR	Moderate to major deterioration, or disintegration, extensive cracking and leaching, or spalls on concrete or masonry walls and slabs. Minor settlement or misalignment. Noticeable scouring or erosion at curtain walls, wingwalls, or pipes. Metal culverts have significant distortion and deflection in one section, significant corrosion or deep pitting.
P	4	POOR	Large spalls, heavy scaling, wide cracks, considerable efflorescence, or opened construction joints permitting loss of backfill. Considerable settlement or misalignment. Considerable scouring or erosion at curtain walls, wingwalls, or pipes. Metal culverts have significant distortion and deflection throughout, extensive corrosion or deep pitting.
P	3	SERIOUS	Any condition described in Code 4 but which is excessive in scope. Severe movement or differential settlement of the segments, or loss of fill. Holes may exist in walls or slabs. Integral wingwalls, nearly severed from culvert. Severe scour or erosion at curtain walls, wingwalls, or pipes. Metal culverts have extreme distortion and deflection in one section, extensive corrosion, or deep pitting with scattered perforations.
C	2	CRITICAL	Advanced deterioration of primary structural elements. Fatigue cracks in steel or shear cracks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
C	1	"IMMINENT" FAILURE	Bridge closed. Corrective action may put back in light service.
	0	FAILED	Bridge closed. Replacement necessary.

DEFICIENCY REPORTING GUIDE

DEFICIENCY: A defect in a structure that requires corrective action.

CATEGORIES OF DEFICIENCIES:

M= Minor Deficiency - (Examples include but are not limited to: Spalled concrete, minor to moderate corrosion to steel culverts, minor settlement or misalignment, minor scouring, minor damage to guardrail, etc.)

S= Severe/Major Deficiency - (Examples include but are not limited to: Large spalls, wide cracks, moderate to major deterioration in concrete, considerable settlement, considerable scouring or undermining, extensive corrosion and deflection in steel culverts, etc.)

C-S= Critical Deficiency - A deficiency in a structural component or element of a bridge that poses an extreme hazard or unsafe condition to the public. (Follow-up Critical Deficiency Report must be submitted separately)

URGENCY OF REPAIR:

I = Immediate- [Inspector(s) stay at the bridge until the District Maintenance crew or the responsible Agency crew(if not a State bridge) show up and corrective action is taken.]

A = ASAP- [Action will be taken by the District Maintenance Engineer or the Responsible Agency (if not a State owned bridge) upon receipt of the Inspection Report].

P = Prioritize- [Shall be prioritized by District Maintenance Engineer or the Responsible Party (if not a State owned bridge) and repairs made when funds and/or manpower is available].

CITY/TOWN BOXFORD	B.I.N. 89B	BR. DEPT. NO. B-19-005	8.-STRUCTURE NO. B19005-89B-MUN-BRI	INSPECTION DATE MAY 7, 2020
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REMARKS

Item 62.1 - Roof (Cont'd)

6).

Item 62.3 - Walls

There is typical cracking with efflorescence in the mortar between stones at all granite walls. (**Photo 7**).

Both north and south concrete walls typically have minor abrasion along the water line and up to 2" high and efflorescence at the east end. (**Photo 8**).

Item 62.4 - Headwall

The West fascia headwall has large areas of heavily spalled concrete with exposed reinforcing steel that extend down from the bridge rail concrete base. (**Photo 1**).

Item 62.5 - Wingwall

All wingwalls typically have minor abrasion along the water line and up to 2" high.

Item 62.9 - Wearing Surface

There is random transverse hairline cracking mainly in the southbound travel lane.

Item 62.10 - Railing

See Item 36.A

Item 62.11 - Sidewalks

There is a 3'-11" sidewalk on the west side and there is unpaved shoulder on the east side.

The west sidewalk and the curb are continuous pour asphalt surface. The curb has sections that have deteriorated which is propagating into the sidewalk. (**Photo 9**).

Item 62.12 - Utilities

There is a 5" diameter gas pipe located along the west fascia and a 20" diameter utility pipe located along the east fascia.

ITEM 61 - CHANNEL AND CHANNEL PROTECTION

Item 61.2 - Embankment Erosion

There is minor to moderate erosion behind the northeast and southeast wingwalls. (**Photos 10 and 11**).

TRAFFIC SAFETY

Item 36a - Bridge Railing

West bridge rail:

All three concrete posts have heavy spalls with exposed rebars up to full height. (**Photo 12**).

The top rail has split and section loss and is not attached at the center concrete post and the post has heavy spalls with exposed rebars for the full height. (**Photo 12**).

The bridge rail concrete base has large spalling with one fully exposed longitudinal rebar along the full length of the base. (**Photo 1**).

All timber bridge railings have splits and checks up to full length.

CITY/TOWN BOXFORD	B.I.N. 89B	BR. DEPT. NO. B-19-005	8.-STRUCTURE NO. B19005-89B-MUN-BRI	INSPECTION DATE MAY 7, 2020
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REMARKS

Item 36b - Transitions

The approach guardrails are not attached to the bridge railing on all four corners of the bridge.

Item 36c - Approach Guardrail

The approach guardrail at the Northeast, Northwest and Southwest approaches is a two-wire cable rail on concrete posts. Cable wire is mostly missing or ineffective. Concrete posts are heavily deteriorated and ineffective. **(Photos 13, 14 and 15).**

The southeast approach guardrail is a steel rail on steel posts that is too low (resting on the ground) and has major impact damage and is ineffective. It also exhibits 100% section loss at the posts connections. **(Photo 16).**

Item 36d - Approach Guardrail Ends

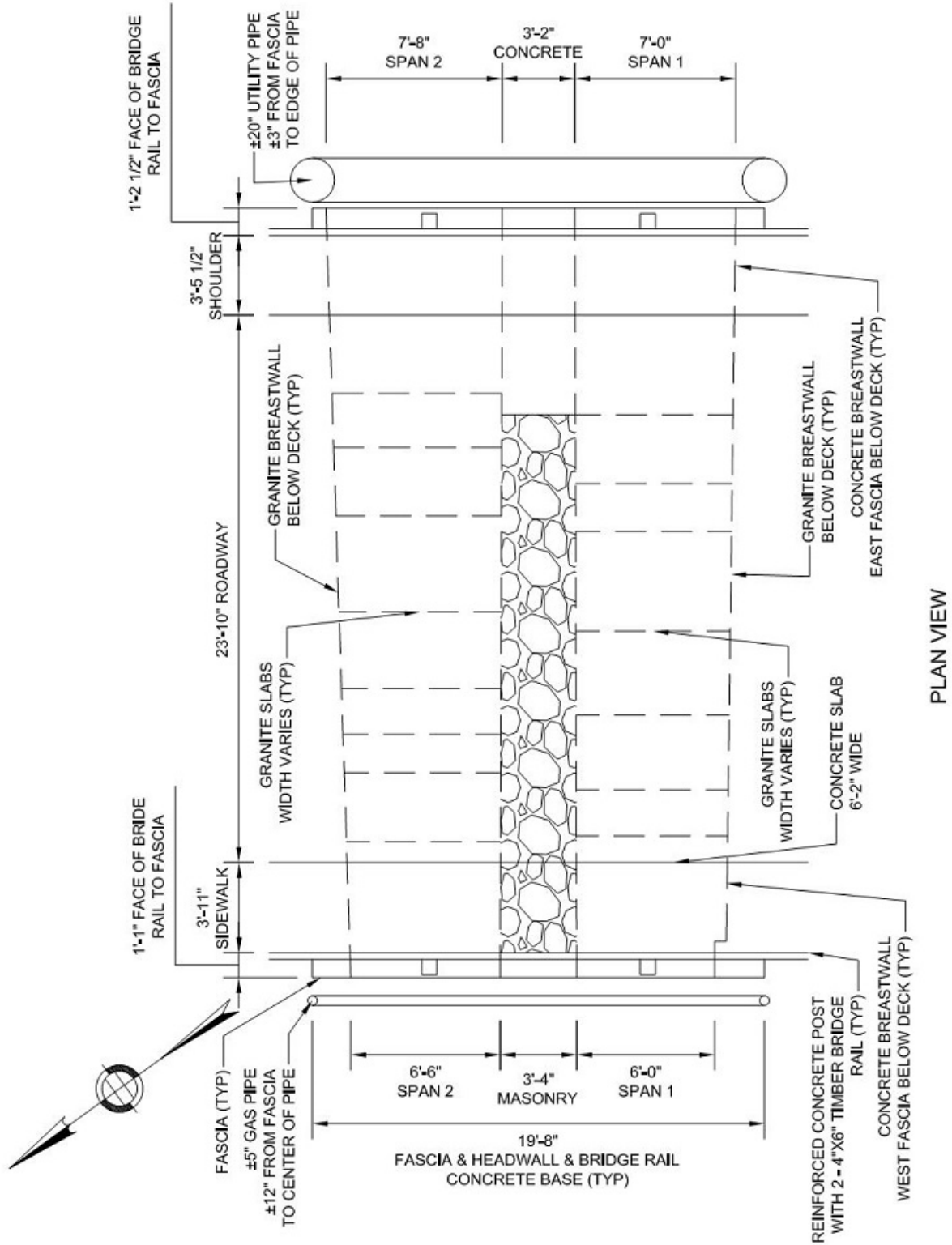
All guardrail ends are either missing or completely ineffective.

Sketch / Photo Log

- Sketch 1 : Plan View.
- Sketch 2 : Cross section at span 2, looking North.
- Sketch 3 : Elevation, looking east.
- Photo 1 : West fascia, areas of heavy and large spalls with exposed and rusted rebars.
- Photo 2 : Span 1, near the west fascia, area of scaling, honeycombing and a spall at the concrete deck with exposed and rusted rebar.
- Photo 3 : Active leakage with heavy efflorescence at the joint between the concrete slab and the first granite slab in span 2, near the east end.
- Photo 4 : Active leakage with heavy efflorescence at the joint between the concrete slab and the first granite slab in span 1, near the east end.
- Photo 5 : Span 2, spall up to 7" diameter at the edge of the west fascia.
- Photo 6 : Span 2, west end, the underside of the concrete deck has full length x full width area of honeycombing/scaling with moderate efflorescence.
- Photo 7 : Typical cracking with efflorescence in the mortar between stones at all granite walls.
- Photo 8 : Typical abrasion along the water line and up to 2' high at the concrete walls. Also note the efflorescence at the east end of both north and south concrete walls. (Northeast wall shown).
- Photo 9 : West sidewalk, deterioration at the curb which is propagating into the sidewalk.
- Photo 10 : Minor erosion behind the southeast wingwall.
- Photo 11 : Minor erosion behind the northeast wingwall.
- Photo 12 : West bridge rail, the top rail has split and is not attached to concrete post. Also note the concrete post has heavy spalls with exposed rebars for the full height.
- Photo 13 : The southwest approach guardrail cables are missing, and the concrete posts heavily deteriorated and ineffective.
- Photo 14 : The northwest approach guardrail lower cable is missing, the upper cable is loose and ineffective and the concrete posts heavily deteriorated.
- Photo 15 : The northeast approach guardrail cables are missing, and the concrete posts heavily deteriorated and ineffective.
- Photo 16 : The southeast approach steel guardrail has 100% section loss, major impact damage and is ineffective.

CITY/TOWN BOXFORD	B.I.N. 89B	BR. DEPT. NO. B-19-005	8.-STRUCTURE NO. B19005-89B-MUN-BRI	INSPECTION DATE MAY 7, 2020
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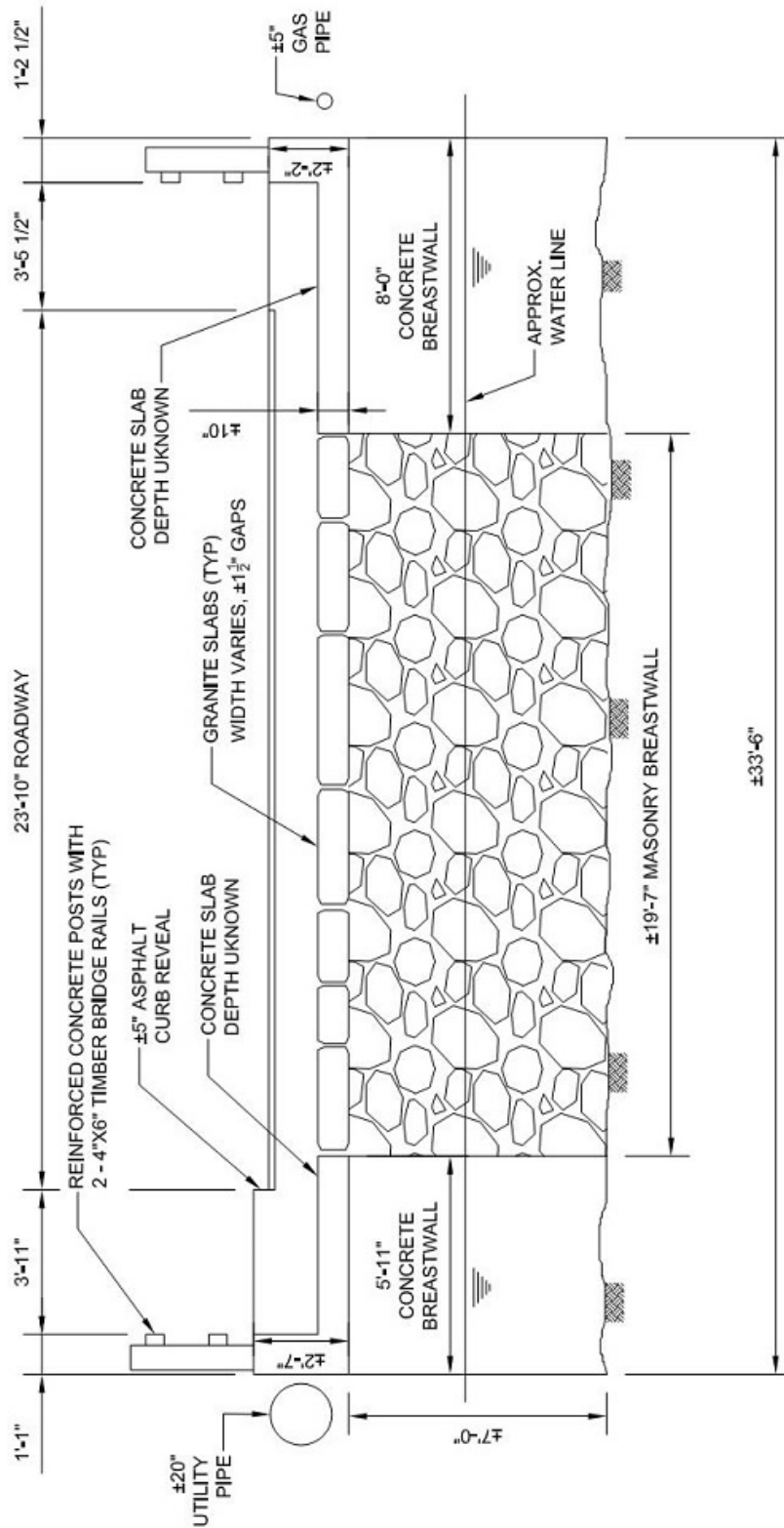
SKETCHES



Sketch 1: Plan View.

CITY/TOWN BOXFORD	B.I.N. 89B	BR. DEPT. NO. B-19-005	8.-STRUCTURE NO. B19005-89B-MUN-BRI	INSPECTION DATE MAY 7, 2020
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SKETCHES

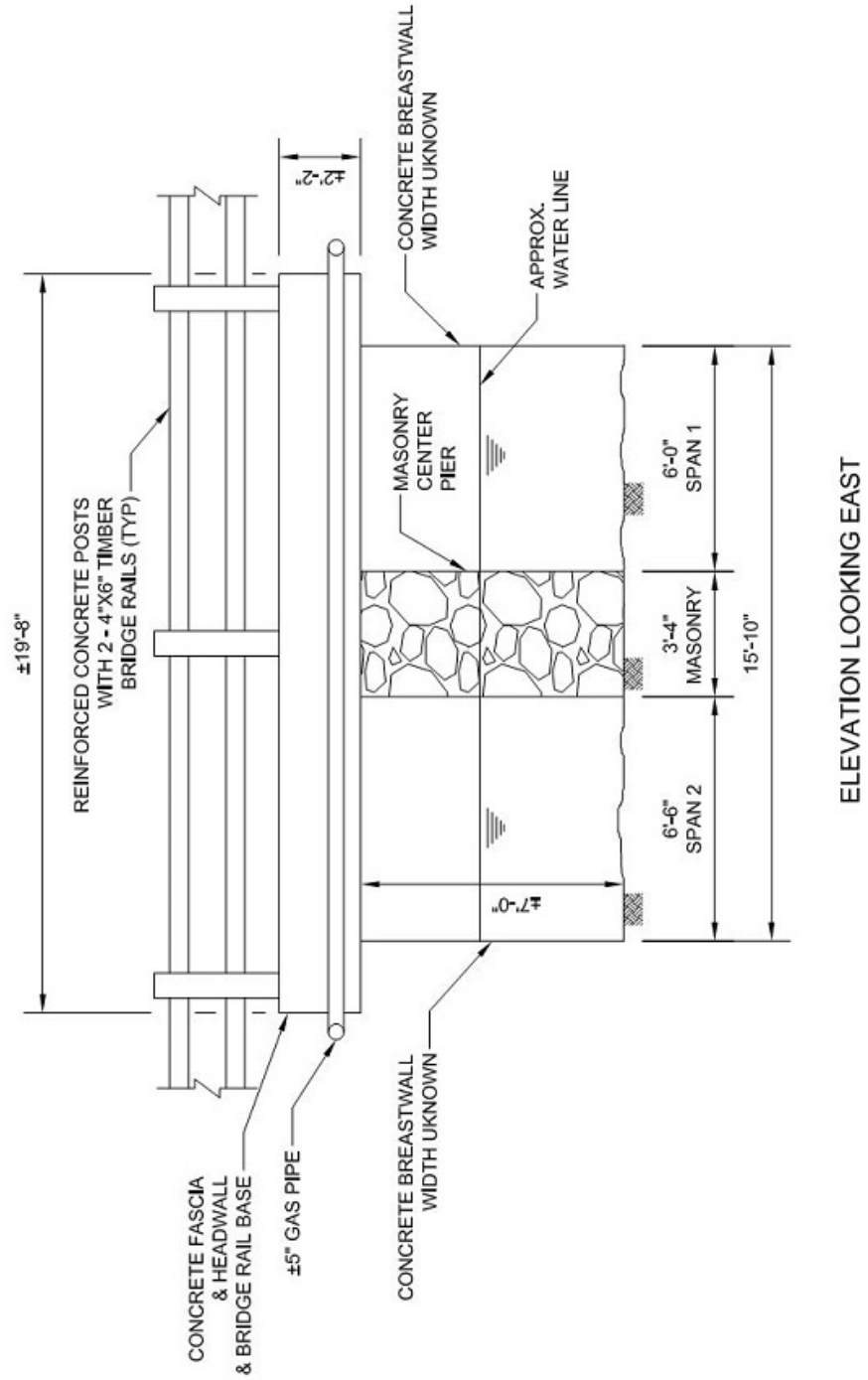


CROSS SECTION @ SPAN 2 LOOKING NORTH

Sketch 2: Cross section at span 2, looking North.

CITY/TOWN BOXFORD	B.I.N. 89B	BR. DEPT. NO. B-19-005	8.-STRUCTURE NO. B19005-89B-MUN-BRI	INSPECTION DATE MAY 7, 2020
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SKETCHES



Sketch 3: Elevation, looking east.

CITY/TOWN BOXFORD	B.I.N. 89B	BR. DEPT. NO. B-19-005	8.-STRUCTURE NO. B19005-89B-MUN-BRI	INSPECTION DATE MAY 7, 2020
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PHOTOS

Photo 1: West fascia, areas of heavy and large spalls with exposed and rusted rebar.



Photo 2: Span 1, near the west fascia, area of scaling, honeycombing and a spall at the concrete deck with exposed and rusted rebar.

CITY/TOWN BOXFORD	B.I.N. 89B	BR. DEPT. NO. B-19-005	8.-STRUCTURE NO. B19005-89B-MUN-BRI	INSPECTION DATE MAY 7, 2020
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PHOTOS



Photo 3: Active leakage with heavy efflorescence at the joint between the concrete slab and the first granite slab in span 2, near the east end.



Photo 4: Active leakage with heavy efflorescence at the joint between the concrete slab and the first granite slab in span 1, near the east end.

CITY/TOWN BOXFORD	B.I.N. 89B	BR. DEPT. NO. B-19-005	8.-STRUCTURE NO. B19005-89B-MUN-BRI	INSPECTION DATE MAY 7, 2020
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PHOTOS

Photo 5: Span 2, spall up to 7" diameter at the edge of the west fascia.



Photo 6: Span 2, west end, the underside of the concrete deck has full length x full width area of honeycombing/scaling with moderate efflorescence.

CITY/TOWN BOXFORD	B.I.N. 89B	BR. DEPT. NO. B-19-005	8.-STRUCTURE NO. B19005-89B-MUN-BRI	INSPECTION DATE MAY 7, 2020
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PHOTOS

Photo 7: Typical cracking with efflorescence in the mortar between stones at all granite walls.



Photo 8: Typical abrasion along the water line and up to 2' high at the concrete walls. Also note the efflorescence at the east end of both north and south concrete walls. (Northeast wall shown).

CITY/TOWN BOXFORD	B.I.N. 89B	BR. DEPT. NO. B-19-005	8.-STRUCTURE NO. B19005-89B-MUN-BRI	INSPECTION DATE MAY 7, 2020
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PHOTOS

Photo 9: West sidewalk, deterioration at the curb which is propagating into the sidewalk.



Photo 10: Minor erosion behind the southeast wingwall.

CITY/TOWN BOXFORD	B.I.N. 89B	BR. DEPT. NO. B-19-005	8.-STRUCTURE NO. B19005-89B-MUN-BRI	INSPECTION DATE MAY 7, 2020
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PHOTOS

Photo 11: Minor erosion behind the northeast wingwall.



Photo 12: West bridge rail, the top rail has split and is not attached to concrete post. Also note the concrete post has heavy spalls with exposed rebar for the full height.

CITY/TOWN BOXFORD	B.I.N. 89B	BR. DEPT. NO. B-19-005	8.-STRUCTURE NO. B19005-89B-MUN-BRI	INSPECTION DATE MAY 7, 2020
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PHOTOS



Photo 13: The southwest approach guardrail cables are missing, and the concrete posts heavily deteriorated and ineffective.



Photo 14: The northwest approach guardrail lower cable is missing, the upper cable is loose and ineffective and the concrete posts heavily deteriorated.

CITY/TOWN BOXFORD	B.I.N. 89B	BR. DEPT. NO. B-19-005	8.-STRUCTURE NO. B19005-89B-MUN-BRI	INSPECTION DATE MAY 7, 2020
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PHOTOS



Photo 15: The northeast approach guardrail cables are missing, and the concrete posts heavily deteriorated and ineffective.



Photo 16: The southeast approach steel guardrail has 100% section loss, major impact damage and is ineffective.

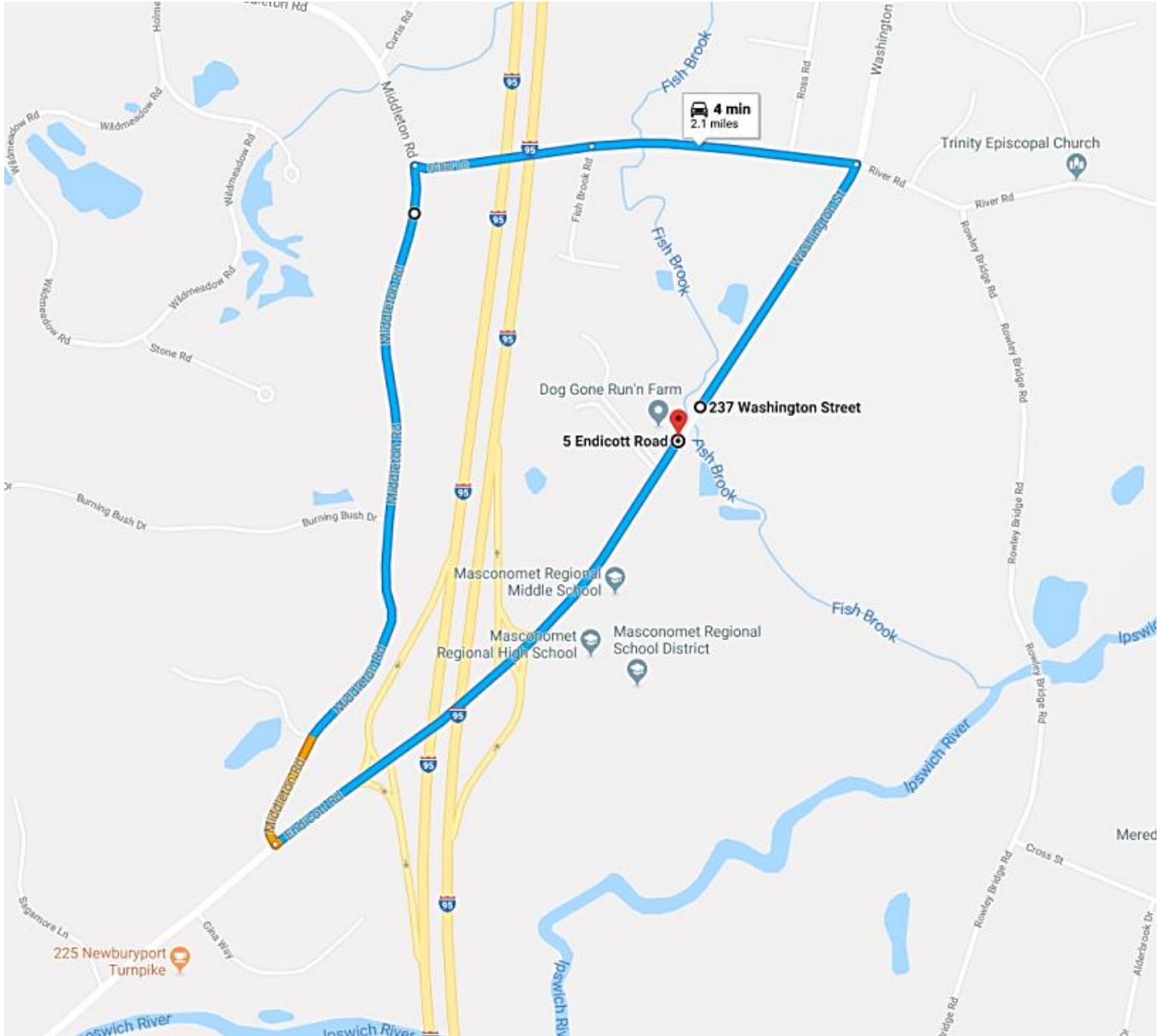
State Information				Classification				Code	
BDEPT# = B19005	Agency Br.No.			(112) NBIS Bridge Length				N	
Town = Boxford	L.O.			(104) Highway System				N	
B.I.N = 89B	AASHTO= 007.0			(26) Functional Class -	Urban Minor Arterial			16	
RANK = 0	H.I. = NA	FHWA Select List= N (6/21/2017)		(100) Defense Highway				0	
Identification				(101) Parallel Structure				N	
(8) Structure Number	B1900589BMUNBRI			(102) Direction of Traffic -	2-way traffic			2	
(5) Inventory Route				(103) Temporary Structure				N	
(2) State Highway Department District	04			(105) Federal Lands Highways				0	
(3) County Code 009	(4) Place code	07420		(110) Designated National Network				N	
(6) Features Intersected	WATER FISH BROOK			(20) Toll -	On free road			3	
(7) Facility Carried	HWY ENDICOTT RD			(21) Maintain -	Town Agency			03	
(9) Location				(22) Owner -	Town Agency			03	
(11) Kilometerpoint	0000.000			(37) Historical Significance	undetermined				
(12) Base Highway Network	N			Condition				Code	
(13) LRS Inventory Route & Subroute	000000000000			(58) Deck				N	
(16) Latitude	42 DEG 37 MIN 50.42 SEC			(59) Superstructure				N	
(17) Longitude	70 DEG 58 MIN 25.69 SEC			(60) Substructure				N	
(98) Border Bridge State Code	Share %			(61) Channel & Channel Protection				7	
(99) Border Bridge Structure No. #				(62) Culverts				6	
Structure Type and Material				Load Rating and Posting				Code	
(43) Structure Type Main:	Masonry	Code 819		(31) Design Load -	Unknown			0	
Culvert	Jointless bridge type: Not applicable			(63) Operating Rating Method -	Allowable Stress (AS)			2	
(44) Structure Type Appr:				(64) Operating Rating				00.0	
Other	Code 000			(65) Inventory Rating Method -	Allowable Stress (AS)			2	
(45) Number of spans in main unit	002			(66) Inventory Rating				00.0	
(46) Number of approach spans	0000			(70) Bridge Posting				0	
(107) Deck Structure Type -	Not applicable		Code N	(41) Structure -	Open			A	
(108) Wearing Surface / Protective System:				Appraisal				Code	
A) Type of wearing surface -	Bituminous		Code 6	(67) Structural Evaluation				2	
B) Type of membrane -	Not applicable=no deck		Code N	(68) Deck Geometry				2	
C) Type of deck protection -	Not applicable=no deck		Code N	(69) Underclearances, vert. and horiz.				N	
Age and Service				(71) Waterway adequacy				6	
(27) Year Built	1850			(72) Approach Roadway Alignment				7	
(106) Year Reconstructed	1900			(36) Traffic Safety Features	0 0 0 0				
(42) Type of Service: On -	Highway			(113) Scour Critical Bridges				6	
Under -	Waterway		Code 15	Inspections					
(28) Lanes: On Structure	02	Under structure 00		(90) Inspection Date	05/07/20		(91) Frequency	24 MO	
(29) Average Daily Traffic	007200			(92) Critical Feature Inspection:	(93) CFI DATE				
(30) Year of ADT	2018	(109) Truck ADT	05 %	(A) Fracture Critical Detail	N	00	MO A)	00/00/00	
(19) Bypass, detour length	004 KM			(B) Underwater Inspection	N	00	MO B)	00/00/00	
Geometric Data				(C) Other Special Inspection	N	00	MO C)	00/00/00	
(48) Length of maximum span	0002.4 M			(*) Other Inspection ()	N	00	MO *)	00/00/00	
(49) Structure Length	00005.1 M			(*) Closed Bridge	N	00	MO *)	00/00/00	
(50) Curb or sidewalk:	Left	01.2 M	Right 00.0 M	(*) UW Special Inspection	N	00	MO *)	00/00/00	
(51) Bridge Roadway Width Curb to Curb	007.3 M			(*) Damage Inspection	MO *)			00/00/00	
(52) Deck Width Out to Out	010.2 M			Rating Loads					
(32) Approach Roadway Width (w/shoulders)	008.3 M			Report Date	00/00/00	H20	Type 3	Type 3S2	Type HS
(33) Bridge Median -	No median		Code 0	Operating	0.0	0.0	0.0	0.0	0.0
(34) Skew 00 DEG	(35) Structure Flared N			Inventory	0.0	0.0	0.0	0.0	0.0
(10) Inventory Route MIN Vert Clear	99.99 M			Field Posting					
(47) Inventory Route Total Horiz Clear	08.3 M			Status	Posting Date 00/00/00				
(53) Min Vert Clear Over Bridge Rdwy	99.99 M			Actual	2 Axle	3 Axle	5 Axle	Single	
(54) Min Vert Underclear ref	N		00.00 M	Recommended					
(55) Min Lat Underclear RT ref	N		00.0 M	Missing Signs	N				
(56) Min Lat Underclear LT	00.0 M			Misc.					
Navigation Data				Bridge Name	N Anti-missile fence N Acrow Panel N Jointless Bridge				
(38) Navigation Control -	No navigation control on waterway			Freeze/Thaw	N : Not Applicable				
(111) Pier Protection	Code 0			Accessibility (Needed/Used)					
(39) Navigation Vertical Clearance	000.0 M			N / N	Liftbucket	N / N	Rigging	N / N Other	
(116) Vert-lift Bridge Nav Min Vert Clear	M			N / N	Ladder	N / N	Staging		
(40) Navigation Horizontal Clearance	0000.0 M			Y / Y	Boat	N / N	Traffic Control		
				P / Y	Wader	N / N	RR Flaggperson	Inspection	
				N / N	Inspector 50	N / N	Police	Hours:	006

Detour Plan

Municipal Small Bridge Program Application

DETOUR MAP:

Bridge B-19-005 (89B); Endicott Road = Washington Street over Fish Brook



Consultant Scope of Work

SCOPE OF SERVICES

The Town of Boxford (Client) has retained TEC, Inc. (TEC) to provide engineering services for the superstructure replacement of the Endicott Road Bridge over the Fish Brook between the Towns of Boxford and Topsfield. Preliminary investigations indicate that this bridge is a candidate for a superstructure replacement.

Task 1 – Wetland Delineation and Site Survey

- TEC's Subconsultant shall perform wetland delineations at the bridge location including placement of numbered sequences of flags by a qualified wetland scientist to identify and delineate the boundary and type of wetland resources present within 100 feet of the limits of work at the bridge, including a wetland report with DEP Field Delineation forms.
- Perform a field survey (including topographic, utility and boundary survey) of the project limits and within 100' of structure per MassDOT LRFD Bridge Manual. Field survey will extend 25' off the edge of pavement or curb line.
- Establish survey control on Massachusetts State Plane Coordinate System (NAD83) and North American Vertical Datum of 1988.
- Bridge grid survey per MassDOT's LRFD Bridge Manual.
- Develop the base plan from the field survey and generate a surface and 1' contours within the project limits.
- Research, locate and plot any underground utilities onto the base plan.
- Research street and abutting properties, locate monuments and plot road layout onto the base plan.
- Since the hydraulic opening will not be altered, it is assumed that a full hydraulic report will not be necessary. Therefore, the stream section survey shall be limited to each face of the bridge and another section 25' upstream and downstream.

Task 2 – Geotechnical Engineering and Reporting

- Since Endicott Road is categorized as an Urban Minor Arterial, perform a one-day exploration program to include two borings at the existing culvert location, straddling the existing structure. The boring depth is planned to be around 35 feet below existing road grade or the top of bedrock whichever comes first. Borings will be performed in accordance with MassDOT standards. If bedrock is encountered, a 10-foot bedrock core will be sampled at the boring and will be performed in accordance with MassDOT standards. The subsurface information will be summarized in boring logs and gradation (sieve analysis) and/or Atterberg limits testing will be performed on a few soil samples if needed. TEC's Subconsultant has included the cost for a police detail for one day to control traffic during the on-site drilling.
- Compile and analyze the data obtained to determine:
 - the allowable bearing capacity and settlement of the foundations,
 - lateral foundation performance,
 - seismic issues, including site class and liquefaction potential for soils, and
 - construction, earth support, and dewatering issues.
- Prepare recommendations summarizing the results of the findings in a report, prepared in accordance with the MassDOT LRFD Bridge Manual.
- Obtain stream sediment samples at the bridge crossing location within the study area to supplement the Hydrologic and Hydraulic Analysis and Reporting.

Task 3 – Hydrologic and Hydraulic Analysis and Reporting

- A full Hydraulic Report will be prepared in accordance for the MassDOT Chapter 85 Review Matrix because Endicott Road is considered a Urban Minor Arterial.
- Review Hydrology of the area based on sources including USGS StreamStats, FEMA FIS for Essex County, nearby USGS Stream Gauges (if available), FHWA Peak Discharge Regressions, and NETC Peak Discharge Regressions to generate flow data representative of the stream crossing site. Calculate peak discharges for the 10-yr, 25-yr, 50-yr, 100-yr, 200-yr and 500-yr return frequencies per MassDOT LRFD Bridge Design Manual requirements.

- Perform a site visit to become familiar with the site and document current conditions. Perform confirmation measurements of the stream and existing structure, and to evaluate stream and floodplain conditions to aid in the development of a hydraulic model.
- Use field survey collected in accordance with and to the extent of the MassDOT LRFD Bridge Manual merged with available LiDAR DER(s) to produce an accurate representation of existing conditions. The model will be georeferenced utilizing Massachusetts State Plan NAD83 (feet) horizontal datum and NAVD 88 (feet) vertical datum and produced in accordance with the MassDOT LRFD H&H modeling requirements.
- Use the hydraulic model to evaluate two (2) alternative proposed bridge configurations. Results of the alternatives analysis will include profiles, water surface elevations, and velocities for the design flow event. The design flow event will be based on the Highway Functional Classification for Endicott Road based on MassDOT guidelines and the MassDOT Chapter 85 Review matrix.
- Use the hydraulic model to evaluate scour in accordance with the MassDOT LRFD Bridge Manual for the design frequency required based on the Highway Functional Class.
- Conduct a no-rise analysis in accordance with the MassDOT LRFD Bridge Manual requirements to the extent practical using a FEMA effective model. The modeling will include the existing conditions model, which will serve as the baseline for the no-rise evaluation and a proposed conditions model, based on the preferred alternative, to be compared against the existing conditions model. The analysis will be suitable for evaluating any difference in water surface elevations between existing and proposed conditions.
- Compile the results of the hydrology, hydraulics, scour and no-rise analyses in an H&H Report in conformance with the MassDOT LRFD Bridge Manual.

Task 4 – Preliminary Design and Engineering

- Perform a site visit to document field measurements and condition of the various bridge components and confirm with the latest MassDOT Bridge Inspection.
- Develop preliminary plans, calculations, and details for proposed replacement structure. Based on early assessments by TEC, it is anticipated that the superstructure will be replaced with a precast prestressed deck beam superstructure with a cast in place topping slab and compliant traffic safety features.
- Prepare temporary traffic management plans in accordance with MUTCD and MassDOT standards.
- Prepare preliminary construction cost estimate for Client review to aid in future capital planning discussions for a future Small Bridge Grant application.
- Review preliminary designs and estimates with Client for feedback prior to submitting to Chapter 85 review.
- Submit the preliminary plans to MassDOT for review.

Task 5 – Final Design and Engineering

- Respond to MassDOT comments on the 25% design plans. Incorporate changes requested and resubmit 25% design plans to MassDOT (if deemed necessary by MassDOT).
- Prepare a final set of Construction Plans and one set of design calculations (checked by a second engineer per the MassDOT Chapter 85 review matrix).
- Finalize project specifications. Specifications shall be based on MassDOT's latest Standard Specifications.
- Submit plans, specifications, memorandum (Hydraulic and Geotechnical) and calculations to MassDOT for Chapter 85 review.
- Review, provide responses and incorporate MassDOT comments.
- Resubmit package to MassDOT for approval.
- Provide a final construction cost estimate to the Client for future capital funds and future grant opportunities.

Task 6 – Environmental Permitting

- Due to the limited in-water work associated with a superstructure replacement, it is assumed that the permitting efforts will be limited.
- Prepare and file a Notice of Intent (NOI) in accordance with the Wetlands Protection Act and local bylaws as applicable for the structure location. Attend up to two (2) Conservation Commission hearings.
- File a Self-Verification Form (SV) with the US Army Corps of Engineers (USACE) prior to construction.

Construction Cost Estimate

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION
BRIDGE SECTION

BRIDGE NO.
B-19-005
Page 1 of 2

DATE 2/9/2022

TOWN Boxford

CLASS HL-93

STATION _____ ROAD Endicott Road = Washington Street

OVER Fish Brook

TYPE CONCRETE WIDTH 34 FT

SIDEWALKS 1

SPANS 1 LENGTH 16 FT

VERT. CL. TBD

>>> PRELIMINARY ESTIMATE OF QUANTITIES AND COST OF PROPOSED BRIDGE <<<

ITEM	QTY	UNIT	DESCRIPTION	UNIT PRICE	AMOUNT
114.1	1	LS	DEMOLITION OF SUPERSTRUCTURE B-19-005	\$75,000.00	\$75,000.00
120.1	30	CY	UNCLASSIFIED EXCAVATION	\$80.00	\$2,400.00
140.	65	CY	BRIDGE EXCAVATION	\$70.00	\$4,550.00
141.1	5	CY	TEST PIT FOR EXPLORATION	\$130.00	\$650.00
151.	50	CY	GRAVEL BORROW	\$55.00	\$2,750.00
170.	200	SY	FINE GRADING AND COMPACTING	\$12.00	\$2,400.00
443.	2	MGL	WATER FOR ROADWAY DUST CONTROL	\$85.00	\$170.00
450.22	25	TON	SUPERPAVE SURFACE COURSE - 9.5 (SSC - 9.5)	\$200.00	\$5,000.00
450.31	25	TON	SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC -12.5)	\$200.00	\$5,000.00
452.	5	GAL	ASPHALT EMULSION FOR TACK COAT	\$9.00	\$45.00
453.	70	FT	HMA JOINT SEALANT	\$2.00	\$140.00
620.1	160	FT	STEEL W BEAM HIGHWAY GUARD (SINGLE FACED)	\$30.00	\$4,800.00
627.1	2	EA	TRAILING ANCHORAGE	\$2,000.00	\$4,000.00
627.6	4	EA	STEEL HIGHWAY GUARD TRANSITION BEAM	\$2,500.00	\$10,000.00
627.8	2	EA	STEEL BEAM HIGHWAY GUARD END TREATMENT	\$6,500.00	\$13,000.00
630.2	160	FT	HIGHWAY GUARD REMOVED AND DISCARDED	\$7.00	\$1,120.00
657.	200	FT	TEMPORARY FENCE	\$22.00	\$4,400.00
697.	200	FT	SEDIMENTATION FENCE	\$9.00	\$1,800.00
697.2	50	FT	FLOATING SILT FENCE	\$55.00	\$2,750.00
748.	1	LS	MOBILIZATION	\$20,000.00	\$20,000.00
767.12	100	FT	COMPOST FILTER TUBES	\$7.00	\$700.00
769.	400	SF	PAVEMENT MILLING MULCH UNDER GUARD RAIL	\$12.00	\$4,800.00
852.	300	SF	SAFETY SIGNING FOR TRAFFIC MANAGEMENT	\$15.00	\$4,500.00
853.2	150	FT	TEMPORARY BARRIER (TL-2)	\$75.00	\$11,250.00
856.12	180	DAY	PORTABLE CHANGEABLE MESSAGE SIGN	\$32.00	\$5,760.00
866.106	120	FT	6 INCH REFLECTORIZED WHITE LINE (THERMOPLASTIC)	\$1.50	\$180.00
867.112	120	FT	12 INCH REFLECTORIZED YELLOW LINE (THERMOPLASTIC)	\$5.00	\$600.00
904.3	10	CY	5000 PSI, 3/4", 685 HP CEMENT CONCRETE	\$2,500.00	\$25,000.00
994.1	520	SF	TEMPORARY PROTECTIVE SHIELDING	\$15.00	\$7,800.00
995.	1	LS	BRIDGE SUPERSTRUCTURE, BRIDGE NO. R-09-003	\$403,075.00	\$403,075.00
				SUBTOTAL =	\$623,640
				25% CONTINGENCY =	\$155,910
				ENGINEERING, SURVEY, PERMITTING =	\$0
				POLICE =	\$20,000
				GRAND TOTAL =	\$799,550

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION		BRIDGE NO.			
HIGHWAY DIVISION		B-19-005			
BRIDGE SECTION		Page 2 of 2			
DATE	2/9/2022				
TOWN	Boxford	CLASS	HL-93		
STATION	ROAD	OVER	Fish Brook		
	Endicott Road = Washington Street				
TYPE	CONCRETE	WIDTH	34FT		
		SIDEWALKS	1		
SPANS	1	LENGTH	16 FT		
		VERT. CL.	TBD		
< PRELIMINARY ESTIMATE OF QUANTITIES AND COST OF PROPOSED BRIDGE >					
ITEM	QTY	UNIT	DESCRIPTION	UNIT PRICE	AMOUNT
<u>BREAKDOWN OF ITEM 995.01</u>					
BRIDGE STRUCTURE, BRIDGE NO. B-19-005					
930.305	150	FT	PRECAST CONCRETE DECK BEAMS	\$550.00	\$82,500.00
965.	100	SY	MEMBRANE WATERPROOFING FOR BRIDGE DECKS	\$75.00	\$7,500.00
904.3	25	CY	5000 PSI, 3/4 IN., 685 HP CEMENT CONCRETE	\$2,500.00	\$62,500.00
904.4	25	CY	4000 PSI, 3/4 IN., 585 HP CEMENT CONCRETE	\$1,200.00	\$30,000.00
910.1	38000	LB	STEEL REINFORCEMENT FOR STRUCTURES - EPOXY COATED	\$4.00	\$152,000.00
975.1	40	FT	METAL BRIDGE RAILING (3 RAIL). STEEL (S3-TL4)	\$400.00	\$16,000.00
10% CONTINGENCY =					\$52,575.00
TOTAL =					\$403,075
ESTIMATED BY: AJE		CHECKED BY:		APPROVED BY:	
ITEM 995.01 SAY 1 LS					



Photographs

Municipal Small Bridge Program Application



Photo 1: General elevation (looking southwest).



Photo 2: General topside looking west, note poor condition of sidewalk

Municipal Small Bridge Program Application



Photo 3: Underside of bridge, looking west



Photo 4: Northeast approach showing substandard traffic safety features (typical)



State Aid Reimbursable Programs Preliminary Estimate Form

Municipality: Boxford
 Project Name: Bridge Superstructure Design
 Project Location: Endicott Road over Fish Brook

Contract #: _____
 Program: Small Bridge

Item #	Description of Item	Unit	Quantity	Unit Price	Total Cost
Task 1	Wetland Delineation & Site Survey	Lump Sum	1	\$ 10,000.00	\$ 10,000.00
					\$ -
Task 2	Geotechnical Engineering & Reporting	Lump Sum	1	\$ 20,000.00	\$ 20,000.00
					\$ -
Task 3	Hydrologic/Hydraulic Analysis & Reporting	Lump Sum	1	\$ 8,000.00	\$ 8,000.00
					\$ -
Task 4	Preliminary Design & Engineering	Lump Sum	1	\$ 30,000.00	\$ 30,000.00
					\$ -
Task 5	Final Design & Engineering	Lump Sum	1	\$ 32,000.00	\$ 32,000.00
					\$ -
					\$ -
					\$ -
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					\$ -
					\$ -
					\$ -
Total					\$ 100,000.00

[When developing cost estimates, municipalities may use the State Aid Reimbursable Programs Estimating Tool \(SARPET\), which can be found online at www.mass.gov/state-aid-reimbursable-programs-estimating-tool.](http://www.mass.gov/state-aid-reimbursable-programs-estimating-tool)

HED-614 (R) _____
 Supervisor/Foreman

_____ Date

Municipal Bridge Projects MGL Chapter 85 Section 35 Review Process

Design Requirements and Submittals for New Bridge and Full Bridge Replacement Projects

NOTE: Design Requirements to be used depend on the Category of the Proposed Structure and not on the Category of the Existing Structure

Note: If the Category of the Proposed Structure is neither BRI nor NBI (i.e., span ≤ 10 feet), a Chapter 85 review is not required

If the Category of the Proposed Structure is a BRI Bridge (10 feet < span ≤ 20 feet)

Roadway Functional Class	Hydraulic Design	Geotechnical Design	Structural Design	Construction Details	Design Review Submittals	Other Considerations
<p>Rural Minor Collector Rural Local Road Urban Collector Urban Local Road</p>	<p>Hydraulic report per Bridge Manual (except as noted below)</p> <p>Less than 2 feet of freeboard</p> <p>Flood frequency: 10 year Design Scour freq.: 25 year Check Scour freq.: 50 year</p> <p>Must be scour stable after Design Scour Event but not necessarily available for use.</p>	<p>Geotechnical Report per Bridge Manual (except as noted below)</p> <p>At least one boring to refusal below bottom of footing or pile tip for every 30 feet of abutment or culvert width. If rock is encountered, a 10 foot core is recommended.</p>	<p>Design in accordance with AASHTO LRFD for HL-93 Design Loading.</p> <p>Bridge Manual DL and LL load distribution procedure if applicable.</p> <p>Seismic: AASHTO Guide Specifications for SDC A requirements.</p> <p>If a pre-fabricated structure that is designed by the fabricator: when the Contractor submits the fabricator design calculations and shop drawings, the municipality's Designer of Record shall review and accept the design.</p>	<p>Need not follow MassDOT Bridge Manual construction details.</p> <p>If not using standard MassDOT bridge railings or barriers and transitions, those used must be crash tested to either NCHRP 350 or MASH, Test Level 2 minimum if roadway speed ≤ 45 mph, minimum Test Level 3 if roadway speed > 45 mph. Provide 42" railing height if pedestrians are allowed on bridge.</p>	<p>Hydraulic Report (if over water)</p> <p>Geotechnical Report</p> <p>Complete final set of Construction Plans and one set of design calculations checked by a second engineer for MassDOT review.</p> <p>If a pre-fabricated structure, submit the shop drawings and fabricator design calculations after they have been reviewed and accepted by the municipality's Designer of Record.</p> <p>After MassDOT accepts the design, a complete final set of Construction Plan mylars with the MassDOT Chapter 85 approval stamp printed on each sheet for Bridge Engineer's signature.</p>	<p>Evaluation of structure from a Cultural Resources standpoint.</p> <p>Consider Stream Crossing Standards requirements.</p> <p>Consider "no rise" guidelines for NFIP regulatory floodways.</p> <p>Consider Complete Streets guidelines.</p> <p>Provide for utilities (water, gas, etc.) if it is expected that they will be installed in the future.</p> <p>Environmental permitting may put restrictions on time of year when work can be done in the water.</p>
<p>Rural Major Collector Urban Minor Arterial</p>	<p>Hydraulic report per Bridge Manual</p> <p>Provide 2 feet of freeboard</p> <p>Flood frequency: 25 year Design Scour freq.: 50 year Check Scour freq.: 100 year</p> <p>Must be scour stable and available for limited use after the Design Scour Event.</p>	<p>Geotechnical Report per Bridge Manual</p> <p>Perform a Design Boring program in accordance with Bridge Manual Part I, Section 1.2.</p>	<p>Design in accordance with AASHTO LRFD for HL-93 Design Loading</p> <p>Bridge Manual DL and LL load distribution procedure if applicable.</p> <p>Seismic design per Bridge Manual for a 1000 year return period event.</p> <p>If a pre-fabricated structure that is designed by the fabricator: when the Contractor submits the fabricator design calculations and shop drawings, the municipality's Designer of Record shall review and accept the design.</p>	<p>If using MassDOT standard bridge details, follow MassDOT Bridge Manual construction details.</p> <p>Use MassDOT bridge railings and barriers and transitions.</p>	<p>Hydraulic Report (if over water)</p> <p>Geotechnical Report</p> <p>Complete final set of Construction Plans and one set of design calculations checked by a second engineer.</p> <p>If a pre-fabricated structure, submit the shop drawings and fabricator design calculations after they have been reviewed and accepted by the municipality's Designer of Record.</p> <p>After MassDOT accepts the design, a complete final set of Construction Plan mylars with the MassDOT Chapter 85 approval stamp printed on each sheet for Bridge Engineer's signature.</p>	<p>Evaluation of structure from a Cultural Resources standpoint.</p> <p>Consider Stream Crossing Standards requirements.</p> <p>Consider "no rise" guidelines for NFIP regulatory floodways.</p> <p>Consider Complete Streets guidelines.</p> <p>Provide for utilities (water, gas, etc.) if it is expected that they will be installed in the future.</p> <p>Environmental permitting may put restrictions on time of year when work can be done in the water.</p>

If the Category of the Proposed Structure is a BRI Bridge (10 feet < span ≤ 20 feet) (Continued)

Roadway Functional Class	Hydraulic Design	Geotechnical Design	Structural Design	Construction Details	Design Review Submittals	Other Considerations
<p>Rural Principal Arterial Rural Minor Arterial Urban Principal Arterial Or Any structure on the National Highway System (NHS) (See Note 1 Below)</p>	<p>Hydraulic report per Bridge Manual</p> <p>Provide 2 feet of freeboard</p> <p>Flood frequency: 50 year Design Scour freq.: 100 year Check Scour freq.: 200 year</p> <p>Must be scour stable and available for limited use after the Check Scour Event.</p>	<p>Geotechnical Report per Bridge Manual</p> <p>Perform a Design Boring program in accordance with Bridge Manual Part I, Section 1.2.</p>	<p>Design in accordance with AASHTO LRFD for HL-93 Design Loading.</p> <p>Bridge Manual DL and LL load distribution procedure if applicable.</p> <p>Seismic design per Bridge Manual for a 1000 year return period event, or 2500 year return period event for NHS bridges, based on the SDC of the site.</p> <p>If a pre-fabricated structure that is designed by the fabricator: when the Contractor submits the fabricator design calculations and shop drawings, the municipality's Designer of Record shall review and accept the design.</p>	<p>If using MassDOT standard bridge details, follow MassDOT Bridge Manual construction details.</p> <p>Use MassDOT bridge railings and barriers and transitions.</p>	<p>Hydraulic Report (if over water)</p> <p>Geotechnical Report</p> <p>Complete final set of Construction Plans and one set of design calculations checked by a second engineer.</p> <p>If a pre-fabricated structure, submit the shop drawings and fabricator design calculations after they have been reviewed and accepted by the municipality's Designer of Record.</p> <p>After MassDOT accepts the design, a complete final set of Construction Plan mylars with the MassDOT Chapter 85 approval stamp printed on each sheet for Bridge Engineer's signature.</p>	<p>Evaluation of structure from a Cultural Resources standpoint.</p> <p>Consider Stream Crossing Standards requirements.</p> <p>Consider "no rise" guidelines for NFIP regulatory floodways.</p> <p>Consider Complete Streets guidelines.</p> <p>Provide for utilities (water, gas, etc.) if it is expected that they will be installed in the future.</p> <p>Environmental permitting may put restrictions on time of year when work can be done in the water.</p>

If the Category of the Proposed Structure is a NBI Bridge (20 feet < clear span)

Roadway Functional Class	Hydraulic Design	Geotechnical Design	Structural Design	Construction Details	Design Review Submittals	Other Considerations
<p>Rural Minor Collector Rural Local Road Urban Collector Urban Local Road</p>	<p>Hydraulic report per Bridge Manual (except as noted below)</p> <p>Provide 2 feet of freeboard</p> <p>Flood frequency: 10 year Design Scour freq.: 25 year Check Scour freq.: 50 year</p> <p>Must be scour stable after Design Scour Event but not necessarily available for use.</p>	<p>Geotechnical Report per Bridge Manual (except as noted below)</p> <p>Perform a Design Boring program in accordance with Bridge Manual Part I, Section 1.2.</p>	<p>Design in accordance with AASHTO LRFD for HL-93 Design Loading and following Bridge Manual guidelines.</p> <p>Seismic design per Bridge Manual for a 1000 year return period event based on the SDC of the site.</p> <p>If a pre-fabricated structure that is designed by the fabricator: when the Contractor submits the fabricator design calculations and shop drawings, the municipality's Designer of Record shall review and accept the design.</p>	<p>Need not follow MassDOT Bridge Manual construction details.</p> <p>If not using standard MassDOT bridge railings or barriers and transitions, those used must be crash tested to either NCHRP 350 or MASH, Test Level 2 minimum if roadway speed ≤ 45 mph, minimum Test Level 3 if roadway speed > 45 mph. Provide 42" railing height if pedestrians are allowed on bridge.</p>	<p>Hydraulic Report (if over water)</p> <p>Geotechnical Report</p> <p>Complete final set of Construction Plans and one set of design calculations checked by a second engineer.</p> <p>If a pre-fabricated structure, submit the shop drawings and fabricator design calculations after they have been reviewed and accepted by the municipality's Designer of Record.</p> <p>After MassDOT accepts the design, a complete final set of Construction Plan mylars with the MassDOT Chapter 85 approval stamp printed on each sheet for Bridge Engineer's signature.</p>	<p>Evaluation of structure from a Cultural Resources standpoint.</p> <p>Consider Stream Crossing Standards requirements.</p> <p>Consider "no rise" guidelines for NFIP regulatory floodways.</p> <p>Consider Complete Streets guidelines.</p> <p>Provide for utilities (water, gas, etc.) if it is expected that they will be installed in the future.</p> <p>Environmental permitting may put restrictions on time of year when work can be done in the water.</p>

If the Category of the Proposed Structure is a NBI Bridge (20 feet < clear span) (Continued)

Roadway Functional Class	Hydraulic Design	Geotechnical Design	Structural Design	Construction Details	Design Review Submittals	Other Considerations
<p>Rural Major Collector Urban Minor Arterial</p>	<p>Hydraulic report per Bridge Manual</p> <p>Provide 2 feet of freeboard</p> <p>Flood frequency: 25 year Design Scour freq.: 50 year Check Scour freq.: 100 year</p> <p>Must be scour stable and available for limited use after the Design Scour Event.</p>	<p>Geotechnical Report per Bridge Manual</p> <p>Perform a Design Boring program in accordance with Bridge Manual Part I, Section 1.2.</p>	<p>Design in accordance with AASHTO LRFD for HL-93 Design Loading and following Bridge Manual guidelines.</p> <p>Seismic design per Bridge Manual for a 1000 year return period event based on the SDC of the site.</p> <p>If a pre-fabricated structure that is designed by the fabricator: when the Contractor submits the fabricator design calculations and shop drawings, the municipality's Designer of Record shall review and accept the design.</p>	<p>If using MassDOT standard bridge details, follow MassDOT Bridge Manual construction details</p> <p>Use MassDOT bridge railings and barriers and transitions.</p>	<p>Hydraulic Report (if over water)</p> <p>Geotechnical Report</p> <p>Complete final set of Construction Plans and one set of design calculations checked by a second engineer.</p> <p>If a pre-fabricated structure, submit the shop drawings and fabricator design calculations after they have been reviewed and accepted by the municipality's Designer of Record.</p> <p>After MassDOT accepts the design, a complete final set of Construction Plan mylars with the MassDOT Chapter 85 approval stamp printed on each sheet for Bridge Engineer's signature.</p>	<p>Evaluation of structure from a Cultural Resources standpoint.</p> <p>Consider Stream Crossing Standards requirements.</p> <p>Consider "no rise" guidelines for NFIP regulatory floodways.</p> <p>Consider Complete Streets guidelines.</p> <p>Provide for utilities (water, gas, etc.) if it is expected that they will be installed in the future.</p> <p>Environmental permitting may put restrictions on time of year when work can be done in the water.</p>
<p>Rural Principal Arterial Rural Minor Arterial Urban Principal Arterial Or Any structure on the National Highway System (NHS) (See Note 1 Below)</p>	<p>Hydraulic report per Bridge Manual</p> <p>Provide 2 feet of freeboard</p> <p>Flood frequency: 50 year Design Scour freq.: 100 year Check Scour freq.: 200 year</p> <p>Must be scour stable and available for limited use after the Check Scour Event.</p>	<p>Geotechnical Report per Bridge Manual</p> <p>Perform a Design Boring program in accordance with Bridge Manual Part I, Section 1.2.</p>	<p>Design in accordance with AASHTO LRFD for HL-93 Design Loading and following Bridge Manual guidelines.</p> <p>Seismic design per Bridge Manual for a 1000 year return period event, or 2500 year return period event for NHS bridges, based on the SDC of the site.</p> <p>If a pre-fabricated structure that is designed by the fabricator: when the Contractor submits the fabricator design calculations and shop drawings, the municipality's Designer of Record shall review and accept the design.</p>	<p>If using MassDOT standard bridge details, follow MassDOT Bridge Manual construction details.</p> <p>Use MassDOT bridge railings and barriers and transitions.</p>	<p>Hydraulic Report (if over water)</p> <p>Geotechnical Report</p> <p>Complete final set of Construction Plans and one set of design calculations checked by a second engineer.</p> <p>If a pre-fabricated structure, submit the shop drawings and fabricator design calculations after they have been reviewed and accepted by the municipality's Designer of Record.</p> <p>After MassDOT accepts the design, a complete final set of Construction Plan mylars with the MassDOT Chapter 85 approval stamp printed on each sheet for Bridge Engineer's signature.</p>	<p>Evaluation of structure from a Cultural Resources standpoint.</p> <p>Consider Stream Crossing Standards requirements.</p> <p>Consider "no rise" guidelines for NFIP regulatory floodways.</p> <p>Consider Complete Streets guidelines.</p> <p>Provide for utilities (water, gas, etc.) if it is expected that they will be installed in the future.</p> <p>Environmental permitting may put restrictions on time of year when work can be done in the water.</p>

Note 1: The following NHS routes: Eisenhower Interstate, Other NHS Routes and STRAHNET Routes and Connectors, are considered Critical/Essential in that they are the primary routes for emergency use during and after an emergency or natural event. Structures on these NHS routes must be available for limited use after such an event. See MassDOT Bridge Manual for more information on these requirements. A map of NHS Routes in Massachusetts is available on the following website: http://www.fhwa.dot.gov/planning/national_highway_system/nhs_maps/

Note 2: Bridge Railing and Transition and Bridge Railing Retrofit Resources:

Federal Highway Administration: http://safety.fhwa.dot.gov/roadway_dept/policy_guide/road_hardware/ctrmeasures/bridge_railings/

AASHTO | AGC | ARTBA Task Force 13: <http://www.aashtof13.org/Bridge-Rail.php>

Note 3: AASHTO LRFD = AASHTO LRFD Bridge Design Specifications, Latest Edition with current interims and errata