Contract No.

PROJECT MANUAL

FOR

CONTRACTS 2024
HOTEL BRIDGE REHABILITATION
Bridge No. N-19-027 (0RA)

DEPARTMENT OF PUBLIC WORKS
NORTHAMPTON, MASSACHUSETTS

Project Funding: City of Northampton Capital Funds

In accordance with the STANDARD SPECIFICATIONS for HIGHWAYS and BRIDGES, 2024 edition, as amended, and the CONSTRUCTION STANDARD DETAILS OF 2017, of the Massachusetts Department of Transportation, as amended.

This proposal to be opened and read on **July 24, 2024 at 2:00 PM**

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NOTICE TO CONTRACTORS

Notice to Contractors published in the Daily Hampshire Gazette: July 10, 2024.

NOTICE TO CONTRACTORS

Sealed Bids for **Contracts 2024 Hotel Bridge Rehabilitation, Bridge No. N-19-027 (0RA)** will be received by the Northampton Department of Public Works at their office at 125 Locust Street, Northampton, MA until **2:00 PM on July 24, 2024** at which time they will be publicly opened and read. Bid Documents will be available beginning July 10, 2024 by contacting Maggie Chan at mchan@northamptonma.gov. MassDOT prequalification of contractors with the class of work as Bridge Construction for the project with an estimated value of $642,000 will be required. Project includes prevailing wage rates. Bid deposit and Payment & Performance bonds are required. This is a City funded project.

Northampton Department of Public Works

INSTRUCTION TO BIDDERS

GENERAL CONTRACTOR REQUIREMENTS
PROPOSAL REQUIREMENTS & CONDITIONS

INSTRUCTIONS TO BIDDERS

GENERAL CONTRACTOR REQUIREMENTS

1. Bids must be delivered to the Northampton Department of Public Works (DPW) at the following address:

   Northampton Department of Public Works
   125 Locust Street
   Northampton, MA 01060

   Bids must be received no later than **Wednesday, July 24, 2024 at 2:00 PM.** at which time the bids will be opened and read.

2. Bidders must submit their bids on the attached bid form. Bids must be submitted in a sealed envelope clearly marked **Contracts 2024 Hotel Bridge Rehabilitation, Bridge No. N-19-027 (0RA).**

3. The Department of Public Works will make award of this Contract within 30 days of the bid opening. The City reserves the right to reject any or all bids, to waive any informality, and to accept the bid deemed to be in the best interests of the City.

4. Every bid for such contract shall be accompanied by a bid deposit in the form of a bid bond, or cash, or a certified check on, or a treasurer's or cashier's check issued by, a responsible bank or trust company, payable to the awarding authority. The amount of the bid security is 5% of the bid.

5. The successful bidder will be required to furnish 100% Performance and Payment Bonds.

6. All Contractual terms and material supplies shall conform to the Commonwealth of Massachusetts, Massachusetts Department of Transportation, Standard Specifications for Highways and Bridges, latest edition (Standard Specifications), as amended, and the attached Special Provisions and Item Specifications.

7. The typical workday shall be eight (8) hours long with a 1/2-hour lunch break beginning at noon (7:00 a.m. - noon and 12:30 p.m. - 3:30 p.m.). In the event the Contractor decides to work (a) over 8 hours in one day and/or (b) during weekends and holidays, the Contractor shall reimburse the City for all city personnel and expenses incurred by the City as a result of the overtime work, except in emergency cases which are determined not to be the fault of the Contractor. The reimbursement rate shall be determined by the City upon request from the Contractor.

8. This Contract shall include the rehabilitation of the Leeds Hotel Bridge, Bridge No. N-19-027 (0RA). All work shall be completed by **December 31, 2025** unless approved to by the DPW. The Contractor shall designate a representative who will be present during all phases of Contract execution and will field measure and quantify all payment items with the DPW Field Engineer.

9. It shall be the Contractor's responsibility to arrange and pay for traffic police coverage during his operations in accordance with the Northampton Police Department regulations and keep track of all scheduled hours. The City shall reimburse all traffic police fees paid by the Contractor for this project.

10. It shall be the Contractor's responsibility to prepare all starting and end station "cuts" or "keyways" at least three (3) feet wide unless specified otherwise by the Engineer, side streets included. Driveway "cuts" or "keyways" shall be at least one (1) foot wide unless specified

otherwise by the Engineer. All "cuts" or "keyways" shall be saw cut and costs shall be included in the respective bid Items.

11. The Contractor shall conform to Subsection 7.10 (Barricades and Warning Signs) of the Standard Specifications.

13. The Contractor shall conform to Subsection 7.13 (Protection and Restoration of Property) of the Standard Specifications.

14. The Contractor is responsible for contacting all non-DPW utility companies that have structures within the limits of the project areas and have these structures adjusted to grade at no expense to the City of Northampton.

15. The successful bidder(s) shall provide the DPW a certificate of liability insurance naming the City of Northampton as an additional insured in the following amounts prior to commencement of work:

    Bodily Injury General Liability..... $1,000,000/$2,000,000
    Property Damage General Liability..... $1,000,000/$2,000,000
    Bodily Injury Automobile Liability..... $500,000/1,000,000
    Property Damage Automobile Liability...$100,000/$500,000
    Workers Compensation: As required by state law.

16. Bid proposals are required to include the following information:
    - Contractors' and subcontractors' names for all phases of required work.
    - Qualifications of contractor and sub-contractors of similar project(s) for required work.

17. The Contractor shall be responsible for obtaining DPW trench permits (fee waived) and contacting DIGSAFE.

INSTRUCTIONS TO BIDDERS

PROPOSAL REQUIREMENTS & CONDITIONS

SUBSECTION 2.01 PROPOSAL FORMS AND PLANS

A. Prequalification Prior to Requesting Proposal Forms.

Subject to the requirements of M.G.L. Chapter 29, Section 8B, each prospective Bidder proposing to bid on any work, excepting the construction, reconstruction, repair or alteration of buildings, to be awarded by the City under the provisions of M.G.L. Chapter 90, Section 34 must be prequalified in accordance with 720 CMR 5.00, "Prequalification of Contractors and Prospective Bidders for Statewide Engineering Field Survey Services", if the amount of the proposal will aggregate to $50,000 or more.

For work aggregating under $50,000, prequalification requirements shall be at the discretion of the City.

Except for projects for which prequalification is not required under 720 CMR 5.04(2), proposals for a project shall be limited to those bidders who have been prequalified by the Prequalification Committee in the specified class of work on or before the time of bid opening.

B. Issuance of Proposal Forms and Plans.

All prospective Bidders who intend to bid on work to be awarded by the City, may obtain the plans and specifications from the City at the place specified in the Notice to Contractors.

Official proposal documents shall contain plans and specifications showing the location and description of the contemplated work; an itemized proposal form listing the estimated various quantities of work to be performed and materials to be furnished; the time in which the particular work must be completed; and a Notice to Contractors and Special Provision for the particular project.

The City is not responsible for loss of or damage to the official proposal documents after they have been mailed or given to the bidder. If the bidder views/obtains the plans and specifications from a source other than those indicated in the Notice to Contractors, the accuracy and/or completeness of the bid documents cannot be guaranteed and the bidder assumes the responsibility for obtaining any additional information regarding the project, including addenda, that may be required for bidding.

Modifications to any official proposal documents will be made through the Addendum process. The bidder shall take responsibility for incorporating the revised data into the proposal upon notification from the City. The bidder must provide an e-mail address to the City for receipt of addenda notification.

SUBSECTION 2.02 INTERPRETATION OF BASIC ESTIMATE OF QUANTITIES

All bids will be compared on the estimate of quantities of work to be done, as shown in the Proposal.

The parties expressly agree that these quantities are being set forth as a basis for the comparison of bids only and the parties also expressly agree that the actual amount of work may not correspond therewith. The city expressly reserves the right to adjust said quantities in accordance with actual conditions as found to exist during the course of work.

Bidders agree to submit their estimate upon the following express condition, which shall apply to and become part of every bid received as follows: the work has been divided into items in order to enable the Bidder to bid on the different portions of the work in accordance with the Bidder's estimate of their cost, so that in the event of an increase or decrease in the quantities of any particular item of work the actual quantities executed shall be paid in accordance with the contract.

An increase or decrease in the quantity for any item shall not be regarded as cause for an increase or decrease in the contract unit prices, nor in the time allowed for the completion of the work, except as provided in Subsection 4.06: Increased or Decreased Contract Quantities, Subsection 8.10: Determination and Extension of Contract Time for Completion (Time Extensions), and Subsection 9:03: Payment for Extra Work of the Standard Specifications for Highways and Bridges, 2023 Edition.

SUBSECTION 2.03 EXAMINATION OF PLANS, SPECIFICATIONS, SPECIAL PROVISIONS, AND SITE OF WORK

The City will prepare plans and specifications giving directions which will enable any competent Contractor to carry them out. The Bidder is expected to examine carefully the site of the proposed work, the proposal, plans, specifications, supplemental specifications, special provisions, and contract forms, before submitting a Proposal. The submission of a bid shall be considered prima facie evidence that the Bidder has made such examination of the site of the proposed work, plans, proposal, etc., and is familiar with the conditions to be encountered in performing the work and as to the requirements of the plans, specifications, supplemental specifications, special provisions, and Contract.

SUBSECTION 2.04 PREPARATION OF PROPOSALS

A. Bid Prices.

The bidder shall submit the proposal upon the forms furnished by the City. The Bidder shall specify a unit price, in both words and figures, for each item for which a quantity is given, and shall also show the products of the respective unit prices and quantities written in figures in the column provided for that purpose and the total amount of the Proposal obtained by adding the amounts of the several items. All words and figures shall be in ink. In case of a discrepancy between the unit prices written in words and unit prices written in figures, the written words shall govern.

When an item in the Proposal contains a choice to be made by the Bidder, the Bidder shall indicate the Bidder's choice in accordance with the specifications for that particular item and thereafter no further choice will be permitted.

The price for any item, bid and contracted for, unless otherwise noted or specified, shall include full compensation for all materials, equipment, tools, labor and incidental work, necessary to

complete the item to the satisfaction of the Engineer. The prices, without exception, shall be net, not subject to discount, and shall include all royalties and costs arising from patents, trademarks, and copyrights in any way involved in the work.

B. Signatures.

All Proposals shall be signed correctly with ink in the proper place provided, as follows: If the Proposal is made by an individual his name and post office address shall be stated.

If the Proposal is made by a firm, partnership or corporation, it shall be signed by a person having such legal authority from the said firm, partnership or corporation and the person so signing the Proposal shall give his own name and title (if any) in addition to the name and address of the firm, partnership or corporation. If the Proposal is made by a firm or partnership, the names and addresses of the individual members shall be given.

If the Proposal is made by a corporation, the name of the State under the Laws of which the corporation was chartered and the names, titles and business addresses of the President, Treasurer and Clerk shall be given.

If a Proposal is made by two or more individuals, partnerships, or corporations, or any combination of these as a joint venture, each party joining to make the Proposal shall submit attached to and made part of the Proposal all information and all signatures in compliance with the foregoing provisions applicable to an individual, firm, partnership or corporation. In addition, if any of the joint venture are a corporation, an attested copy of the vote of the corporation authorizing such joint venture shall be attached to the Proposal.

SUBSECTION 2.05 DELIVERY OF PROPOSALS

Each proposal shall be submitted to the Department of Public Works, sealed in an envelope on which is clearly indicated the contents, including the name of the project, the name and address of the Bidder, and the date and time it is to be opened.

If forwarded by mail, preferably by registered mail, the above-mentioned envelope shall be enclosed in another envelope which shall be addressed to "**Northampton Department of Public Works, 125 Locust Street, Northampton, MA**". Proposals received at this office after the time for opening of bids designated in the Notice to Contractors will be returned to the Bidder unopened.

SUBSECTION 2.06 PROPOSAL GUARANTY REQUIRED

In order to ensure the faithful fulfillment of its terms, each Proposal shall be accompanied by a bid deposit in the amount of 5 percent of the bid.

The bid deposit shall be in the form of a bid bond, or cash, or a certified check on, or a treasurer's or cashier's check issued by, a responsible bank or trust company, payable to the awarding authority. The bid deposit shall be enclosed in the sealed envelope with the Proposal.

SUBSECTION 2.07 WITHDRAWAL OF PROPOSALS

A bidder may withdraw his proposal provided the request in writing is in the hands of the Department of Public Works by the time set for opening of Proposals. When such proposal is reached during the opening of the bids it will be returned to the bidder unread.

SUBSECTION 2.08 PUBLIC OPENING OF PROPOSALS

Proposals will be opened, and the total price of each bid read publicly at the time and place indicated in the Notice to Contractors. Any person may at reasonable times and in the presence of the Engineer examine any or all Proposals after they have been opened and read.

SUBSECTION 2.09 REJECTION OF PROPOSALS

Proposals which fail to meet the requirements of Subsection 2.04: Preparation of Proposals, Subsection 2.05: Delivery of Proposals, and Subsection 2.06: Proposal Guaranty Required or which are incomplete, conditional or obscure, or which contain additions not called for, erasures, alterations or irregularities of any kind, or in which errors occur, or which contain abnormally high or abnormally low prices for any class or item of work, shall be declared informal, provided however that the Department of Public Works may, if it deems it to be in the public interest, waive any or all informalities as to form. Informalities as to substance, however, shall not be waived.

More than one Proposal from the same Bidder, whether or not the same or different names appear on the signature page, will not be considered. Reasonable proof for believing that any Bidder is so interested in more than one Proposal for the work contemplated will cause the rejection of all Proposals made by them directly or indirectly. Any Proposals will be rejected if there is reason for believing that collusion exists among the Bidders. (See Subsection 3.01: Consideration of Proposals in the Standard Specifications for Highways and Bridges, 2024 Edition.)

In accordance with 720 CMR 5.00, Proposals may also be rejected if:

i. Award of the contract would result in the Bidder exceeding the Aggregate Bonding Capacity established by its Surety Company, or the Bidder's Proposal exceeds its single project limit, or the Bidder was not prequalified in the specified class of work on or before the time of bid opening; or
ii. The Bidder is presently debarred from performing work of any kind under provision of M.G.L., Chapter 29, Section 29F, or any other applicable debarment provisions of the Massachusetts General Laws or any rule or regulation promulgated thereunder; or
iii. The Bidder is presently debarred from performing work of any kind under the laws of any state other than the Commonwealth of Massachusetts, or by any Federal agency or authority; or
iv. There is substantial reason to believe that the condition of the Bidder's firm is less favorable than at the time of its last Application for Prequalification; or
v. The Bidder does not have sufficient equipment, or sufficient assets to provide necessary equipment either through purchase or lease agreements; or
vi. The Bidder's performance on past or current work with the City or other awarding authorities is or has been unsatisfactory; or
vii. On current projects of the City or other public authorities the Bidder frequently fails or has failed to pay its subcontractors or material suppliers in a timely manner, or that 5 or more

subcontractors or material suppliers of the Contractor for a project currently under construction have filed demands for direct payments with the project's awarding authority in accordance with M.G.L. Chapter 30, Section 39F; or

viii. The Bidder is not otherwise an eligible and responsible Bidder capable of performing the work.

In addition, the City adds that a failure to acknowledge addenda issued during bidding shall (or may) designate a bid as non-responsive.

SUBSECTION 2.10 DISQUALIFICATION OF BIDDERS

Bidders whose Proposals have been rejected because of evidence of collusion may be subject to debarment under applicable provisions of state and federal law.

SUBSECTION 2.11 DETERMINATION OF LOWEST BID

The lowest bid shall be determined by the City on the basis of the total base bid price for which the entire work will be performed, arrived at by a correct computation of all the items specified in the Proposal at their estimated quantities and the unit prices submitted therefore plus any alternates accepted. The Department of Public Works reserves the right to reject any or all alternates in descending order.

SUBSECTION 2.12 MATERIAL GUARANTY

Before any contract is awarded, the Bidder may be required to furnish without expense to the City a complete statement of the origin, composition and manufacture of any or all materials proposed to be used in the construction of the work, together with samples, which may be subjected to the tests required by the City to determine the quality and fitness of the material.

SUBSECTION 2.13 ESCALATION CLAUSE

This Contract contains price adjustments for structural and reinforcing steel. If applicable, these adjustments will be calculated per MassDOT methods. For this project the base price for steel is **447.6 producer price index (PPI)**. MassDOT posts the Period Prices on their website at https://www.mass.gov/service-details/massdot-current-contract-price-adjustments

Price Adjustments for Structural Steel and Reinforcing Steel will be based on MassDOT Highway Division, Document 00813, "Special Provisions Price Adjustments for Structural Steel and Reinforcing Steel, March 16, 2023".

WAGE RATES

MAURA HEALEY
Governor

KIM DRISCOLL
Lt. Governor

THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF LABOR AND WORKFORCE DEVELOPMENT
DEPARTMENT OF LABOR STANDARDS

Prevailing Wage Rates

As determined by the Director under the provisions of the Massachusetts General Laws, Chapter 149, Sections 26 to 27H

LAUREN JONES
Secretary

MICHAEL FLANAGAN
Director

Awarding Authority: City of Northampton

Contract Number:

City/Town: NORTHAMPTON

Description of Work: The work under this contract consists of bridge rehabilitation of Bridge No. N-19-027 (0RA), Old Shepherd Road over the Mill River, located in Northampton.

Job Location: Main Street, Leeds, Northampton

Information about Prevailing Wage Schedules for Awarding Authorities and Contractors

- **The wage rates will remain in effect for the duration of the project, except in the case of multi-year public construction projects. For construction projects lasting longer than one year, awarding authorities must request an updated wage schedule no later than two weeks before the anniversary of the date the contract was executed by the awarding authority and the general contractor.** For multi-year CM AT RISK projects, the awarding authority must request an annual update no later than two weeks before the anniversary date, determined as the earlier of: (a) the execution date of the GMP Amendment, or (b) the execution date of the first amendment to permit procurement of construction services. The annual update requirement is not applicable to 27F "rental of equipment" contracts. **The updated wage schedule must be provided to all contractors, including general and sub-contractors, working on the construction project.**
- This wage schedule applies only to the specific project referenced at the top of this page and uniquely identified by the "Wage Request Number" on all pages of this schedule.
- An Awarding Authority must request an updated wage schedule if it has not opened bids or selected a contractor within 90 days of the date of issuance of the wage schedule. For CM AT RISK projects (bid pursuant to G.L. c.149A), the earlier of: (a) the execution date of the GMP Amendment, or (b) the bid for the first construction scope of work must be within 90-days of the wage schedule issuance date.
- The wage schedule shall be incorporated in any advertisement or call for bids for the project as required by M.G.L. c. 149, § 27. The wage schedule shall be made a part of the contract awarded for the project. The wage schedule must be posted in a conspicuous place at the work site for the life of the project in accordance with M.G.L. c. 149 § 27. The wages listed on the wage schedule must be paid to employees performing construction work on the project whether they are employed by the prime contractor, a filed sub-bidder, or a sub-contractor.
- Apprentices working on the project are required to be registered with the Massachusetts Division of Apprentice Standards (DAS). Apprentices must keep their apprentice identification card on their persons during all work hours on the project. An apprentice registered with DAS may be paid the lower apprentice wage rate at the applicable step as provided on the prevailing wage schedule. **Any apprentice not registered with DAS regardless of whether they are registered with another federal, state, local, or private agency must be paid the journeyworker's rate.**
- Every contractor or subcontractor working on the construction project must submit weekly payroll reports and a Statement of Compliance directly to the awarding authority by mail or email and keep them on file for three years. Each weekly payroll report must contain: the employee's name, address, occupational classification, hours worked, and wages paid. Do not submit weekly payroll reports to DLS. For a sample payroll reporting form go to http://www.mass.gov/dols/pw.
- Contractors with questions about the wage rates or classifications included on the wage schedule have an affirmative obligation to inquire with DLS at (617) 626-6953.
- Contractors must obtain the wage schedules from awarding authorities. Failure of a contractor or subcontractor to pay the prevailing wage rates listed on the wage schedule to all employees who perform construction work on the project is a violation of the law and subjects the contractor or subcontractor to civil and criminal penalties.
- Employees not receiving the prevailing wage rate set forth on the wage schedule may file a complaint with the Fair Labor Division of the office of the Attorney General at (617) 727-3465.

Issue Date: 06/28/2024 **Wage Request Number:** 20240628-017

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
Construction						
(2 AXLE) DRIVER - EQUIPMENT *TEAMSTERS JOINT COUNCIL NO. 10 ZONE B*	06/01/2024	$39.95	$15.07	$18.67	$0.00	$73.69
	12/01/2024	$39.95	$15.07	$20.17	$0.00	$75.19
	01/01/2025	$39.95	$15.57	$20.17	$0.00	$75.69
	06/01/2025	$40.95	$15.57	$20.17	$0.00	$76.69
	12/01/2025	$40.95	$15.57	$21.78	$0.00	$78.30
	01/01/2026	$40.95	$16.17	$21.78	$0.00	$78.90
	06/01/2026	$41.95	$16.17	$21.78	$0.00	$79.90
	12/01/2026	$41.95	$16.17	$23.52	$0.00	$81.64
	01/01/2027	$41.95	$16.77	$23.52	$0.00	$82.24
(3 AXLE) DRIVER - EQUIPMENT *TEAMSTERS JOINT COUNCIL NO. 10 ZONE B*	06/01/2024	$40.02	$15.07	$18.67	$0.00	$73.76
	12/01/2024	$40.02	$15.07	$20.17	$0.00	$75.26
	01/01/2025	$40.02	$15.57	$20.17	$0.00	$75.76
	06/01/2025	$41.02	$15.57	$20.17	$0.00	$76.76
	12/01/2025	$41.02	$15.57	$21.78	$0.00	$78.37
	01/01/2026	$41.02	$16.17	$21.78	$0.00	$78.97
	06/01/2026	$42.02	$16.17	$21.78	$0.00	$79.97
	12/01/2026	$42.02	$16.17	$23.52	$0.00	$81.71
	01/01/2027	$42.02	$16.77	$23.52	$0.00	$82.31
(4 & 5 AXLE) DRIVER - EQUIPMENT *TEAMSTERS JOINT COUNCIL NO. 10 ZONE B*	06/01/2024	$40.14	$15.07	$18.67	$0.00	$73.88
	12/01/2024	$40.14	$15.07	$20.17	$0.00	$75.38
	01/01/2025	$40.14	$15.57	$20.17	$0.00	$75.88
	06/01/2025	$41.14	$15.57	$20.17	$0.00	$76.88
	12/01/2025	$41.14	$15.57	$21.78	$0.00	$78.49
	01/01/2026	$41.14	$16.17	$21.78	$0.00	$79.09
	06/01/2026	$42.14	$16.17	$21.78	$0.00	$80.09
	12/01/2026	$42.14	$16.17	$23.52	$0.00	$81.83
	01/01/2027	$42.14	$16.77	$23.52	$0.00	$82.43
ADS/SUBMERSIBLE PILOT *PILE DRIVER LOCAL 56 (ZONE 3)*	08/01/2020	$103.05	$9.40	$23.12	$0.00	$135.57
For apprentice rates see "Apprentice- PILE DRIVER"						
AIR TRACK OPERATOR *LABORERS - ZONE 3 (BUILDING & SITE)*	12/01/2023	$34.38	$9.65	$16.84	$0.00	$60.87
For apprentice rates see "Apprentice- LABORER"						
AIR TRACK OPERATOR (HEAVY & HIGHWAY) *LABORERS - ZONE 3 (HEAVY & HIGHWAY)*	06/01/2024	$35.30	$9.65	$15.06	$0.00	$60.01
	12/01/2024	$36.50	$9.65	$15.06	$0.00	$61.21
	06/01/2025	$37.75	$9.65	$15.06	$0.00	$62.46
	12/01/2025	$38.99	$9.65	$15.06	$0.00	$63.70
	06/01/2026	$40.29	$9.65	$15.06	$0.00	$65.00
	12/01/2026	$41.58	$9.65	$15.06	$0.00	$66.29
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
ASBESTOS WORKER (PIPES & TANKS) *HEAT & FROST INSULATORS LOCAL 6 (SPRINGFIELD)*	06/01/2024	$37.62	$14.50	$10.55	$0.00	$62.67
	12/01/2024	$38.52	$14.50	$10.55	$0.00	$63.57
	06/01/2025	$39.42	$14.50	$10.55	$0.00	$64.47
	12/01/2025	$40.32	$14.50	$10.55	$0.00	$65.37

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
ASPHALT RAKER *LABORERS - ZONE 3 (BUILDING & SITE)*	12/01/2023	$33.88	$9.65	$16.84	$0.00	$60.37
For apprentice rates see "Apprentice- LABORER"						
ASPHALT RAKER (HEAVY & HIGHWAY) *LABORERS - ZONE 3 (HEAVY & HIGHWAY)*	06/01/2024	$34.80	$9.65	$15.06	$0.00	$59.51
	12/01/2024	$36.00	$9.65	$15.06	$0.00	$60.71
	06/01/2025	$37.25	$9.65	$15.06	$0.00	$61.96
	12/01/2025	$38.49	$9.65	$15.06	$0.00	$63.20
	06/01/2026	$39.79	$9.65	$15.06	$0.00	$64.50
	12/01/2026	$41.08	$9.65	$15.06	$0.00	$65.79
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
AUTOMATIC GRADER-EXCAVATOR (RECLAIMER) *OPERATING ENGINEERS LOCAL 98*	12/01/2023	$39.56	$13.78	$15.15	$0.00	$68.49
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BACKHOE/FRONT-END LOADER OPERATOR *OPERATING ENGINEERS LOCAL 98*	12/01/2023	$39.56	$13.78	$15.15	$0.00	$68.49
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BARCO-TYPE JUMPING TAMPER *LABORERS - ZONE 3 (BUILDING & SITE)*	12/01/2023	$33.88	$9.65	$16.84	$0.00	$60.37
For apprentice rates see "Apprentice- LABORER"						
BATCH/CEMENT PLANT - ON SITE *OPERATING ENGINEERS LOCAL 98*	12/01/2023	$39.03	$13.78	$15.15	$0.00	$67.96
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BLOCK PAVER, RAMMER / CURB SETTER *LABORERS - ZONE 3 (BUILDING & SITE)*	12/01/2023	$34.38	$9.65	$16.84	$0.00	$60.87
For apprentice rates see "Apprentice- LABORER"						
BLOCK PAVER, RAMMER / CURB SETTER (HEAVY & HIGHWAY) *LABORERS - ZONE 3 (HEAVY & HIGHWAY)*	06/01/2024	$35.30	$9.65	$15.06	$0.00	$60.01
	12/01/2024	$36.50	$9.65	$15.06	$0.00	$61.21
	06/01/2025	$37.75	$9.65	$15.06	$0.00	$62.46
	12/01/2025	$38.99	$9.65	$15.06	$0.00	$63.70
	06/01/2026	$40.29	$9.65	$15.06	$0.00	$65.00
	12/01/2026	$41.58	$9.65	$15.06	$0.00	$66.29
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
BOILER MAKER *BOILERMAKERS LOCAL 29*	01/01/2024	$48.12	$7.07	$20.60	$0.00	$75.79

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate

Apprentice - *BOILERMAKER - Local 29*

Effective Date - 01/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	65	$31.28	$7.07	$13.22	$0.00	$51.57
2	65	$31.28	$7.07	$13.22	$0.00	$51.57
3	70	$33.68	$7.07	$14.23	$0.00	$54.98
4	75	$36.09	$7.07	$15.24	$0.00	$58.40
5	80	$38.50	$7.07	$16.25	$0.00	$61.82
6	85	$40.90	$7.07	$17.28	$0.00	$65.25
7	90	$43.31	$7.07	$18.28	$0.00	$68.66
8	95	$45.71	$7.07	$19.32	$0.00	$72.10

Notes:

Apprentice to Journeyworker Ratio:1:4

BRICK/STONE/ARTIFICIAL MASONRY (INCL. MASONRY WATERPROOFING) *BRICKLAYERS LOCAL 3 (SPRINGFIELD/PITTSFIELD)*	02/01/2024	$50.81	$11.49	$21.46	$0.00	$83.76
	08/01/2024	$52.06	$11.49	$21.46	$0.00	$85.01
	02/01/2025	$53.36	$11.49	$21.46	$0.00	$86.31
	08/01/2025	$55.51	$11.49	$21.46	$0.00	$88.46
	02/01/2026	$56.86	$11.49	$21.46	$0.00	$89.81
	08/01/2026	$59.06	$11.49	$21.46	$0.00	$92.01
	02/01/2027	$60.46	$11.49	$21.46	$0.00	$93.41

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate

Apprentice - *BRICK/PLASTER/CEMENT MASON - Local 3 Springfield/Pittsfield*

Effective Date - 02/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	$25.41	$11.49	$21.46	$0.00	$58.36
2	60	$30.49	$11.49	$21.46	$0.00	$63.44
3	70	$35.57	$11.49	$21.46	$0.00	$68.52
4	80	$40.65	$11.49	$21.46	$0.00	$73.60
5	90	$45.73	$11.49	$21.46	$0.00	$78.68

Effective Date - 08/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	$26.03	$11.49	$21.46	$0.00	$58.98
2	60	$31.24	$11.49	$21.46	$0.00	$64.19
3	70	$36.44	$11.49	$21.46	$0.00	$69.39
4	80	$41.65	$11.49	$21.46	$0.00	$74.60
5	90	$46.85	$11.49	$21.46	$0.00	$79.80

Notes:

Apprentice to Journeyworker Ratio:1:5

BULLDOZER/POWER SHOVEL/TREE SHREDDER /CLAM SHELL*OPERATING*	12/01/2023	$39.56	$13.78	$15.15	$0.00	$68.49
ENGINEERS LOCAL 98						
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
CAISSON & UNDERPINNING BOTTOM MAN	06/01/2024	$46.63	$9.65	$18.22	$0.00	$74.50
LABORERS - FOUNDATION AND MARINE	12/01/2024	$48.10	$9.65	$18.22	$0.00	$75.97
	06/01/2025	$49.60	$9.65	$18.22	$0.00	$77.47
	12/01/2025	$51.10	$9.65	$18.22	$0.00	$78.97
	06/01/2026	$52.65	$9.65	$18.22	$0.00	$80.52
	12/01/2026	$54.15	$9.65	$18.22	$0.00	$82.02
For apprentice rates see "Apprentice- LABORER"						
CAISSON & UNDERPINNING LABORER	06/01/2024	$45.48	$9.65	$18.22	$0.00	$73.35
LABORERS - FOUNDATION AND MARINE	12/01/2024	$46.95	$9.65	$18.22	$0.00	$74.82
	06/01/2025	$48.45	$9.65	$18.22	$0.00	$76.32
	12/01/2025	$49.95	$9.65	$18.22	$0.00	$77.82
	06/01/2026	$51.50	$9.65	$18.22	$0.00	$79.37
	12/01/2026	$53.00	$9.65	$18.22	$0.00	$80.87
For apprentice rates see "Apprentice- LABORER"						
CAISSON & UNDERPINNING TOP MAN	06/01/2024	$45.81	$9.65	$18.22	$0.00	$73.68
LABORERS - FOUNDATION AND MARINE	12/01/2024	$47.28	$9.65	$18.22	$0.00	$75.15
	06/01/2025	$48.78	$9.65	$18.22	$0.00	$76.65
	12/01/2025	$50.28	$9.65	$18.22	$0.00	$78.15
	06/01/2026	$51.83	$9.65	$18.22	$0.00	$79.70
	12/01/2026	$53.33	$9.65	$18.22	$0.00	$81.20
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
CARBIDE CORE DRILL OPERATOR *LABORERS - ZONE 3 (BUILDING & SITE)*	12/01/2023	$33.88	$9.65	$16.84	$0.00	$60.37
For apprentice rates see "Apprentice- LABORER"						
CARPENTER *CARPENTERS LOCAL 336 - HAMPDEN HAMPSHIRE FRANKLIN*	03/01/2024	$41.41	$7.91	$18.15	$0.00	$67.47
	09/01/2024	$42.36	$7.91	$18.15	$0.00	$68.42
	03/01/2025	$43.26	$7.91	$18.15	$0.00	$69.32
	09/01/2025	$44.21	$7.91	$18.15	$0.00	$70.27
	03/01/2026	$45.11	$7.91	$18.15	$0.00	$71.17
	09/01/2026	$46.06	$7.91	$18.15	$0.00	$72.12
	03/01/2027	$46.96	$7.91	$18.15	$0.00	$73.02

Apprentice - *CARPENTER - Local 336 Hampden Hampshire Franklin*

Effective Date - 03/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	$18.63	$7.91	$1.40	$0.00	$27.94
2	45	$18.63	$7.91	$1.40	$0.00	$27.94
3	55	$22.78	$7.91	$2.76	$0.00	$33.45
4	55	$22.78	$7.91	$2.76	$0.00	$33.45
5	70	$28.99	$7.91	$15.39	$0.00	$52.29
6	70	$28.99	$7.91	$15.39	$0.00	$52.29
7	80	$33.13	$7.91	$16.77	$0.00	$57.81
8	80	$33.13	$7.91	$16.77	$0.00	$57.81

Effective Date - 09/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	$19.06	$7.91	$1.40	$0.00	$28.37
2	45	$19.06	$7.91	$1.40	$0.00	$28.37
3	55	$23.30	$7.91	$2.76	$0.00	$33.97
4	55	$23.30	$7.91	$2.76	$0.00	$33.97
5	70	$29.65	$7.91	$15.39	$0.00	$52.95
6	70	$29.65	$7.91	$15.39	$0.00	$52.95
7	80	$33.89	$7.91	$16.77	$0.00	$58.57
8	80	$33.89	$7.91	$16.77	$0.00	$58.57

Notes:

Apprentice to Journeyworker Ratio:1:5

CARPENTER WOOD FRAME *CARPENTERS-ZONE 3 (Wood Frame)*	10/01/2023	$25.55	$7.02	$4.80	$0.00	$37.37
	10/01/2024	$26.65	$7.02	$4.80	$0.00	$38.47
	10/01/2025	$27.75	$7.02	$4.80	$0.00	$39.57
	10/01/2026	$28.85	$7.02	$4.80	$0.00	$40.67
All Aspects of New Wood Frame Work						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate

Apprentice - *CARPENTER (Wood Frame) - Zone 3*

Effective Date - 10/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	$15.33	$7.02	$0.00	$0.00	$22.35
2	60	$15.33	$7.02	$0.00	$0.00	$22.35
3	65	$16.61	$7.02	$1.00	$0.00	$24.63
4	70	$17.89	$7.02	$1.00	$0.00	$25.91
5	75	$19.16	$7.02	$4.80	$0.00	$30.98
6	80	$20.44	$7.02	$4.80	$0.00	$32.26
7	85	$21.72	$7.02	$4.80	$0.00	$33.54
8	90	$23.00	$7.02	$4.80	$0.00	$34.82

Effective Date - 10/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	$15.99	$7.02	$0.00	$0.00	$23.01
2	60	$15.99	$7.02	$0.00	$0.00	$23.01
3	65	$17.32	$7.02	$1.00	$0.00	$25.34
4	70	$18.66	$7.02	$1.00	$0.00	$26.68
5	75	$19.99	$7.02	$4.80	$0.00	$31.81
6	80	$21.32	$7.02	$4.80	$0.00	$33.14
7	85	$22.65	$7.02	$4.80	$0.00	$34.47
8	90	$23.99	$7.02	$4.80	$0.00	$35.81

Notes:

% Indentured After 10/1/17; 45/45/55/55/70/70/80/80
Step 1&2 $18.52/ 3&4 $21.07/ 5&6 $28.70/ 7&8 $31.26

Apprentice to Journeyworker Ratio:1:5

CEMENT MASONRY/PLASTERING *BRICKLAYERS LOCAL 3 (SPRINGFIELD/PITTSFIELD)*	01/01/2024	$44.68	$12.90	$18.66	$1.25	$77.49

Apprentice - *CEMENT MASONRY/PLASTERING - Springfield/Pittsfield*

Effective Date - 01/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	$22.34	$12.90	$15.86	$0.00	$51.10
2	60	$26.81	$12.90	$18.66	$1.25	$59.62
3	65	$29.04	$12.90	$18.66	$1.25	$61.85
4	70	$31.28	$12.90	$18.66	$1.25	$64.09
5	75	$33.51	$12.90	$18.66	$1.25	$66.32
6	80	$35.74	$12.90	$18.66	$1.25	$68.55
7	90	$40.21	$12.90	$18.66	$1.25	$73.02

Notes:

Steps 3,4 are 500 hrs. All other steps are 1,000 hrs.

Apprentice to Journeyworker Ratio:1:3

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
CHAIN SAW OPERATOR *LABORERS - ZONE 3 (BUILDING & SITE)* For apprentice rates see "Apprentice- LABORER"	12/01/2023	$33.88	$9.65	$16.84	$0.00	$60.37
COMPRESSOR OPERATOR *OPERATING ENGINEERS LOCAL 98* For apprentice rates see "Apprentice- OPERATING ENGINEERS"	12/01/2023	$39.03	$13.78	$15.15	$0.00	$67.96
CRANE OPERATOR *OPERATING ENGINEERS LOCAL 98* For apprentice rates see "Apprentice- OPERATING ENGINEERS"	12/01/2023	$43.06	$13.78	$15.15	$0.00	$71.99
DELEADER (BRIDGE) *PAINTERS LOCAL 35 - ZONE 3*	01/01/2024	$56.06	$9.95	$23.95	$0.00	$89.96
	07/01/2024	$57.26	$9.95	$23.95	$0.00	$91.16
	01/01/2025	$58.46	$9.95	$23.95	$0.00	$92.36

Apprentice - *PAINTER Local 35 - BRIDGES/TANKS*

Effective Date - 01/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	$28.03	$9.95	$0.00	$0.00	$37.98
2	55	$30.83	$9.95	$6.66	$0.00	$47.44
3	60	$33.64	$9.95	$7.26	$0.00	$50.85
4	65	$36.44	$9.95	$7.87	$0.00	$54.26
5	70	$39.24	$9.95	$20.32	$0.00	$69.51
6	75	$42.05	$9.95	$20.93	$0.00	$72.93
7	80	$44.85	$9.95	$21.53	$0.00	$76.33
8	90	$50.45	$9.95	$22.74	$0.00	$83.14

Effective Date - 07/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	$28.63	$9.95	$0.00	$0.00	$38.58
2	55	$31.49	$9.95	$6.66	$0.00	$48.10
3	60	$34.36	$9.95	$7.26	$0.00	$51.57
4	65	$37.22	$9.95	$7.87	$0.00	$55.04
5	70	$40.08	$9.95	$20.32	$0.00	$70.35
6	75	$42.95	$9.95	$20.93	$0.00	$73.83
7	80	$45.81	$9.95	$21.53	$0.00	$77.29
8	90	$51.53	$9.95	$22.74	$0.00	$84.22

Notes:
Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

DEMO: ADZEMAN *LABORERS - ZONE 3 (BUILDING & SITE)* For apprentice rates see "Apprentice- LABORER"	12/01/2023	$44.98	$9.40	$17.82	$0.00	$72.20
DEMO: BACKHOE/LOADER/HAMMER OPERATOR *LABORERS - ZONE 3 (BUILDING & SITE)* For apprentice rates see "Apprentice- LABORER"	12/01/2023	$45.48	$9.65	$18.07	$0.00	$73.20
DEMO: BURNERS *LABORERS - ZONE 3 (BUILDING & SITE)*	12/01/2023	$45.73	$9.40	$17.82	$0.00	$72.95

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- LABORER"						
DEMO: CONCRETE CUTTER/SAWYER *LABORERS - ZONE 3 (BUILDING & SITE)*	12/01/2023	$45.48	$9.65	$18.07	$0.00	$73.20
For apprentice rates see "Apprentice- LABORER"						
DEMO: JACKHAMMER OPERATOR *LABORERS - ZONE 3 (BUILDING & SITE)*	12/01/2023	$45.73	$9.40	$17.82	$0.00	$72.95
For apprentice rates see "Apprentice- LABORER"						
DEMO: WRECKING LABORER *LABORERS - ZONE 3 (BUILDING & SITE)*	12/01/2023	$44.98	$9.40	$17.82	$0.00	$72.20
For apprentice rates see "Apprentice- LABORER"						
DIVER *PILE DRIVER LOCAL 56 (ZONE 3)*	08/01/2020	$68.70	$9.40	$23.12	$0.00	$101.22
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER TENDER *PILE DRIVER LOCAL 56 (ZONE 3)*	08/01/2020	$49.07	$9.40	$23.12	$0.00	$81.59
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER TENDER (EFFLUENT) *PILE DRIVER LOCAL 56 (ZONE 3)*	08/01/2020	$73.60	$9.40	$23.12	$0.00	$106.12
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER/SLURRY (EFFLUENT) *PILE DRIVER LOCAL 56 (ZONE 3)*	08/01/2020	$103.05	$9.40	$23.12	$0.00	$135.57
For apprentice rates see "Apprentice- PILE DRIVER"						
DRAWBRIDGE OPERATOR (Construction) *DRAWBRIDGE - SEIU LOCAL 888*	07/01/2020	$26.77	$6.67	$3.93	$0.16	$37.53
ELECTRICIAN (Including Core Drilling) *ELECTRICIANS LOCAL 7*	12/31/2023	$49.01	$12.75	$14.61	$0.00	$76.37
	06/30/2024	$50.01	$13.00	$14.86	$0.00	$77.87
	12/29/2024	$51.06	$13.25	$15.06	$0.00	$79.37
	06/29/2025	$52.16	$13.50	$15.21	$0.00	$80.87
	12/28/2025	$53.26	$13.75	$15.36	$0.00	$82.37
	06/28/2026	$54.41	$14.00	$15.46	$0.00	$83.87
	01/03/2027	$55.56	$14.25	$15.56	$0.00	$85.37

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate

Apprentice - *ELECTRICIAN - Local 7*

Effective Date - 12/31/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	$19.60	$7.65	$0.59	$0.00	$27.84
2	45	$22.05	$7.65	$0.66	$0.00	$30.36
3	50	$24.51	$12.75	$7.34	$0.00	$44.60
4	55	$26.96	$12.75	$7.41	$0.00	$47.12
5	65	$31.86	$12.75	$9.52	$0.00	$54.13
6	70	$34.31	$12.75	$10.90	$0.00	$57.96

Effective Date - 06/30/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	$20.00	$7.80	$0.60	$0.00	$28.40
2	45	$22.50	$7.80	$0.68	$0.00	$30.98
3	50	$25.01	$13.00	$7.40	$0.00	$45.41
4	55	$27.51	$13.00	$7.48	$0.00	$47.99
5	65	$32.51	$13.00	$9.64	$0.00	$55.15
6	70	$35.01	$13.00	$11.06	$0.00	$59.07

Notes:

Steps 1-2 are 1000 hrs; Steps 3-6 are 1500 hrs.

Apprentice to Journeyworker Ratio:2:3****

ELEVATOR CONSTRUCTOR *ELEVATOR CONSTRUCTORS LOCAL 41*	01/01/2024	$61.98	$16.18	$20.96	$0.00	$99.12
	01/01/2025	$62.83	$16.28	$21.36	$0.00	$100.47
	01/01/2026	$63.68	$16.38	$21.76	$0.00	$101.82
	01/01/2027	$64.53	$16.48	$22.16	$0.00	$103.17

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate

Apprentice - *ELEVATOR CONSTRUCTOR - Local 41*

Effective Date - 01/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	$30.99	$16.18	$0.00	$0.00	$47.17
2	55	$34.09	$16.18	$20.96	$0.00	$71.23
3	65	$40.29	$16.18	$20.96	$0.00	$77.43
4	70	$43.39	$16.18	$20.96	$0.00	$80.53
5	80	$49.58	$16.18	$20.96	$0.00	$86.72

Effective Date - 01/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	$31.42	$16.28	$0.00	$0.00	$47.70
2	55	$34.56	$16.28	$21.36	$0.00	$72.20
3	65	$40.84	$16.28	$21.36	$0.00	$78.48
4	70	$43.98	$16.28	$21.36	$0.00	$81.62
5	80	$50.26	$16.28	$21.36	$0.00	$87.90

Notes:
Steps 1-2 are 6 mos.; Steps 3-5 are 1 year

Apprentice to Journeyworker Ratio:1:1

ELEVATOR CONSTRUCTOR HELPER *ELEVATOR CONSTRUCTORS LOCAL 41*	01/01/2024	$43.39	$16.18	$20.96	$0.00	$80.53
	01/01/2025	$43.98	$16.28	$21.36	$0.00	$81.62
	01/01/2026	$44.58	$16.38	$21.76	$0.00	$82.72
	01/01/2027	$45.17	$16.48	$22.16	$0.00	$83.81
For apprentice rates see "Apprentice - ELEVATOR CONSTRUCTOR"						
FENCE & GUARD RAIL ERECTOR (HEAVY & HIGHWAY) *LABORERS - ZONE 3 (HEAVY & HIGHWAY)*	06/01/2024	$34.80	$9.65	$15.06	$0.00	$59.51
	12/01/2024	$36.00	$9.65	$15.06	$0.00	$60.71
	06/01/2025	$37.25	$9.65	$15.06	$0.00	$61.96
	12/01/2025	$38.49	$9.65	$15.06	$0.00	$63.20
	06/01/2026	$39.79	$9.65	$15.06	$0.00	$64.50
	12/01/2026	$41.08	$9.65	$15.06	$0.00	$65.79
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)						
FIELD ENG.INST/ROD-BLDG,SITE,HVY/HWY *OPERATING ENGINEERS LOCAL 98*	06/01/1999	$18.84	$4.80	$4.10	$0.00	$27.74
FIELD ENG.PARTY CHIEF:BLDG,SITE,HVY/HWY *OPERATING ENGINEERS LOCAL 98*	06/01/1999	$21.33	$4.80	$4.10	$0.00	$30.23
FIELD ENG.SURVEY CHIEF-BLDG,SITE,HVY/HWY *OPERATING ENGINEERS LOCAL 98*	06/01/1999	$22.33	$4.80	$4.10	$0.00	$31.23
FIRE ALARM INSTALLER *ELECTRICIANS LOCAL 7*	12/31/2023	$49.01	$12.75	$14.61	$0.00	$76.37
	06/30/2024	$50.01	$13.00	$14.86	$0.00	$77.87
	12/29/2024	$51.06	$13.25	$15.06	$0.00	$79.37
	06/29/2025	$52.16	$13.50	$15.21	$0.00	$80.87
	12/28/2025	$53.26	$13.75	$15.36	$0.00	$82.37
	06/28/2026	$54.41	$14.00	$15.46	$0.00	$83.87
	01/03/2027	$55.56	$14.25	$15.56	$0.00	$85.37

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- ELECTRICIAN"						
FIRE ALARM REPAIR / MAINTENANCE / COMMISSIONING *ELECTRICIANS LOCAL 7*	12/31/2023	$49.01	$12.75	$14.61	$0.00	$76.37
	06/30/2024	$50.01	$13.00	$14.86	$0.00	$77.87
	12/29/2024	$51.06	$13.25	$15.06	$0.00	$79.37
	06/29/2025	$52.16	$13.50	$15.21	$0.00	$80.87
	12/28/2025	$53.26	$13.75	$15.36	$0.00	$82.37
	06/28/2026	$54.41	$14.00	$15.46	$0.00	$83.87
	01/03/2027	$55.56	$14.25	$15.56	$0.00	$85.37
For apprentice rates see "Apprentice- TELECOMMUNICATIONS TECHNICIAN"						
FIREMAN *OPERATING ENGINEERS LOCAL 98*	12/01/2023	$39.03	$13.78	$15.15	$0.00	$67.96

Apprentice - *OPERATING ENGINEERS - Local 98 Class 3*

Effective Date - 12/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	$23.42	$13.78	$15.15	$0.00	$52.35
2	70	$27.32	$13.78	$15.15	$0.00	$56.25
3	80	$31.22	$13.78	$15.15	$0.00	$60.15
4	90	$35.13	$13.78	$15.15	$0.00	$64.06

Notes:

Steps 1-2 are 1000 hrs.; Steps 3-4 are 2000 hrs.

Apprentice to Journeyworker Ratio:1:6

FLAGGER & SIGNALER (HEAVY & HIGHWAY) *LABORERS - ZONE 3 (HEAVY & HIGHWAY)*	06/01/2024	$27.01	$9.65	$15.06	$0.00	$51.72
	12/01/2024	$27.01	$9.65	$15.06	$0.00	$51.72
	06/01/2025	$28.09	$9.65	$15.06	$0.00	$52.80
	12/01/2025	$28.09	$9.65	$15.06	$0.00	$52.80
	06/01/2026	$29.21	$9.65	$15.06	$0.00	$53.92
	12/01/2026	$29.21	$9.65	$15.06	$0.00	$53.92
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
FLOORCOVERER *FLOORCOVERERS LOCAL 2168 ZONE III*	03/01/2024	$41.41	$7.91	$18.15	$0.00	$67.47
	09/01/2024	$42.36	$7.91	$18.15	$0.00	$68.42
	03/01/2025	$43.26	$7.91	$18.15	$0.00	$69.32
	09/01/2025	$44.21	$7.91	$18.15	$0.00	$70.27
	03/01/2026	$45.11	$7.91	$18.15	$0.00	$71.17
	09/01/2026	$46.06	$7.91	$18.15	$0.00	$72.12
	03/01/2027	$46.96	$7.91	$18.15	$0.00	$73.02

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate

Apprentice - *FLOORCOVERER - Local 2168 Zone III*

Effective Date - 03/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	$20.71	$7.31	$1.38	$0.00	$29.40
2	55	$22.78	$7.31	$1.38	$0.00	$31.47
3	60	$24.85	$7.31	$2.76	$0.00	$34.92
4	65	$26.92	$7.31	$2.76	$0.00	$36.99
5	70	$28.99	$7.31	$15.39	$0.00	$51.69
6	75	$31.06	$7.31	$15.39	$0.00	$53.76
7	80	$33.13	$7.31	$16.77	$0.00	$57.21
8	85	$35.20	$7.31	$16.77	$0.00	$59.28

Effective Date - 09/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	$21.18	$7.31	$1.38	$0.00	$29.87
2	55	$23.30	$7.31	$1.38	$0.00	$31.99
3	60	$25.42	$7.31	$2.76	$0.00	$35.49
4	65	$27.53	$7.31	$2.76	$0.00	$37.60
5	70	$29.65	$7.31	$15.39	$0.00	$52.35
6	75	$31.77	$7.31	$15.39	$0.00	$54.47
7	80	$33.89	$7.31	$16.77	$0.00	$57.97
8	85	$36.01	$7.31	$16.77	$0.00	$60.09

Notes: Steps are 750 hrs.
% After 10/1/17; 45/45/55/55/70/70/80/80 (1500hr Steps)
Step 1&2 $26.72.24/ 3&4 $32.11/ 5&6 $50.75/ 7&8 $56.14

Apprentice to Journeyworker Ratio:1:1

FORK LIFT *OPERATING ENGINEERS LOCAL 98*	12/01/2023	$39.25	$13.78	$15.15	$0.00	$68.18

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

GENERATORS/LIGHTING PLANTS *OPERATING ENGINEERS LOCAL 98*	12/01/2023	$35.80	$13.78	$15.15	$0.00	$64.73

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

GLAZIER (GLASS PLANK/AIR BARRIER/INTERIOR SYSTEMS) *GLAZIERS LOCAL 1333*	06/01/2020	$39.18	$10.80	$10.45	$0.00	$60.43

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate

Apprentice - *GLAZIER - Local 1333*

Effective Date - 06/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	$19.59	$10.80	$1.80	$0.00	$32.19
2	56	$22.04	$10.80	$1.80	$0.00	$34.64
3	63	$24.49	$10.80	$2.45	$0.00	$37.74
4	69	$26.94	$10.80	$2.45	$0.00	$40.19
5	75	$29.39	$10.80	$3.15	$0.00	$43.34
6	81	$31.83	$10.80	$3.15	$0.00	$45.78
7	88	$34.28	$10.80	$10.45	$0.00	$55.53
8	94	$36.73	$10.80	$10.45	$0.00	$57.98

Notes:

Apprentice to Journeyworker Ratio:1:3

GRADER/TRENCHING MACHINE/DERRICK *OPERATING ENGINEERS LOCAL 98*	12/01/2023	$39.56	$13.78	$15.15	$0.00	$68.49
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
HVAC (DUCTWORK) *SHEETMETAL WORKERS LOCAL 63*	01/01/2024	$40.22	$11.96	$18.74	$2.13	$73.05
	07/01/2024	$40.98	$12.20	$18.74	$2.13	$74.05
	01/01/2025	$42.23	$12.20	$18.74	$2.13	$75.30
For apprentice rates see "Apprentice- SHEET METAL WORKER"						
HVAC (ELECTRICAL CONTROLS) *ELECTRICIANS LOCAL 7*	12/31/2023	$49.01	$12.75	$14.61	$0.00	$76.37
	06/30/2024	$50.01	$13.00	$14.86	$0.00	$77.87
	12/29/2024	$51.06	$13.25	$15.06	$0.00	$79.37
	06/29/2025	$52.16	$13.50	$15.21	$0.00	$80.87
	12/28/2025	$53.26	$13.75	$15.36	$0.00	$82.37
	06/28/2026	$54.41	$14.00	$15.46	$0.00	$83.87
	01/03/2027	$55.56	$14.25	$15.56	$0.00	$85.37
For apprentice rates see "Apprentice- ELECTRICIAN"						
HVAC (TESTING AND BALANCING - AIR) *SHEETMETAL WORKERS LOCAL 63*	01/01/2024	$40.22	$11.96	$18.74	$2.13	$73.05
	07/01/2024	$40.98	$12.20	$18.74	$2.13	$74.05
	01/01/2025	$42.23	$12.20	$18.74	$2.13	$75.30
For apprentice rates see "Apprentice- SHEET METAL WORKER"						
HVAC (TESTING AND BALANCING -WATER) *PLUMBERS & PIPEFITTERS LOCAL 104*	03/17/2024	$49.21	$9.55	$17.10	$0.00	$75.86
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
HVAC MECHANIC *PLUMBERS & PIPEFITTERS LOCAL 104*	03/17/2024	$49.21	$9.55	$17.10	$0.00	$75.86
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
HYDRAULIC DRILLS (HEAVY & HIGHWAY) *LABORERS - ZONE 3 (HEAVY & HIGHWAY)*	06/01/2024	$35.30	$9.65	$15.06	$0.00	$60.01
	12/01/2024	$36.50	$9.65	$15.06	$0.00	$61.21
	06/01/2025	$37.75	$9.65	$15.06	$0.00	$62.46
	12/01/2025	$38.99	$9.65	$15.06	$0.00	$63.70
	06/01/2026	$40.29	$9.65	$15.06	$0.00	$65.00
	12/01/2026	$41.58	$9.65	$15.06	$0.00	$66.29
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)						
INSULATOR (PIPES & TANKS) *HEAT & FROST INSULATORS LOCAL 6 (SPRINGFIELD)*	09/01/2023	$42.80	$14.75	$19.61	$0.00	$77.16
	09/01/2024	$45.54	$14.75	$19.61	$0.00	$79.90
	09/01/2025	$48.27	$14.75	$19.61	$0.00	$82.63
	09/01/2026	$51.01	$14.75	$19.61	$0.00	$85.37

Apprentice - *ASBESTOS INSULATOR (Pipes & Tanks) - Local 6 Springfield*

Effective Date - 09/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	$21.40	$14.75	$14.32	$0.00	$50.47
2	60	$25.68	$14.75	$15.37	$0.00	$55.80
3	70	$29.96	$14.75	$16.43	$0.00	$61.14
4	80	$34.24	$14.75	$17.49	$0.00	$66.48

Effective Date - 09/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	$22.77	$14.75	$14.32	$0.00	$51.84
2	60	$27.32	$14.75	$15.37	$0.00	$57.44
3	70	$31.88	$14.75	$16.43	$0.00	$63.06
4	80	$36.43	$14.75	$17.49	$0.00	$68.67

Notes:
Steps are 1 year

Apprentice to Journeyworker Ratio:1:4

IRONWORKER/WELDER *IRONWORKERS LOCAL 7 (SPRINGFIELD AREA)*	03/16/2024	$40.66	$8.25	$22.70	$0.00	$71.61

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate

Apprentice - *IRONWORKER - Local 7 Springfield*

Effective Date - 03/16/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	$24.40	$8.25	$22.70	$0.00	$55.35
2	70	$28.46	$8.25	$22.70	$0.00	$59.41
3	75	$30.50	$8.25	$22.70	$0.00	$61.45
4	80	$32.53	$8.25	$22.70	$0.00	$63.48
5	85	$34.56	$8.25	$22.70	$0.00	$65.51
6	90	$36.59	$8.25	$22.70	$0.00	$67.54

Notes:

Apprentice to Journeyworker Ratio:1:4

JACKHAMMER & PAVING BREAKER OPERATOR *LABORERS - ZONE 3 (BUILDING & SITE)*	12/01/2023	$33.88	$9.65	$16.84	$0.00	$60.37
For apprentice rates see "Apprentice- LABORER"						
LABORER *LABORERS - ZONE 3 (BUILDING & SITE)*	12/01/2023	$33.50	$9.65	$16.84	$0.00	$59.99

Apprentice - *LABORER - Zone 3 Building & Site*

Effective Date - 12/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	$20.10	$9.65	$16.84	$0.00	$46.59
2	70	$23.45	$9.65	$16.84	$0.00	$49.94
3	80	$26.80	$9.65	$16.84	$0.00	$53.29
4	90	$30.15	$9.65	$16.84	$0.00	$56.64

Notes:

Apprentice to Journeyworker Ratio:1:5

LABORER (HEAVY & HIGHWAY) *LABORERS - ZONE 3 (HEAVY & HIGHWAY)*	06/01/2024	$34.55	$9.65	$15.06	$0.00	$59.26
	12/01/2024	$35.75	$9.65	$15.06	$0.00	$60.46
	06/01/2025	$37.00	$9.65	$15.06	$0.00	$61.71
	12/01/2025	$38.24	$9.65	$15.06	$0.00	$62.95
	06/01/2026	$39.54	$9.65	$15.06	$0.00	$64.25
	12/01/2026	$40.83	$9.65	$15.06	$0.00	$65.54

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate

Apprentice - *LABORER (Heavy & Highway) - Zone 3*

Effective Date - 06/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	$20.73	$9.65	$15.06	$0.00	$45.44
2	70	$24.19	$9.65	$15.06	$0.00	$48.90
3	80	$27.64	$9.65	$15.06	$0.00	$52.35
4	90	$31.10	$9.65	$15.06	$0.00	$55.81

Effective Date - 12/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	$21.45	$9.65	$15.06	$0.00	$46.16
2	70	$25.03	$9.65	$15.06	$0.00	$49.74
3	80	$28.60	$9.65	$15.06	$0.00	$53.31
4	90	$32.18	$9.65	$15.06	$0.00	$56.89

Notes:

Apprentice to Journeyworker Ratio:1:5

LABORER: CARPENTER TENDER *LABORERS - ZONE 3 (BUILDING & SITE)*	12/01/2023	$33.50	$9.65	$16.84	$0.00	$59.99
For apprentice rates see "Apprentice- LABORER"						
LABORER: CEMENT FINISHER TENDER *LABORERS - ZONE 3 (BUILDING & SITE)*	12/01/2023	$34.13	$9.40	$16.59	$0.00	$60.12
For apprentice rates see "Apprentice- LABORER"						
LABORER: HAZARDOUS WASTE/ASBESTOS REMOVER *LABORERS - ZONE 3 (BUILDING & SITE)*	12/01/2023	$33.60	$9.65	$16.97	$0.00	$60.22
For apprentice rates see "Apprentice- LABORER"						
LABORER: MASON TENDER *LABORERS - ZONE 3 (BUILDING & SITE)*	12/01/2023	$34.63	$9.65	$16.84	$0.00	$61.12
For apprentice rates see "Apprentice- LABORER"						
LABORER: MASON TENDER (HEAVY & HIGHWAY) *LABORERS - ZONE 3 (HEAVY & HIGHWAY)*	06/01/2024	$34.80	$9.65	$15.06	$0.00	$59.51
	12/01/2024	$36.00	$9.65	$15.06	$0.00	$60.71
	06/01/2025	$37.25	$9.65	$15.06	$0.00	$61.96
	12/01/2025	$38.49	$9.65	$15.06	$0.00	$63.20
	06/01/2026	$39.79	$9.65	$15.06	$0.00	$64.50
	12/01/2026	$41.08	$9.65	$15.06	$0.00	$65.79
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
LABORER: MULTI-TRADE TENDER *LABORERS - ZONE 3 (BUILDING & SITE)*	12/01/2023	$33.50	$9.65	$16.84	$0.00	$59.99
For apprentice rates see "Apprentice- LABORER"						
LABORER: TREE REMOVER *LABORERS - ZONE 3 (BUILDING & SITE)*	12/01/2023	$33.50	$9.65	$16.84	$0.00	$59.99
This classification applies to the removal of standing trees, and the trimming and removal of branches and limbs when related to public works construction or site clearance incidental to construction . For apprentice rates see "Apprentice- LABORER"						
LASER BEAM OPERATOR *LABORERS - ZONE 3 (BUILDING & SITE)*	12/01/2023	$33.88	$9.65	$16.84	$0.00	$60.37
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
LASER BEAM OPERATOR (HEAVY & HIGHWAY) *LABORERS - ZONE 3 (HEAVY & HIGHWAY)*	06/01/2024	$34.80	$9.65	$15.06	$0.00	$59.51
	12/01/2024	$36.00	$9.65	$15.06	$0.00	$60.71
	06/01/2025	$37.25	$9.65	$15.06	$0.00	$61.96
	12/01/2025	$38.49	$9.65	$15.06	$0.00	$63.20
	06/01/2026	$39.79	$9.65	$15.06	$0.00	$64.50
	12/01/2026	$41.08	$9.65	$15.06	$0.00	$65.79
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)						
MARBLE & TILE FINISHERS *BRICKLAYERS LOCAL 3 (SPR/PITT) - MARBLE & TILE*	02/01/2024	$41.37	$11.49	$20.53	$0.00	$73.39
	08/01/2024	$43.05	$11.49	$20.53	$0.00	$75.07
	02/01/2025	$44.90	$11.49	$20.53	$0.00	$76.92
	08/01/2025	$45.81	$11.49	$20.53	$0.00	$77.83
	02/01/2026	$46.89	$11.49	$20.53	$0.00	$78.91
	08/01/2026	$48.65	$11.49	$20.53	$0.00	$80.67
	02/01/2027	$49.77	$11.49	$20.53	$0.00	$81.79

Apprentice - *MARBLE-TILE FINISHER-Local 3 Marble/Tile (Spr/Pitt)*

Effective Date - 02/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	$20.69	$11.49	$20.53	$0.00	$52.71
2	60	$24.82	$11.49	$20.53	$0.00	$56.84
3	70	$28.96	$11.49	$20.53	$0.00	$60.98
4	80	$33.10	$11.49	$20.53	$0.00	$65.12
5	90	$37.23	$11.49	$20.53	$0.00	$69.25

Effective Date - 08/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	$21.53	$11.49	$20.53	$0.00	$53.55
2	60	$25.83	$11.49	$20.53	$0.00	$57.85
3	70	$30.14	$11.49	$20.53	$0.00	$62.16
4	80	$34.44	$11.49	$20.53	$0.00	$66.46
5	90	$38.75	$11.49	$20.53	$0.00	$70.77

Notes:

Apprentice to Journeyworker Ratio:1:5

MARBLE MASON/TILE LAYER(SP/PT)SeeBrick
BRICKLAYERS LOCAL 3 (SPR/PITT) - MARBLE & TILE

See "BRICK/STONE/ARTIFICIAL MASONRY(INCL.MASONRY WATERPROOFING)

MECH. SWEEPER OPERATOR (ON CONST. SITES) *OPERATING ENGINEERS LOCAL 98*	12/01/2023	$39.56	$13.78	$15.15	$0.00	$68.49
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
MECHANIC/WELDER/BOOM TRUCK *OPERATING ENGINEERS LOCAL 98*	12/01/2023	$39.03	$13.78	$15.15	$0.00	$67.96
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
MILLWRIGHT (Zone 3) *MILLWRIGHTS LOCAL 1121 - Zone 3*	01/01/2024	$41.20	$10.08	$21.22	$0.00	$72.50
	01/06/2025	$43.48	$10.08	$21.22	$0.00	$74.78
	01/05/2026	$45.76	$10.08	$21.22	$0.00	$77.06

Apprentice - *MILLWRIGHT - Local 1121 Zone 3*

Effective Date - 01/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	$22.66	$10.08	$5.36	$0.00	$38.10
2	65	$26.78	$10.08	$6.34	$0.00	$43.20
3	75	$30.90	$10.08	$18.78	$0.00	$59.76
4	85	$35.02	$10.08	$19.76	$0.00	$64.86

Effective Date - 01/06/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	$23.91	$10.08	$5.36	$0.00	$39.35
2	65	$28.26	$10.08	$6.34	$0.00	$44.68
3	75	$32.61	$10.08	$18.78	$0.00	$61.47
4	85	$36.96	$10.08	$19.76	$0.00	$66.80

Notes: Step 1&2 Appr. indentured after 1/6/2020 receive no pension, but do receive annuity. (Step 1 $5.72, Step 2 $6.66)
Steps are 2,000 hours

Apprentice to Journeyworker Ratio:1:4

MORTAR MIXER *LABORERS - ZONE 3 (BUILDING & SITE)*	12/01/2023	$33.88	$9.65	$16.84	$0.00	$60.37
For apprentice rates see "Apprentice- LABORER"						
OILER *OPERATING ENGINEERS LOCAL 98*	12/01/2023	$35.02	$13.78	$15.15	$0.00	$63.95
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
OTHER POWER DRIVEN EQUIPMENT - CLASS VI *OPERATING ENGINEERS LOCAL 98*	12/01/2023	$32.74	$13.78	$15.15	$0.00	$61.67
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PAINTER (BRIDGES/TANKS) *PAINTERS LOCAL 35 - ZONE 3*	01/01/2024	$56.06	$9.95	$23.95	$0.00	$89.96
	07/01/2024	$57.26	$9.95	$23.95	$0.00	$91.16
	01/01/2025	$58.46	$9.95	$23.95	$0.00	$92.36

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate

Apprentice - *PAINTER Local 35 - BRIDGES/TANKS*

Effective Date - 01/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	$28.03	$9.95	$0.00	$0.00	$37.98
2	55	$30.83	$9.95	$6.66	$0.00	$47.44
3	60	$33.64	$9.95	$7.26	$0.00	$50.85
4	65	$36.44	$9.95	$7.87	$0.00	$54.26
5	70	$39.24	$9.95	$20.32	$0.00	$69.51
6	75	$42.05	$9.95	$20.93	$0.00	$72.93
7	80	$44.85	$9.95	$21.53	$0.00	$76.33
8	90	$50.45	$9.95	$22.74	$0.00	$83.14

Effective Date - 07/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	$28.63	$9.95	$0.00	$0.00	$38.58
2	55	$31.49	$9.95	$6.66	$0.00	$48.10
3	60	$34.36	$9.95	$7.26	$0.00	$51.57
4	65	$37.22	$9.95	$7.87	$0.00	$55.04
5	70	$40.08	$9.95	$20.32	$0.00	$70.35
6	75	$42.95	$9.95	$20.93	$0.00	$73.83
7	80	$45.81	$9.95	$21.53	$0.00	$77.29
8	90	$51.53	$9.95	$22.74	$0.00	$84.22

Notes:
Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER (SPRAY OR SANDBLAST, NEW) *	01/01/2024	$38.83	$9.65	$19.90	$0.00	$68.38
* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used.*PAINTERS LOCAL 35 - ZONE 3*	07/01/2024	$40.03	$9.65	$19.90	$0.00	$69.58
	01/01/2025	$41.23	$9.65	$19.90	$0.00	$70.78

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate

Apprentice - *PAINTER Local 35 Zone 3 - Spray/Sandblast - New*

Effective Date - 01/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	$19.42	$9.95	$0.00	$0.00	$29.37
2	55	$21.36	$9.95	$4.43	$0.00	$35.74
3	60	$23.30	$9.95	$4.83	$0.00	$38.08
4	65	$25.24	$9.95	$5.23	$0.00	$40.42
5	70	$27.18	$9.95	$17.49	$0.00	$54.62
6	75	$29.12	$9.95	$17.89	$0.00	$56.96
7	80	$31.06	$9.95	$18.29	$0.00	$59.30
8	90	$34.95	$9.95	$19.10	$0.00	$64.00

Effective Date - 07/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	$20.02	$9.95	$0.00	$0.00	$29.97
2	55	$22.02	$9.95	$4.43	$0.00	$36.40
3	60	$24.02	$9.95	$4.83	$0.00	$38.80
4	65	$26.02	$9.95	$5.23	$0.00	$41.20
5	70	$28.02	$9.95	$17.49	$0.00	$55.46
6	75	$30.02	$9.95	$17.89	$0.00	$57.86
7	80	$32.02	$9.95	$18.29	$0.00	$60.26
8	90	$36.03	$9.95	$19.10	$0.00	$65.08

Notes:
Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER (SPRAY OR SANDBLAST, REPAINT) *PAINTERS LOCAL 35 - ZONE 3*	01/01/2024	$36.15	$9.95	$19.90	$0.00	$66.00
	07/01/2024	$37.35	$9.95	$19.90	$0.00	$67.20
	01/01/2025	$38.55	$9.95	$19.90	$0.00	$68.40

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate

Apprentice - *PAINTER Local 35 Zone 3 - Spray/Sandblast - Repaint*

Effective Date - 01/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	$18.08	$9.95	$0.00	$0.00	$28.03
2	55	$19.88	$9.95	$4.43	$0.00	$34.26
3	60	$21.69	$9.95	$4.83	$0.00	$36.47
4	65	$23.50	$9.95	$5.23	$0.00	$38.68
5	70	$25.31	$9.95	$17.49	$0.00	$52.75
6	75	$27.11	$9.95	$17.89	$0.00	$54.95
7	80	$28.92	$9.95	$18.29	$0.00	$57.16
8	90	$32.54	$9.95	$19.10	$0.00	$61.59

Effective Date - 07/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	$18.68	$9.95	$0.00	$0.00	$28.63
2	55	$20.54	$9.95	$4.43	$0.00	$34.92
3	60	$22.41	$9.95	$4.83	$0.00	$37.19
4	65	$24.28	$9.95	$5.23	$0.00	$39.46
5	70	$26.15	$9.95	$17.49	$0.00	$53.59
6	75	$28.01	$9.95	$17.89	$0.00	$55.85
7	80	$29.88	$9.95	$18.29	$0.00	$58.12
8	90	$33.62	$9.95	$19.10	$0.00	$62.67

Notes:
Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER / TAPER (BRUSH, NEW) *	01/01/2024	$37.43	$9.95	$19.90	$0.00	$67.28
* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used.*PAINTERS LOCAL 35 - ZONE 3*	07/01/2024	$38.63	$9.95	$19.90	$0.00	$68.48
	01/01/2025	$39.83	$9.95	$19.90	$0.00	$69.68

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate

Apprentice - *PAINTER - Local 35 Zone 3 - BRUSH NEW*

Effective Date - 01/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	$18.72	$9.95	$0.00	$0.00	$28.67
2	55	$20.59	$9.95	$4.43	$0.00	$34.97
3	60	$22.46	$9.95	$4.83	$0.00	$37.24
4	65	$24.33	$9.95	$5.23	$0.00	$39.51
5	70	$26.20	$9.95	$17.49	$0.00	$53.64
6	75	$28.07	$9.95	$17.89	$0.00	$55.91
7	80	$29.94	$9.95	$18.29	$0.00	$58.18
8	90	$33.69	$9.95	$19.10	$0.00	$62.74

Effective Date - 07/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	$19.32	$9.95	$0.00	$0.00	$29.27
2	55	$21.25	$9.95	$4.43	$0.00	$35.63
3	60	$23.18	$9.95	$4.83	$0.00	$37.96
4	65	$25.11	$9.95	$5.23	$0.00	$40.29
5	70	$27.04	$9.95	$17.49	$0.00	$54.48
6	75	$28.97	$9.95	$17.89	$0.00	$56.81
7	80	$30.90	$9.95	$18.29	$0.00	$59.14
8	90	$34.77	$9.95	$19.10	$0.00	$63.82

Notes:
Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER / TAPER (BRUSH, REPAINT) *PAINTERS LOCAL 35 - ZONE 3*	01/01/2024	$34.75	$9.95	$19.90	$0.00	$64.60
	07/01/2024	$35.95	$9.95	$19.90	$0.00	$65.80
	01/01/2025	$37.15	$9.95	$19.90	$0.00	$67.00

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate

Apprentice - *PAINTER Local 35 Zone 3 - BRUSH REPAINT*

Effective Date - 01/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	$17.38	$9.95	$0.00	$0.00	$27.33
2	55	$19.11	$9.95	$4.43	$0.00	$33.49
3	60	$20.85	$9.95	$4.83	$0.00	$35.63
4	65	$22.59	$9.95	$5.23	$0.00	$37.77
5	70	$24.33	$9.95	$17.49	$0.00	$51.77
6	75	$26.06	$9.95	$17.89	$0.00	$53.90
7	80	$27.80	$9.95	$18.29	$0.00	$56.04
8	90	$31.28	$9.95	$19.10	$0.00	$60.33

Effective Date - 07/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	$17.98	$9.95	$0.00	$0.00	$27.93
2	55	$19.77	$9.95	$4.43	$0.00	$34.15
3	60	$21.57	$9.95	$4.83	$0.00	$36.35
4	65	$23.37	$9.95	$5.23	$0.00	$38.55
5	70	$25.17	$9.95	$17.49	$0.00	$52.61
6	75	$26.96	$9.95	$17.89	$0.00	$54.80
7	80	$28.76	$9.95	$18.29	$0.00	$57.00
8	90	$32.36	$9.95	$19.10	$0.00	$61.41

Notes:
Steps are 750 hrs.

Apprentice to Journeyworker Ratio:1:1

PAINTER TRAFFIC MARKINGS (HEAVY/HIGHWAY) *LABORERS - ZONE 3 (HEAVY & HIGHWAY)*	06/01/2024	$34.55	$9.65	$15.06	$0.00	$59.26
	12/01/2024	$35.75	$9.65	$15.06	$0.00	$60.46
	06/01/2025	$37.00	$9.65	$15.06	$0.00	$61.71
	12/01/2025	$38.24	$9.65	$15.06	$0.00	$62.95
	06/01/2026	$39.54	$9.65	$15.06	$0.00	$64.25
	12/01/2026	$40.83	$9.65	$15.06	$0.00	$65.54
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)						
PANEL & PICKUP TRUCKS DRIVER *TEAMSTERS JOINT COUNCIL NO. 10 ZONE B*	06/01/2024	$39.78	$15.07	$18.67	$0.00	$73.52
	12/01/2024	$39.78	$15.07	$20.17	$0.00	$75.02
	01/01/2025	$39.78	$15.57	$20.17	$0.00	$75.52
	06/01/2025	$40.78	$15.57	$20.17	$0.00	$76.52
	12/01/2025	$40.78	$15.57	$21.78	$0.00	$78.13
	01/01/2026	$40.78	$16.17	$21.78	$0.00	$78.73
	06/01/2026	$41.78	$16.17	$21.78	$0.00	$79.73
	12/01/2026	$41.78	$16.17	$23.52	$0.00	$81.47
	01/01/2027	$41.78	$16.77	$23.52	$0.00	$82.07

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
PIER AND DOCK CONSTRUCTOR (UNDERPINNING AND DECK) *PILE DRIVER LOCAL 56 (ZONE 3)* For apprentice rates see "Apprentice- PILE DRIVER"	08/01/2020	$43.53	$9.40	$23.12	$0.00	$76.05
PILE DRIVER *PILE DRIVER LOCAL 56 (ZONE 3)*	08/01/2020	$43.53	$9.40	$23.12	$0.00	$76.05

Apprentice - *PILE DRIVER - Local 56 Zone 3*

Effective Date - 08/01/2020

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	0	$0.00	$0.00	$0.00	$0.00	$0.00

Notes: Apprentice wages shall be no less than the following Steps;
(Same as set in Zone 1)
1$57.06/2$61.96/3$66.87/4$69.32/5$71.78/6$71.78/7$76.68/8$76.68

Apprentice to Journeyworker Ratio:1:5

PIPELAYER *LABORERS - ZONE 3 (BUILDING & SITE)* For apprentice rates see "Apprentice- LABORER"	12/01/2023	$33.88	$9.65	$16.84	$0.00	$60.37
PIPELAYER (HEAVY & HIGHWAY) *LABORERS - ZONE 3 (HEAVY & HIGHWAY)*	06/01/2024	$34.80	$9.65	$15.06	$0.00	$59.51
	12/01/2024	$36.00	$9.65	$15.06	$0.00	$60.71
	06/01/2025	$37.25	$9.65	$15.06	$0.00	$61.96
	12/01/2025	$38.49	$9.65	$15.06	$0.00	$63.20
	06/01/2026	$39.79	$9.65	$15.06	$0.00	$64.50
	12/01/2026	$41.08	$9.65	$15.06	$0.00	$65.79
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
PLUMBER & PIPEFITTER *PLUMBERS & PIPEFITTERS LOCAL 104*	03/17/2024	$49.21	$9.55	$17.10	$0.00	$75.86

Apprentice - *PLUMBER/PIPEFITTER - Local 104*

Effective Date - 03/17/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	$22.14	$9.55	$10.10	$0.00	$41.79
2	50	$24.61	$9.55	$10.10	$0.00	$44.26
3	55	$27.07	$9.55	$10.10	$0.00	$46.72
4	60	$29.53	$9.55	$10.10	$0.00	$49.18
5	65	$31.99	$9.55	$10.10	$0.00	$51.64
6	70	$34.45	$9.55	$10.10	$0.00	$54.10
7	75	$36.91	$9.55	$10.10	$0.00	$56.56
8	80	$39.37	$9.55	$10.10	$0.00	$59.02
9	80	$39.37	$9.55	$17.10	$0.00	$66.02
10	80	$39.37	$9.55	$17.10	$0.00	$66.02

Notes: **1:1,2:5,3:9,4:12

Apprentice to Journeyworker Ratio:**

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
PNEUMATIC CONTROLS (TEMP.) *PLUMBERS & PIPEFITTERS LOCAL 104*	03/17/2024	$49.21	$9.55	$17.10	$0.00	$75.86
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
PNEUMATIC DRILL/TOOL OPERATOR (HEAVY & HIGHWAY) *LABORERS - ZONE 3 (HEAVY & HIGHWAY)*	06/01/2024	$34.80	$9.65	$15.06	$0.00	$59.51
	12/01/2024	$36.00	$9.65	$15.06	$0.00	$60.71
	06/01/2025	$37.25	$9.65	$15.06	$0.00	$61.96
	12/01/2025	$38.49	$9.65	$15.06	$0.00	$63.20
	06/01/2026	$39.79	$9.65	$15.06	$0.00	$64.50
	12/01/2026	$41.08	$9.65	$15.06	$0.00	$65.79
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
POWDERMAN & BLASTER *LABORERS - ZONE 3 (BUILDING & SITE)*	12/01/2023	$35.13	$9.40	$16.59	$0.00	$61.12
For apprentice rates see "Apprentice- LABORER"						
POWDERMAN & BLASTER (HEAVY & HIGHWAY) *LABORERS - ZONE 3 (HEAVY & HIGHWAY)*	06/01/2024	$35.55	$9.65	$15.06	$0.00	$60.26
	12/01/2024	$36.75	$9.65	$15.06	$0.00	$61.46
	06/01/2025	$38.00	$9.65	$15.06	$0.00	$62.71
	12/01/2025	$39.24	$9.65	$15.06	$0.00	$63.95
	06/01/2026	$40.54	$9.65	$15.06	$0.00	$65.25
	12/01/2026	$41.83	$9.65	$15.06	$0.00	$66.54
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
PUMP OPERATOR (CONCRETE) *OPERATING ENGINEERS LOCAL 98*	12/01/2023	$39.56	$13.78	$15.15	$0.00	$68.49
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (DEWATERING, OTHER) *OPERATING ENGINEERS LOCAL 98*	12/01/2023	$39.03	$13.78	$15.15	$0.00	$67.96
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
READY-MIX CONCRETE DRIVER *TEAMSTERS 404 - Construction Service (Northampton)*	05/01/2024	$26.14	$11.82	$7.25	$0.00	$45.21
RIDE-ON MOTORIZED BUGGY OPERATOR *LABORERS - ZONE 3 (BUILDING & SITE)*	12/01/2023	$33.88	$9.65	$16.84	$0.00	$60.37
For apprentice rates see "Apprentice- LABORER"						
ROLLER OPERATOR *OPERATING ENGINEERS LOCAL 98*	12/01/2023	$38.42	$13.78	$15.15	$0.00	$67.35
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
ROOFER (Coal tar pitch) *ROOFERS LOCAL 248*	07/16/2023	$38.91	$10.35	$18.00	$0.00	$67.26
For apprentice rates see "Apprentice- ROOFER"						
ROOFER (Inc.Roofer Waterproofng &Roofer Damproofg) *ROOFERS LOCAL 248*	07/16/2023	$38.41	$10.35	$18.00	$0.00	$66.76

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate

Apprentice - *ROOFER - Local 248*

Effective Date - 07/16/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	$23.05	$10.35	$0.00	$0.00	$33.40
2	65	$24.97	$10.35	$18.00	$0.00	$53.32
3	70	$26.89	$10.35	$18.00	$0.00	$55.24
4	75	$28.81	$10.35	$18.00	$0.00	$57.16
5	80	$30.73	$10.35	$18.00	$0.00	$59.08
6	85	$32.65	$10.35	$18.00	$0.00	$61.00
7	90	$34.57	$10.35	$18.00	$0.00	$62.92
8	95	$36.49	$10.35	$18.00	$0.00	$64.84

Notes:

Steps are 750 hrs.Roofer(Tear Off)1:1; Same as above

Apprentice to Journeyworker Ratio:1:3

ROOFER SLATE / TILE / PRECAST CONCRETE *ROOFERS LOCAL 248*	07/16/2023	$38.91	$10.35	$18.00	$0.00	$67.26
For apprentice rates see "Apprentice- ROOFER"						
SCRAPER *OPERATING ENGINEERS LOCAL 98*	12/01/2023	$39.03	$13.78	$15.15	$0.00	$67.96
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
SELF-POWERED ROLLERS AND COMPACTORS (TAMPERS) *OPERATING ENGINEERS LOCAL 98*	12/01/2023	$38.42	$13.78	$15.15	$0.00	$67.35
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
SELF-PROPELLED POWER BROOM *OPERATING ENGINEERS LOCAL 98*	12/01/2023	$35.80	$13.78	$15.15	$0.00	$64.73
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
SHEETMETAL WORKER *SHEETMETAL WORKERS LOCAL 63*	01/01/2024	$40.22	$11.96	$18.74	$2.13	$73.05
	07/01/2024	$40.98	$12.20	$18.74	$2.13	$74.05
	01/01/2025	$42.23	$12.20	$18.74	$2.13	$75.30

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate

Apprentice - *SHEET METAL WORKER - Local 63*

Effective Date - 01/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	$18.10	$5.38	$4.86	$0.85	$29.19
2	50	$20.11	$5.98	$5.40	$0.94	$32.43
3	55	$22.12	$6.58	$9.71	$1.15	$39.56
4	60	$24.13	$7.18	$9.71	$1.23	$42.25
5	65	$26.14	$7.77	$9.71	$1.31	$44.93
6	70	$28.15	$8.37	$9.71	$1.39	$47.62
7	75	$30.17	$8.97	$9.71	$1.47	$50.32
8	80	$32.18	$9.57	$17.66	$1.78	$61.19
9	85	$34.19	$10.17	$17.66	$1.86	$63.88
10	90	$36.20	$10.76	$17.66	$1.94	$66.56

Effective Date - 07/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	$18.44	$5.49	$4.86	$0.85	$29.64
2	50	$20.49	$6.10	$5.40	$0.94	$32.93
3	55	$22.54	$6.71	$9.71	$1.15	$40.11
4	60	$24.59	$7.32	$9.71	$1.23	$42.85
5	65	$26.64	$7.93	$9.71	$1.31	$45.59
6	70	$28.69	$8.54	$9.71	$1.39	$48.33
7	75	$30.74	$9.15	$9.71	$1.47	$51.07
8	80	$32.78	$9.76	$17.66	$1.78	$61.98
9	85	$34.83	$10.37	$17.66	$1.86	$64.72
10	90	$36.88	$10.98	$17.66	$1.94	$67.46

Notes:

Apprentice to Journeyworker Ratio:1:3

SPECIALIZED EARTH MOVING EQUIP < 35 TONS *TEAMSTERS JOINT COUNCIL NO. 10 ZONE B*	06/01/2024	$40.24	$15.07	$18.67	$0.00	$73.98
	12/01/2024	$40.24	$15.07	$20.17	$0.00	$75.48
	01/01/2025	$40.24	$15.57	$20.17	$0.00	$75.98
	06/01/2025	$41.24	$15.57	$20.17	$0.00	$76.98
	12/01/2025	$41.24	$15.57	$21.78	$0.00	$78.59
	01/01/2026	$41.24	$16.17	$21.78	$0.00	$79.19
	06/01/2026	$42.24	$16.17	$21.78	$0.00	$80.19
	12/01/2026	$42.24	$16.17	$23.52	$0.00	$81.93
	01/01/2027	$42.24	$16.77	$23.52	$0.00	$82.53

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
SPECIALIZED EARTH MOVING EQUIP > 35 TONS *TEAMSTERS JOINT COUNCIL NO. 10 ZONE B*	06/01/2024	$40.53	$15.07	$18.67	$0.00	$74.27
	12/01/2024	$40.53	$15.07	$20.17	$0.00	$75.77
	01/01/2025	$40.53	$15.57	$20.17	$0.00	$76.27
	06/01/2025	$41.53	$15.57	$20.17	$0.00	$77.27
	12/01/2025	$41.53	$15.57	$21.78	$0.00	$78.88
	01/01/2026	$41.53	$16.17	$21.78	$0.00	$79.48
	06/01/2026	$42.53	$16.17	$21.78	$0.00	$80.48
	12/01/2026	$42.53	$16.17	$23.52	$0.00	$82.22
	01/01/2027	$42.53	$16.77	$23.52	$0.00	$82.82
SPRINKLER FITTER *SPRINKLER FITTERS LOCAL 669*	04/01/2023	$47.43	$11.45	$16.61	$0.00	$75.49

Apprentice - *SPRINKLER FITTER - Local 669*

Effective Date - 04/01/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	$21.34	$8.22	$0.00	$0.00	$29.56
2	50	$23.72	$8.22	$0.00	$0.00	$31.94
3	55	$26.09	$11.45	$7.20	$0.00	$44.74
4	60	$28.46	$11.45	$8.35	$0.00	$48.26
5	65	$30.83	$11.45	$8.35	$0.00	$50.63
6	70	$33.20	$11.45	$8.60	$0.00	$53.25
7	75	$35.57	$11.45	$8.60	$0.00	$55.62
8	80	$37.94	$11.45	$8.60	$0.00	$57.99
9	85	$40.32	$11.45	$8.60	$0.00	$60.37
10	90	$42.69	$11.45	$8.60	$0.00	$62.74

Notes:

Apprentice to Journeyworker Ratio:1:1

TELECOMMUNICATION TECHNICIAN *ELECTRICIANS LOCAL 7*	12/31/2023	$49.01	$12.75	$14.61	$0.00	$76.37
	06/30/2024	$50.01	$13.00	$14.86	$0.00	$77.87
	12/29/2024	$51.06	$13.25	$15.06	$0.00	$79.37
	06/29/2025	$52.16	$13.50	$15.21	$0.00	$80.87
	12/28/2025	$53.26	$13.75	$15.36	$0.00	$82.37
	06/28/2026	$54.41	$14.00	$15.46	$0.00	$83.87
	01/03/2027	$55.56	$14.25	$15.56	$0.00	$85.37

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate

Apprentice - *TELECOMMUNICATION TECHNICIAN - Local 7*

Effective Date - 12/31/2023

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	$19.60	$7.05	$0.59	$0.00	$27.24
2	45	$22.05	$7.05	$0.66	$0.00	$29.76
3	50	$24.51	$12.75	$7.34	$0.00	$44.60
4	55	$26.96	$12.75	$7.41	$0.00	$47.12
5	65	$31.86	$12.75	$9.52	$0.00	$54.13
6	70	$34.31	$12.75	$10.90	$0.00	$57.96

Effective Date - 06/30/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	$20.00	$7.20	$0.60	$0.00	$27.80
2	45	$22.50	$7.20	$0.68	$0.00	$30.38
3	50	$25.01	$13.00	$7.40	$0.00	$45.41
4	55	$27.51	$13.00	$7.48	$0.00	$47.99
5	65	$32.51	$13.00	$9.64	$0.00	$55.15
6	70	$35.01	$13.00	$11.06	$0.00	$59.07

Notes:
Steps are 800 hours

Apprentice to Journeyworker Ratio:1:1

TERRAZZO FINISHERS *BRICKLAYERS LOCAL 3 (SPR/PITT) - MARBLE & TILE*	02/01/2024	$61.34	$11.49	$23.59	$0.00	$96.42
	08/01/2024	$63.44	$11.49	$23.59	$0.00	$98.52
	02/01/2025	$64.74	$11.49	$23.59	$0.00	$99.82
	08/01/2025	$66.89	$11.49	$23.59	$0.00	$101.97
	02/10/2026	$68.24	$11.49	$23.59	$0.00	$103.32
	08/01/2026	$70.44	$11.49	$23.59	$0.00	$105.52
	02/01/2027	$71.84	$11.49	$23.59	$0.00	$106.92

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate

Apprentice - *TERRAZZO FINISHER-Local 3 Marble/Tile (Spr/Ptt)*

Effective Date - 02/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	$30.67	$11.49	$23.59	$0.00	$65.75
2	60	$36.80	$11.49	$23.59	$0.00	$71.88
3	70	$42.94	$11.49	$23.59	$0.00	$78.02
4	80	$49.07	$11.49	$23.59	$0.00	$84.15
5	90	$55.21	$11.49	$23.59	$0.00	$90.29

Effective Date - 08/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	$31.72	$11.49	$23.59	$0.00	$66.80
2	60	$38.06	$11.49	$23.59	$0.00	$73.14
3	70	$44.41	$11.49	$23.59	$0.00	$79.49
4	80	$50.75	$11.49	$23.59	$0.00	$85.83
5	90	$57.10	$11.49	$23.59	$0.00	$92.18

Notes:

Apprentice to Journeyworker Ratio:1:5

TERRAZZO MECHANIC *BRICKLAYERS LOCAL 3 (SPR/PITT) - MARBLE & TILE*	02/01/2024	$62.42	$11.49	$23.56	$0.00	$97.47
	08/01/2024	$64.52	$11.49	$23.56	$0.00	$99.57
	02/01/2025	$65.82	$11.49	$23.56	$0.00	$100.87
	08/01/2025	$67.97	$11.49	$23.56	$0.00	$103.02
	02/01/2026	$69.32	$11.49	$23.56	$0.00	$104.37
	08/01/2026	$71.52	$11.49	$23.56	$0.00	$106.57
	02/01/2027	$72.92	$11.49	$23.56	$0.00	$107.97

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate

Apprentice - *TERRAZZO MECH - Local 3 Marble/Tile (Spr/Pitt)*

Effective Date - 02/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	$31.21	$11.49	$23.56	$0.00	$66.26
2	60	$37.45	$11.49	$23.56	$0.00	$72.50
3	70	$43.69	$11.49	$23.56	$0.00	$78.74
4	80	$49.94	$11.49	$23.56	$0.00	$84.99
5	90	$56.18	$11.49	$23.56	$0.00	$91.23

Effective Date - 08/01/2024

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	$32.26	$11.49	$23.56	$0.00	$67.31
2	60	$38.71	$11.49	$23.56	$0.00	$73.76
3	70	$45.16	$11.49	$23.56	$0.00	$80.21
4	80	$51.62	$11.49	$23.56	$0.00	$86.67
5	90	$58.07	$11.49	$23.56	$0.00	$93.12

Notes:

Apprentice to Journeyworker Ratio:1:5

TEST BORING DRILLER *LABORERS - FOUNDATION AND MARINE*	06/01/2024	$49.81	$9.65	$18.22	$0.00	$77.68
	12/01/2024	$51.28	$9.65	$18.22	$0.00	$79.15
	06/01/2025	$52.78	$9.65	$18.22	$0.00	$80.65
	12/01/2025	$54.28	$9.65	$18.22	$0.00	$82.15
	06/01/2026	$55.83	$9.65	$18.22	$0.00	$83.70
	12/01/2026	$57.33	$9.65	$18.22	$0.00	$85.20
For apprentice rates see "Apprentice- LABORER"						
TEST BORING DRILLER HELPER *LABORERS - FOUNDATION AND MARINE*	06/01/2024	$45.60	$9.65	$18.22	$0.00	$73.47
	12/01/2024	$47.07	$9.65	$18.22	$0.00	$74.94
	06/01/2025	$48.57	$9.65	$18.22	$0.00	$76.44
	12/01/2025	$50.07	$9.65	$18.22	$0.00	$77.94
	06/01/2026	$51.62	$9.65	$18.22	$0.00	$79.49
	12/01/2026	$53.12	$9.65	$18.22	$0.00	$80.99
For apprentice rates see "Apprentice- LABORER"						
TEST BORING LABORER *LABORERS - FOUNDATION AND MARINE*	06/01/2024	$45.48	$9.65	$18.22	$0.00	$73.35
	12/01/2024	$46.95	$9.65	$18.22	$0.00	$74.82
	06/01/2025	$48.45	$9.65	$18.22	$0.00	$76.32
	12/01/2025	$49.95	$9.65	$18.22	$0.00	$77.82
	06/01/2026	$51.50	$9.65	$18.22	$0.00	$79.37
	12/01/2026	$53.00	$9.65	$18.22	$0.00	$80.87
For apprentice rates see "Apprentice- LABORER"						
TRACTORS *OPERATING ENGINEERS LOCAL 98*	12/01/2023	$38.42	$13.78	$15.15	$0.00	$67.35
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TRAILERS FOR EARTH MOVING EQUIPMENT *TEAMSTERS JOINT COUNCIL NO. 10 ZONE B*	06/01/2024	$40.82	$15.07	$18.67	$0.00	$74.56
	12/01/2024	$40.82	$15.07	$20.17	$0.00	$76.06
	01/01/2025	$40.82	$15.57	$20.17	$0.00	$76.56
	06/01/2025	$41.82	$15.57	$20.17	$0.00	$77.56
	12/01/2025	$41.82	$15.57	$21.78	$0.00	$79.17
	01/01/2026	$41.82	$16.17	$21.78	$0.00	$79.77
	06/01/2026	$42.82	$16.17	$21.78	$0.00	$80.77
	12/01/2026	$42.82	$16.17	$23.52	$0.00	$82.51
	01/01/2027	$42.82	$16.77	$23.52	$0.00	$83.11
TUNNEL WORK - COMPRESSED AIR *LABORERS (COMPRESSED AIR)*	06/01/2024	$57.71	$9.65	$19.00	$0.00	$86.36
	12/01/2024	$59.18	$9.65	$19.00	$0.00	$87.83
	06/01/2025	$60.68	$9.65	$19.00	$0.00	$89.33
	12/01/2025	$62.18	$9.65	$19.00	$0.00	$90.83
	06/01/2026	$63.73	$9.65	$19.00	$0.00	$92.38
	12/01/2026	$65.23	$9.65	$19.00	$0.00	$93.88
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - COMPRESSED AIR (HAZ. WASTE) *LABORERS (COMPRESSED AIR)*	06/01/2024	$59.71	$9.65	$19.00	$0.00	$88.36
	12/01/2024	$61.18	$9.65	$19.00	$0.00	$89.83
	06/01/2025	$62.68	$9.65	$19.00	$0.00	$91.33
	12/01/2025	$64.18	$9.65	$19.00	$0.00	$92.83
	06/01/2026	$65.73	$9.65	$19.00	$0.00	$94.38
	12/01/2026	$67.23	$9.65	$19.00	$0.00	$95.88
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR *LABORERS (FREE AIR TUNNEL)*	06/01/2024	$49.78	$9.65	$19.00	$0.00	$78.43
	12/01/2024	$51.25	$9.65	$19.00	$0.00	$79.90
	06/01/2025	$52.75	$9.65	$19.00	$0.00	$81.40
	12/01/2025	$54.25	$9.65	$19.00	$0.00	$82.90
	06/01/2026	$55.80	$9.65	$19.00	$0.00	$84.45
	12/01/2026	$57.30	$9.65	$19.00	$0.00	$85.95
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR (HAZ. WASTE) *LABORERS (FREE AIR TUNNEL)*	06/01/2024	$51.78	$9.65	$19.00	$0.00	$80.43
	12/01/2024	$53.25	$9.65	$19.00	$0.00	$81.90
	06/01/2025	$54.75	$9.65	$19.00	$0.00	$83.40
	12/01/2025	$56.25	$9.65	$19.00	$0.00	$84.90
	06/01/2026	$57.80	$9.65	$19.00	$0.00	$86.45
	12/01/2026	$59.30	$9.65	$19.00	$0.00	$87.95
For apprentice rates see "Apprentice- LABORER"						
VAC-HAUL *TEAMSTERS JOINT COUNCIL NO. 10 ZONE B*	06/01/2024	$40.24	$15.07	$18.67	$0.00	$73.98
	12/01/2024	$40.24	$15.07	$20.17	$0.00	$75.48
	01/01/2025	$40.24	$15.57	$20.17	$0.00	$75.98
	06/01/2025	$41.24	$15.57	$20.17	$0.00	$76.98
	12/01/2025	$41.24	$15.57	$21.78	$0.00	$78.59
	01/01/2026	$41.24	$16.17	$21.78	$0.00	$79.19
	06/01/2026	$42.24	$16.17	$21.78	$0.00	$80.19
	12/01/2026	$42.24	$16.17	$23.52	$0.00	$81.93
	01/01/2027	$42.24	$16.77	$23.52	$0.00	$82.53

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
WAGON DRILL OPERATOR *LABORERS - ZONE 3 (BUILDING & SITE)*	12/01/2023	$34.38	$9.40	$16.59	$0.00	$60.37
For apprentice rates see "Apprentice- LABORER"						
WAGON DRILL OPERATOR (HEAVY & HIGHWAY) *LABORERS - ZONE 3 (HEAVY & HIGHWAY)*	06/01/2024	$34.80	$9.65	$15.06	$0.00	$59.51
	12/01/2024	$36.00	$9.65	$15.06	$0.00	$60.71
	06/01/2025	$37.25	$9.65	$15.06	$0.00	$61.96
	12/01/2025	$38.49	$9.65	$15.06	$0.00	$63.20
	06/01/2026	$39.79	$9.65	$15.06	$0.00	$64.50
	12/01/2026	$41.08	$9.65	$15.06	$0.00	$65.79
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
WATER METER INSTALLER *PLUMBERS & PIPEFITTERS LOCAL 104*	03/17/2024	$49.21	$9.55	$17.10	$0.00	$75.86
For apprentice rates see "Apprentice- PLUMBER/PIPEFITTER" or "PLUMBER/GASFITTER"						

Additional Apprentice Information:

Minimum wage rates for apprentices employed on public works projects are listed above as a percentage of the pre-determined hourly wage rate established by the Commissioner under the provisions of the M.G.L. c. 149, ss. 26-27D. Apprentice ratios are established by the Division of Apprenticeship Training pursuant to M.G.L. c. 23, ss. 11E-11L.

All apprentices must be registered with the Division of Apprenticeship Training in accordance with M.G.L. c. 23, ss. 11E-11L.

All steps are six months (1000 hours.)
Ratios are expressed in allowable number of apprentices to journeymen or fraction thereof, unless otherwise specified.

** Multiple ratios are listed in the comment field.
*** APP to JM; 1:1, 2:2, 2:3, 3:4, 4:4, 4:5, 4:6, 5:7, 6:7, 6:8, 6:9, 7:10, 8:10, 8:11, 8:12, 9:13, 10:13, 10:14, etc.
**** APP to JM; 1:1, 1:2, 2:3, 2:4, 3:5, 4:6, 4:7, 5:8, 6:9, 6:10, 7:11, 8:12, 8:13, 9:14, 10:15, 10:16, etc.

SPECIAL PROVISIONS

SPECIAL PROVISIONS

FOREWORD

Supplementing the Massachusetts Department of Transportation Standard Specifications for Highway and Bridges, 2023 edition, as amended, the following clauses relate in particular to this contract.

Such amendments and addenda as may be attached hereto or referred to herein are hereby specifically made a part of the Special Provisions of this contract as fully and to the same effect as if they had been set forth at length herein.

References in the following Special Provisions, unless otherwise stated, are to the aforesaid Standard Specification (Division 1). In case of conflict between these Special Provisions and the aforesaid Standard Specifications, amendments or addenda, these Special Provisions shall take precedence and shall govern.

The enforcement of the requirements of any of these Special Provisions shall not be construed as waiving any of the rights of the Party of the First Part contained in any of the other provisions of this contract.

DEFINITION OF TERMS

Attention is directed to the provisions of Section 1.00 and the following revisions and amendments:

Department.....	The Massachusetts Department of Transportation, and, when applicable, the particular Department, or official of the City of Northampton authorized by the City to contract for the work involved.
Engineer.....	The Engineer of Northampton acting directly or through an authorized representative acting within the scope of the particular duties entrusted to him.
City.....	The City of Northampton acting through an authorized representative, such representative acting within the scope of the particular duties entrusted to him.

CONSTRUCTION SURVEY CONTROL

All the requirements of Subsection 5.07 regarding employment by the Contractor of engineering personnel or the furnishing and setting of stakes by him are hereby enforced by the City for this project. The Contractor will furnish all engineering necessary to maintain lines and grades and accurate control for the work.

INSURANCE REQUIREMENTS

Attention is directed to the provisions of Subsection 7.05 which are included hereinafter. The coverages of the required public and property damage liability policies shall be as follows:

The successful bidder(s) shall provide the DPW a certificate of liability insurance naming the City of Northampton as an additional insured in the following amounts prior to commencement of work.

Bodily Injury General Liability..... $1,000,000/$2,000,000
Property Damage General Liability..... $1,000,000/$2,000,000
Bodily Injury Automobile Liability..... $500,000/1,000,000
Property Damage Automobile Liability... $100,000/$500,000
Workers Compensation: As required by state law.

Attention is directed to Subsection 7.05C wherein it stipulates that the insurance shall cover all damages to property whether above or below ground. General Liability shall include Explosion, Collapse, and Underground (XCU) which shall be referenced on Certificate of Insurance.

BARRICADES AND WARNING SIGNS

Attention is directed to the provisions of Subsection 7.10 which shall apply to this contract.

TRAFFIC OFFICER

Attention is directed to the provisions of Subsection 7.11 which shall apply to this contract. The Contractor shall be responsible for deciding and scheduling police detail at least one week in advance for the desired shift with the Northampton Police Department (NPD), and keep track of all scheduled hours. In addition, the Contractor shall pay at his own expense all charges for traffic officers who were scheduled to perform traffic duty and were not properly notified, in accordance with the Northampton Police Department's rules and regulations, of either a change in schedule, inclement weather or a work shift cancellation.

City of Northampton Flagger Requirements

Flaggers must be properly trained and certified in accordance with the highway work zone safety guidelines for Massachusetts Municipalities and Contractors. Any flagger working within the City of Northampton shall also have a valid certification in first aid and CPR.

Detail must be posted with the information that if not filled by Northampton Police Department (NPD) or an outside agency, then it will be filled with a flagger.

Detail must be posted for a minimum of 6 hours before a flagger can be used to fill the detail if it remains unfilled. Detail must be posted at the earliest possible time when it is known that a detail officer will be needed.

A flagger may be replaced at any time by an NPD officer prior to the start of the detail if an officer's detail is cancelled but the detail using a flagger is still scheduled. If the detail has already begun and a civilian flagger is working, an NPD officer may ask to see if the company would prefer to replace the flagger with an NPD officer.

Flagger will contact Northampton Dispatch at 413-587-1100 prior to the start of their shift. Flagger will notify the Dispatcher of their name and location in the event that Police and/or Fire response is required for an emergency.

Flaggers will only be eligible for use in the instance that a project being conducted under contract with the City of Northampton would be unable to be completed due to the inability to fill the detail by NPD or with an officer from an outside agency.
Flaggers used to fill these details must be employees of or a subcontractor for the contractor completing the work.

The Chief of Police or a designee of the Chief shall at all times make the final determination as to on what roads within the City of Northampton flaggers are eligible to work. If a road is deemed unsuitable by the Chief or designee for a flagger to conduct traffic, the project shall not be completed without an NPD or other officer filling the detail.

Flaggers must carry a means to communicate with our Dispatch Center at 587-1100. A cell phone is acceptable. See Special Provision Item 850.41 for additional Flagger requirements.

PROTECTION AND RESTORATION OF PROPERTY

In addition to the requirements of Subsection 7.13, special care shall be taken to avoid damaging water mains wherever the excavation is in close proximity to the water line.

If the Contractor wishes to have any underground or overhead utilities temporarily relocated or secured for his convenience, he shall make the necessary arrangement with the owners and make reimbursement for cost thereof at his own expense.

AMENDMENTS OF STANDARD SPECIFICATIONS, ETC.

Amendments of the Standard Specifications for Highway and Bridges, 2023 edition, except where in conflict with other special provisions contained in this proposal, together with minimum dump truck rates as revised by the Department Public Utilities, and minimum wage rates and health and welfare fund contributions as determined under the Provisions of the Massachusetts General Laws, Chapter 149, Section 26 to 27D, inclusive, all of which are on display at the Engineering Department, 125 Locust Street, Northampton, Mass., are hereby included and made a part of this proposal.

PARTIAL PAYMENTS

The Contractor shall, once in each month, make an estimate in writing of the total amount of the work done to the time of such estimate and the value thereof. The Party of the First Part shall retain five percent (5%) of such estimated value as part security for the fulfillment of this contract by the Contractor and shall pay monthly to the Contractor while carrying on the work, the balance not retained as aforesaid after deducting therefrom all previous payments and all sums to be kept or retained under the provisions of this contract. No such estimate or payment shall be required to be made when, in the judgement of the Engineer, the work is not proceeding in accordance with the provisions of the contract, or when in his judgement the value of the work done since the last estimate amounts to less than five hundred ($500) dollars.

ACCEPTANCE AND FINAL PAYMENTS

The Contractor shall, as soon as practicable after the satisfactory completion of the contract, make a final estimate of the amount of work done thereunder and the value of such work, and the Department shall, within sixty-five (65) days from and after the day the work has been approved by the Party of the First Part forward to the Contractor a copy of the final estimate together with an agreement form for his acceptance. After such acceptance has been filed with the Department of Public Works payments of the entire sum will be made, so found to be due thereunder after deducting therefrom all previous payments and all amounts to be retained under the provisions to the contract. All prior partial estimates and payment shall be subject to correction in the final estimate and payment.

SCOPE OF WORK

The work under this contract consists of bridge rehabilitation of Bridge No. N-19-027 (0RA), Old Shepherd Road over the Mill River, located in Northampton. The bridge superstructure is comprised of two wrought iron Pratt Trusses, wrought iron stringers and floorbeams, and a metal corrugated bridge deck covered with an asphalt overlay.

The Contractor shall conduct their own investigation and research existing conditions and measurements affecting the work to be done and shall make their bid in sole reliance thereon.

All work under this contract shall be done in conformance with the *MassDOT Standard Specifications for Highways and Bridges dated 2023;* Supplemental Specifications dated March 31, 2023, *2017 Construction Standard Details,* the *1990 Standard Drawings for Signs and Supports;* The *2015 Overhead Signal Structure and Foundation Standard Drawings,* the *2009 Manual on Uniform Traffic Control Devices (MUTCD)* with *Massachusetts Amendments* and the *Standard Municipal Traffic Code;* the *1968 Standard Drawings for Traffic Signals and Highway Lighting;* the latest edition of *American Standard for Nursery Stock;* the Contract Plans and these Special Provisions.

General

A. Schedule/Phasing

1. The following schedule must be followed by the Contractor unless otherwise directed by the Engineer:
   The Contractor shall not proceed to any other phase unless the preceding phase is complete to the Engineer's satisfaction unless otherwise agreed to by the Engineer. **This project shall be completed by December 31, 2025.**

2. The Contractor shall utilize a maximum of two work crews at any time during the execution of this work. For example, a work crew installing the drainage manhole and a second crew loaming and seeding and performing incidental work. A paving company or other sub-contractors hired by the Contractor to work on this project shall be considered a work crew as defined above.

3. The typical work day shall be 8 hours long (7:00 a.m. - noon and 12:30 p.m. - 3:30 p.m.). The Contractor shall be allowed to work longer hours only in the case of an emergency which is determined not to be the fault of the Contractor. In addition, if due to the Contractor's negligence, as determined by the Engineer, work must extend beyond the time limits mentioned above, the Contractor shall pay at his own expense all personnel service charges incurred by the City.

4. Proposed Construction Schedule:
   The Contractor shall submit an overall project schedule organized by week with work descriptions. For example, week of month/day – construction signs,

mobilization, layout or drainage pipe and structures on [street name].
See Section C below for weekly construction updates to City departments.

B. Traffic Plan

1. The bridge will stay closed to all traffic (including pedestrians and bicycles) for the duration of work. At the end of any workday, the Contractor shall make sure that the bridge and associated roadways and/or sidewalks are secured, and not open to pedestrian and bicycle traffic.

C. The Contractor shall send a schedule to the Engineer, Police Department, and Fire Department prior to Thursday as to the type and location of work planned for the following week.

D. The Contractor shall commence construction within seven calendar days after he receives notice to proceed from the City. Failure to commence construction shall result in default of Contract by the Contractor.

E. Prior to commencement of construction, the Contractor shall attend a pre-construction conference to be arranged by the Engineer. At that time, the Contractor shall be expected to present to the City Officials a comprehensive plan for the execution of every phase of construction.

F. After approval of the traffic management submittal and prior to commencement of construction, the Engineer shall inspect and approve all the signs, barricades and fences necessary to implement the traffic and pedestrian circulation plan described in the Contractor's traffic management plan. In addition, no work shall commence on a daily basis unless all the required signage is in place.

G. The Contractor shall comply with all OSHA (Occupational Safety and Health Administration) regulations, including but not limited to protection from or relocation of overhead wires, at his own expense.

H. The Contractor shall notify in writing all abutters of any work that might have an adverse impact on them. Such work shall include, but not be limited to (a) blocking driveways, (b) blocking sections of roadway, and (c) temporary loss of utilities. Said notice shall be delivered at least 24 hours in advance of any work described in the contract.

I. Utility trenches shall be paved every 48 hours unless otherwise directed by the Engineer.

J. The Contractor shall maintain, preserve and replace all stakes and marks placed by the Engineer throughout the length of this project.

K. BACKFILLING AND COMPACTING IN ACCORDANCE WITH THESE SPECIFICATIONS SHALL BE STRICTLY ENFORCED.

L. No materials shall be stockpiled in the roadway unless approved by the Engineer.

M. All required saw-cuts shall be paid under Item 482.3 Sawcutting Asphalt Pavement.

N. All water shutdowns shall be performed by the Northampton Water Department.

O. Neither the final certificate of payment nor partial or entire occupancy of the premises by the City shall constitute an acceptance of work not constructed in accordance with the Contract Document or relieve the Contractor of liability in respect to responsibility for faulty materials or workmanship. The Contractor shall remedy any defects in the work (materials & workmanship) and pay for any damages resulting from said defects, which appear within the warranty period of one year from the date the City approves the final estimate of the work performed.

P. The Contractor shall take extra care not to disturb highway bounds and property pins encountered within the limit of this project. Any disturbed monumentation, deemed to be the Contractor’s fault, shall be replaced by a registered land surveyor at the Contractor's expense.

Q. The Contractor shall supply the Engineer with at least three emergency phone numbers where the Contractor and his agents can be reached on a 24 hour basis. The list of phone numbers shall be presented in writing at the pre-construction conference. It is the City’s goal to provide prompt response to emergencies which may arise as a result of the proposed construction. Therefore, the Contractor shall have local representation, located within 30 miles of Northampton, able of responding in a timely fashion to emergencies.

R. It will be the Contractor's responsibility and at his own expense to provide horizontal and vertical control for the entire project in accordance with the information contained in the construction plans. The Contractor must demonstrate that he employs personnel with the knowledge and experience to perform this task to the satisfaction of the Engineer.

S. The Contractor shall provide submittals for every component to be used in this project to the Engineer for review and approval. Drawings will be required for all assemblies, including, but not limited to, manholes and catch basins. Said submittals and/or shop drawings shall demonstrate compliance with all stated requirements. The Contractor shall only proceed with fabrication, delivery or construction for such items after receiving submittals marked "No Exception Taken" or "Furnish as Corrected" from the Engineer. Submittals and/or shop drawings marked "Revise and Resubmit" or "Rejected" shall be resubmitted.

AVAILABLE BRIDGE CONDITION REFERENCES

The following documents contain relevant structural/condition information that are included in the Supplemental Information of the bid documents:

1. "In-Depth Inspection Report" done by GPI, dated July 19, 2022.
2. "Routine and Fractural Critical Inspection Reports" done by MassDOT, dated November 29, 2021.

FIELD VERIFICATION OF DIMENSIONS

The Contractor is alerted that no existing bridge plans have been located during the design phase. Dimensions shown on these drawings are taken from the previous 2014 rating report by Stantec (available upon request) and supplemented by limited field measurements and photographic estimations. No guarantee of the accuracy or completeness of the dimensions shown on the Contract Plans is given. The Contractor shall be responsible for field verifying all existing and proposed dimensions, including U-bolt hanger geometry, riveted and bolted connection diameters/fastener arrangements and fastener clearances to ensure a proper fit-up of all repair components prior to submitting shop drawings and fabrication of any steel or other materials needed for bridge rehabilitation. The Contractor shall immediately notify the Engineer of any conflicts between the proposed repairs shown on the Contract Plans and the existing conditions encountered.

CONSTRUCTION LOAD RESTRICTIONS

Floor system repairs will not be permitted to begin until the missing U-bolt at Floorbeam 7 is temporarily replaced, and truss repairs are completed in accordance with the Required Sequence of Repairs shown on the Contract Plans.

The Contractor is alerted that the existing deck is heavily deteriorated and was not inspected by GPI or analyzed for construction loading during the design phase. GPI gives no guarantee that the existing decking can safely support the Contractor's construction activities. For additional information on the existing deck condition, see MassDOT Routine Inspection Report dated November 29, 2021.

The Contractor is alerted that localized sections of the floor system stringers and floorbeams are heavily deteriorated. GPI has analyzed these members to determine their ability to support temporary construction loads in their existing condition assuming a 7/16" steel road plate is placed over the deck as noted in the Contract Plans. A skid-steer style loader was considered in the analysis for the purpose of assisting with the various demolition and repair/replacement activities applicable to the bridge floor system and bridge railings.

Heavy construction machinery shall be prohibited from driving over the bridge at any time except for a single skid-steer style loader with maximum tire reactions and minimum axle/gage spacings not exceeding the limits shown on the Contract Plans. The skid-steer loader shall not be permitted to travel over the Restricted Deck Areas shown on the Contract Plans unless the underlying stringer and floorbeam repairs have been completed and accepted by the Engineer. The skid-steer loader

shall not be permitted to travel over stringers or floorbeams that are temporarily shored.

Temporary road plates shall be prohibited from being placed within the Restricted Construction Load Areas.

The Contractor shall be permitted to operate the skid-steer loader over the new decking. Temporary protection for the new decking shall be provided as applicable as noted on the Contract Plans. The Contractor shall not place construction loads on the new decking exceeding the 85 psf design pedestrian live load.

The Contractor shall be responsible for visibly delineating, maintaining, and Restricted Construction Load Areas, as shown on the Contract Plans, throughout construction to maintain a safe working environment as part of their means and methods. The delineations established in the field shall be subject to the Engineer's approval. At a minimum, restricted deck delineations shall consist of the following:

1. Orange spray paint applied to both the existing decking and road plates.
2. Plastic yellow caution tape hung 3' above the deck from temporary posts.

All costs for delineating, maintaining, and removing the limits of Restricted Construction Load Areas, for roadway plates and the skid steer loader shall be incidental to Item 114.4, "Removal of Metal Plank Bridge Deck".

Construction activity inside the Restricted Construction Load Areas shall be limited to manpower and hand-operated tools. The Contractor shall make a reasonable effort to limit placement of workers to positions directly over stringers and floorbeams to the greatest extent possible. The contractor shall be responsible for reviewing the deck and stringer deterioration conditions referenced in the available inspection/rating reports and determining a procedure for safely removing the bridge decking/asphalt from structurally deficient locations as part of their means and methods.

DEMOLITION PLAN

The Contractor shall submit a Demolition Plan to the Engineer for approval prior to beginning demolition or repair activities on the bridge. Any deviations from the approved Demolition Plan by the Contractor shall be submitted to the Engineer for approval.

The submittal shall include the following:

1. Sequence of Demolition and Repair Work: Include the staged sequence of work necessary to perform all truss repairs, install/remove temporary protective shielding, place/remove temporary road plates, metal railing/guardrail removal, pavement removal, metal deck removal, stringer removal/replacement, floorbeam and stringer (if applicable) temporary shoring, temporary and permanent floorbeam U-bolt hanger replacement, floorbeam repair/replacement, bottom lateral bracing removal/replacement, gas pipe temporary support, new deck installation and installing the new timber bridge railing.

2. Skid Steer Style Loader Information (If Applicable): Provide specifications of the Contractor's proposed skid-steer style loader including operating weight, rated operating capacity (ROC), maximum loaded tired reactions, axle spacing, and gauge distance.

3. Restricted Construction Load Areas: Provide details or a general description of how the staged work will be completed while satisfying the requirements of the Restricted Construction Load Areas as shown on the Contract Plans.

4. Temporary Road Plates: Provide limits of road plates, plate material, unit weight, total weight per plate, plate thickness, plan dimensions, and method of placing the plates without exceeding the skid-steer tire reaction limitations or driving over sections of un-plated existing decking.

5. New Decking Protection: Provide description of method used to protect the new IPE decking from the skid steer loader or all other construction activity as applicable.

6. Load Restriction Understanding: Provide a statement of understanding that no construction vehicles, heavy equipment, material stockpiles, or accumulation of debris in the temporary protective shielding shall be allowed on the bridge at any time.

7. Gas Pipe Temporary Support: Provide details and calculations for temporarily supporting the existing assumed active gas pipe as necessary to complete the proposed floorbeam repairs. Details and calculations shall be stamped by a Professional Engineer registered in the Commonwealth of Massachusetts.

8. Overhead Aerial Utility Clearance: Provide a detail showing minimum legal clearances between the overhead electrical utilities and the Contractor's proposed construction equipment, if applicable. Alternatively, the Contractor may provide confirmation from the utility owner that the aerial lines have been de-energized.

All costs for developing or revising the Demolition Plan shall be incidental to the various bid items with no separate payment made

GENERAL REQUIREMENTS FOR DEMOLITION AND WORK INVOLVING PAINTED STEEL

Demolition and work involving painted steel shall conform to the requirements of Section 961 of the Standard Specifications dated 2023.

Work Involving Painted Steel

Hazardous materials shall be removed in the immediate area of any intended welding, heating, saw

cutting or burning of steel.

The contractor shall assume that the coatings on the steel contain lead (Pb), unless otherwise determined by testing. The contractor shall certify in writing to the Engineer the results of all testing.

Implement and maintain programs and procedures, which comply with the requirements of this specification and all applicable standards and regulations. Comply with all applicable regulations even if the regulation is not specifically referenced herein. If a state or local regulation is more restrictive than the regulation of this specification, follow the more restrictive requirements.

This requirement is intended only for the demolition and preparation prior to repair and does not include provisions for recoating of steel.

Environmental

All applicable portions of Sections 961.65 "Worker Protection" and 961.66 "Environmental Protection and Monitoring" shall be followed when performing this work.

Hazardous material shall be collected during the disassembly and disposed of as outlined in Section 961.68 "Handling of Hazardous Waste and Reporting Release Programs".

The applicable submittals shall be according to Section 961.69 "Submittals".

Cleaning/Removal

Cutting Or Burning Of Steel

All surfaces to be welded, heated, saw cut or burned shall be cleaned so as to remove all contaminants and/or hazardous materials, which could be discharged to the environment as a function of the subsequent operations.

Lead paint shall be removed in its entirety in an area prescribed by a 6 inch (15 cm) minimum offset from the required work. The paint removal operation may be dry abrasive blasting, wet abrasive blasting or chemical stripping.

Proper level of containment shall be used when performing this work in accordance with Section 961.67 "Containment". Full containment is not required during chemical stripping operation however; the Contractor shall install proper shielding and/or tarpaulins under the chemical stripping operations in order to catch all debris generated during this procedure. A cleaned area must be inspected and approved before the demolition operations are started.

During cleaning operations the Contractor shall be required to furnish and erect temporary floodlights illuminating the steel surface at a minimum of 30-foot candles. This lighting shall be used in areas where there is insufficient lighting for proper cleaning operations and inspection. The Contractor shall supply electrical power.

The Contractor shall provide support for interim and final inspection of the bridge during cleaning operations. This support shall include the necessary traffic controls and safe access to the work.

Mechanical Disassembly Of Steel

All surfaces to be mechanically disassembled by shear cutting or removing bolts or rivets shall not require de-leading. When shear cutting or removing bolts or rivets, the Contractor shall not use any method that will cause dust and/or particles to be emitted and/or dispersed into the environment to an extent that would expose the workers above the Action Levels of 30µg/m3.

For purposes of limiting the lead (Pb) dust, the Contractor will be required to dampen the lead paint work areas.

The contractor shall install a proper shielding and/or tarpaulins under all lead-paint-coated surfaces to be shear cut or bolts or rivets ordered removed in order to catch any loose lead paint chips, dust or particles.

PIGEON WASTE

The Contractor shall remove and dispose of the pigeon waste and any other debris accumulated on the steel members and bridge seats in areas where work is being performed. Pigeon waste and debris material contaminants will require special handling and disposal in accordance with all Federal, state, and local requirements. No separate payment will be made for removal and disposal of pigeon waste. Cost shall be incidental to the contract pay items.

ITEM SPECIFICATIONS

ITEM SPECIFICATIONS

Reference is made to the Massachusetts Department of Transportation Standard Specifications for Highways and Bridges, 2023 edition, as amended, and the following:

ITEM 101.2 REMOVE DEBRIS FROM ABUTMENT SEATS LUMP SUM

The Contractor is alerted that an accumulation of spilled bituminous material is deposited at the West Abutment seat which requires removal and disposal in accordance with this special provision.

All contaminated surfaces to be cleaned shall be cleaned to remove all oil, grease, dirt, salt, and bird guano.

The Contractor shall lay out areas to be cleaned, limiting his activities to one location and confine this operation only to a point where the work can be completed within the same shift.

NOTE: Lead paint and pigeon waste are considered hazardous waste materials. This type of material shall be disposed of in accordance with all Federal, State, and Local environmental requirements and in accordance with the Subsection 961 – "MAINTENANCE PAINTING OF STEEL BRIDGES" of the MassDOT Standard Specification for Highway and Bridges.

Cleaning Bridge Seats at Abutments:

The horizontal surfaces of the abutments shall be cleaned of all debris, which may include but are not limited to, sand, gravel, lead paint chips, bituminous material, and guano. These materials shall be removed and disposed of away from the job site. When the bridge is over water, the Contractor shall take all precautions necessary so as not to have any guano or other debris fall into the water below.

After the debris has been removed the Contractor shall pressure wash the horizontal surfaces of the abutments in accordance with these special provisions. Cleaning of the superstructure surfaces shall be so programmed that dust and other contaminants from the cleaning process will not contaminate, newly cleaned surfaces.

Methods of Cleaning:

Cleaning operations shall be accomplished by hand scrapers, shovels, and pressure washing in accordance with these special provisions. Deposits of spilled bituminous materials shall be broken up using hand tools (picks, wedges, sledge hammers etc.) The use of jackhammers or other vibratory powered tools shall not be permitted.

All dirt, oil, grease, tar, road salt, guano or other foreign material which has accumulated on surfaces shall be removed with a pressure washing equipment, which shall be the final phase of cleaning. Containment during pressure washing operations shall also include use of a micro-net

type filter to screen all debris which is washed from the structure.

The Contractor shall be solely responsible for damages arising from the pressure washing operations.

The Contractor shall use a non-phosphate, environmentally friendly detergent that will clean the surfaces in a satisfactory manner.

Once pressure washing work is underway, the Contractor shall change or adjust the compound or percentage of each to attain a clean surface properly prepared, without damage to any sound paint. The Contractor shall be responsible for proper cleaning procedures, with the following serving only as a guideline to consider:

The operator should hold the face of the nozzle within six (6) inches of all surfaces and tilt it slightly in the direction of travel. The surface should first be wetted to allow the cleaning compound to loosen foreign matter which is later removed by a cleaning pass. The time interval between wetting and cleaning should be regulated according to the degree of dirt accumulations, but usually it is sufficient to go twice over an area that is conveniently reached from one position. The speed of pass over an area is comparable to that used in spray painting.

A properly cleaned surface will feel firm and somewhat tacky, but it should not be slick or grimy to the touch. In 90% of the cases, the areas that are properly cleaned can be verified by sight.

Excessive deposits of cleaning liquids remaining on surfaces that will not drain shall be flushed off with clean, fresh water without detergent. In as much as a certain amount of liquid will remain on horizontal surfaces after cleaning, the cleaning program should be followed through from top to bottom systematically. The last pass on any surface should be made with clean fresh water without detergent to remove surplus solution.

BASIS OF PAYMENT

Item 101.2, Removing Debris From Abutment Seats will be paid for at the respective Contract unit prices per Lump Sum, which price shall be full compensation for all labor, materials, equipment, containment of debris, lighting of work areas, legal disposal of all waste and all other incidentals required to complete the work as required by the Engineer.

The cleaning of superstructure and substructure elements located directly above the beam seat being cleaned shall be considered incidental to Item 101.2.

ITEM 107.855 PRESSURE INJECTION OF CRACKS EACH

This item shall be used in all locations where pressure injection of cracks is noted on the plans.

Work to be done under this Item shall conform to the relevant provisions of Subsection 901 of the standard specifications and shall consist of applying a concrete protective coating to the locations directed by the Engineer and indicated on the plans.

These repairs will be coated in accordance with:

Surface preparation of surfaces to be painted shall be in accordance with manufacturers recommendations utilizing SSPC-SP 13/NACE No. 6 guidelines.

At a minimum: The Contractor shall pressure wash all concrete surfaces to be painted. Pressure washing shall remove all loose, flaking, peeling and non-adherent coating. Surface cleanliness and adhesion of the prepared surface shall be determined and approved by the Engineer prior to the application of the coating system. Coating shall not be applied until surface is dry.

Portable pressure washing equipment shall be operated at a minimum of 3000 psi, a water temperature of 200 degrees F and a minimum consumption of six gallons per minute shall be used to clean all surfaces to be coated. Pressure washers shall be equipped with gauges to ascertain operating pressure and temperature.

Incidental to Item 964.21 is a zinc-rich primer which shall be applied to all exposed reinforcing steel prior to application of the protective coating.

Material to be used shall be an acrylic emulsion system such as the following or an approved equal; however, no materials shall be ordered or used until approved by the Engineer:

- Tnemec: 151-1051 Elasto-Grip FC Primer, and two coats of Enviro-Crete 156 for finish coats.
- Sherwin Williams: Loxon A 24-100 primer and two coats of DTM Acrylic Coating for finish coats.
- Sikagard 552W Primer and Sikagard 550W finish coats (two coats).

All coating material shall be applied as per the manufacturer's current data sheet.

METHOD OF MEASUREMENT

Item 107.855, Pressure Injection of Cracks will be measured for payment by the EACH of crack stringer grout pad repairs complete in place and accepted by the Engineer.

BASIS OF PAYMENT

Item 107.855, Pressure Injection of Cracks will be measured and paid at the Contract unit price per EACH of stringer grout pad crack repairs complete in place. The Contract price shall include all labor, tools, equipment, and incidental costs required to complete the work as required by the Engineer.

ITEM 114.4 REMOVAL OF METAL PLANK BRIDGE DECK SQUARE YARD

The work under this Item shall conform to the applicable provisions of Section 112 of the Standard Specifications and the specific requirements stipulated below.

Work shall consist of the removal and disposal of the existing metal plank bridge deck on the Hotel Bridge, Located on Old Shepherd Road over the Mill River in Northampton. It is intended that the asphalt surface material (paid for under Item 129.2) be either removed prior to the removal of the metal planks or simultaneously with small cut sections of metal planks not exceeding the Rated Operating Capacity (ROC) of the approved skid-steer style loader. Metal planks shall be removed in sections by means of hand labor and hand-operated power tools. Metal planks shall be prohibited from being stockpiled on the bridge. Metal plank stockpiles shall be transported off site.

This work shall include furnishing, placing and removing temporary decking (metal road plates or other) over deteriorated sections of the existing decking as required to facilitate removal of the existing metal plank decking, asphalt, and floor system repairs.

DESCRIPTION

The work includes furnishing all labor and materials necessary to perform the removal of the existing metal bridge deck as shown on the Contract Drawings or as directed by the Engineer. Except as specified, all material and debris shall become the property of the Contractor, and shall be recycled, re-used or disposed of in accordance with all applicable local, state and federal requirements.

The City makes no assurances regarding the presented conditions, dimensions, and materials of the existing structure as shown on the Contract Drawings. The Contractor shall verify all existing conditions and construction features of the bridge elements to be removed, as necessary, for the proper planning and completion of the work. The Contractor shall base its bid on his/her own findings without any additional compensation for variances from the Contract Plans or these Special Provisions regarding actual conditions for the items to be removed.

The Contractor shall be solely responsible for maintaining the stability of the existing structure at all times during the demolition operation. The Contractor shall prepare and submit a plan indicating its proposed demolition procedures and methods to be used including equipment, tools, devices, schedule of operations, methods of utility protection, shielding design, disposal location, traffic management procedures, etc., to the Engineer for approval. The demolition procedures and any necessary calculations and drawings shall be stamped by a Professional Engineer registered in the Commonwealth of Massachusetts, certifying that all existing framing and truss members are suitably braced and supported throughout the demolition process.

The Contractor’s demolition method shall take into consideration any utilities and drainage structures near the bridge. Work under this item may not commence until the Engineer has given written approval.

Debris from construction must be carefully contained within the work zones and prevented from

falling into the adjacent travel-ways, or the Mill River below. Contractor shall be responsible for dust control as a result of the demolition operations.

Contractor shall take care not to damage the bridge structure to remain. The Contractor shall use methods that will limit disturbance to the stringer web and connection plates. The Contractor may utilize power and hand tools to perform the work, if damage to all bridge elements to remain is prevented.

The Contractor shall take care not to damage any newly constructed bridge elements as well. Any damages to the existing portions, or new portions, of the structure shall be repaired by the Contractor to the satisfaction of the Engineer and at the Contractor's expense.

COMPENSATION

Item 114.4, Removal of Metal Bridge Plank Deck, shall be measured and paid for at the contract unit price per square yard, regardless of depth, which price shall include all labor, materials, equipment, transportation, temporary decking and incidental costs necessary to complete the work to the satisfaction of the Engineer.

Asphalt removal shall be paid for under Item 129.2, Old Pavement Excavation.

All shielding required to perform this work shall be paid under Item 994.01, "Temporary Protective Shielding".

Demolition plan submittal, stockpiling, transportation, and disposal of metal pans shall be considered incidental to this Item.

ITEM 129.2 OLD PAVEMENT EXCAVATION SQUARE YARD

The work to be done under this item shall conform to the relevant provisions of Section 120 and the following:

Work shall consist of the removal and disposal of the existing asphalt pavement on the Hotel Bridge superstructure, located on Old Shepherd Road in Northampton, as shown on the Contract Plans. Asphalt shall be removed by means of hand labor, hand operated tools and then transported off site by means of an approved skid-steer loader (if applicable). It is intended that the entire depth of asphalt be removed down to the metal bridge planks. The depth of the existing pavement is unknown. The Contractor shall perform an independent investigation to determine the depth and procedures necessary for pavement removal. Investigation to be performed prior to bidding and bid to include full pavement removal.

The Contractor may elect to remove steel plank decking with pavement attached. If the demolition plan submitted under 114.4 demonstrates this method can be accomplished without damage to the bridge components to remain and without vehicles on the bridge except for the approved skid-steer style loader, it will be considered acceptable. However, payment will still be made to this item and 114.4 in accordance with the Compensation section of each Item.

Payment for asphalt excavation above the abutment backwall and at approaches shall be incidental to Item 955.1, Timber (IPE) Decking.

DESCRIPTION

The work includes furnishing all labor and materials necessary to perform the removal of the existing asphalt on the bridge as shown on the Contract Drawings or as directed by the Engineer. Except as specified, all material and debris shall become the property of the Contractor, and shall be recycled, re-used or disposed of in accordance with all applicable local, state and federal requirements.

The City makes no assurances regarding the presented conditions, dimensions, and materials of the existing structure as shown on the Contract Drawings. The Contractor shall verify all existing conditions and construction features of the bridge elements to be removed, as necessary, for the proper planning and completion of the work. The Contractor shall base the bid on his/her own findings without any additional compensation for variances from the Contract Plans or these Special Provisions regarding actual conditions for the items to be removed.

The Contractor shall be solely responsible for maintaining the stability of the existing structure at all times during the demolition operation. The Contractor shall prepare and submit a plan indicating its proposed demolition procedures and methods to be used including equipment, tools, devices, schedule of operations, methods of utility protection, shielding design, shoring design, disposal location, traffic management procedures, etc., to the Engineer for approval. The demolition procedures and any necessary calculations and drawings shall be stamped by a Professional Engineer registered in the Commonwealth of Massachusetts, certifying that all existing framing and truss members are suitably braced and supported throughout the demolition process.

Debris from construction must be carefully contained within the work zones and prevented from falling into the adjacent travel-ways, or the Mill River below. Contractor shall be responsible for dust control as a result of the demolition operations.

Contractor shall take care not to damage the bridge structure to remain. The Contractor shall use methods that will limit disturbance to the stringer web and connection plates. The Contractor shall utilize hand tools, powered saws and small chipping hammers (30# or less) to perform the work. Use of heavy equipment is prohibited except the approved skid-steer style loader.

COMPENSATION

Item 129.2, Old Pavement Excavation, shall be measured and paid for at the contract unit price per square yard, regardless of depth, which price shall include all labor, materials, equipment, transportation and incidental costs necessary to complete the work to the satisfaction of the Engineer.

Saw cutting at ends of bridge deck shall be paid for under Item 482.3. All other sawcuts made in pavement as part of demolition activities shall be considered incidental to this item.

All shielding required to perform this work shall be paid under Item 994.01, “Temporary Protective Shielding”.

Transportation of asphalt off site and disposal shall be considered incidental to Item 129.2.

ITEM 630.2 HIGHWAY GUARD REMOVED AND DISCARDED FOOT

The work under this item shall conform to the relevant provisions of Section 630 of the Standard Specifications and the following:

DESCRIPTION

The work shall consist of removing highway guard on the bridge and at approaches as indicated on the Contract Plans or as directed by the Engineer. The removal shall include all guardrail-to-truss connection brackets/hardware if applicable to avoid conflict with the proposed timber railing. The Contractor shall legally dispose of the existing materials at an off-site location. Removal and disposal of the existing miscellaneous steel and chain link fence closing the bridge at each end of the bridge is considered incidental to this item.

COMPENSATION

Highway guard removed and discarded will be measured for payment by the foot along the length actually removed including rails, posts, bridge connections/brackets if applicable, and concrete foundations as directed. Measurement for this item shall occur prior to removing any highway guard.

Highway guard removed and discarded will be paid for at the Contract unit price per foot, which price shall include all labor, materials, equipment and incidental costs required to complete the work.

All shielding required to perform this work shall be paid under Item 994.01, “Temporary Protective Shielding”.

ITEM 655.01 TIMBER RAIL FENCE FOOT
ITEM 655.02 TIMBER RAIL FENCE ON BRIDGE FOOT

The work under these items shall conform to the relevant provisions of Section 955 of the Standard Specifications and include the fabrication and installation of timber rail fence and timber rail fence on bridge, where shown on the Contract Plans, as directed by the Engineer and as follows:

MATERIALS

Materials shall meet the requirements specified in the following Subsection of Division III, Materials and the following:

Gravel Borrow	M1.03.0 – Type b
Wooden Rails and Posts	M9.05.1
Timber Preservatives	M9.05.5

Galvanized connections, bolts, washers and nuts shall conform to AASHTO M 232.

Connection angles at post base on bridge shall be galvanized according to AASHTO M 111.

The materials used for the Construction of the Timber Rail Fence on Bridge shall be, at a minimum: Southern Yellow Pine Select Structural for the railings and the posts. Alternate materials to be approved by the Engineer prior to purchase of material.

CONSTRUCTION

Two (2) bolts shall be used per each rail to post connection except at rail splices where four (4) bolts shall be used (2 per rail) Butt joints shall be used for all rail splices.

All connections, screws, bolts, anchors, nuts and washers shall be galvanized and are considered incidental to this Item.

All posts and rails shall be ACQ treated. Posts shall have a preservative retention level of 0.60 and rails shall have a minimum preservative retention level of 0.40.

Timber Rail Fence Fabrication and Erection

All posts for timber rail fence (beyond the limits of the bridge) shall be machine driven provided that posts are not damaged in the process. If a post cannot be machine driven, it shall be set plumb in mechanically excavated or cored holes and secured in gravel borrow footings according to the Contract Plans. Posts shall be spaced as shown on the Contract Plans. In setting the posts, precautions shall be taken to ensure proper offset, alignment and leveling to prevent bending or twisting of the rail.

Where fence begins or ends at a flare, the flared section shall be included in the measurement of the applicable fence type.

Timber rail fence shall be used at the proposed bridge on Old Shephard Road over Mill River. Posts for Timber Rail Fence on Bridge shall be set plumb and placed flat on the proposed timber bridge deck. Posts shall extend securely from the top of the deck to the required height. Posts shall be spaced as shown on the Contract Plans. In setting the posts, precautions shall be taken to ensure proper offset, alignment and leveling to prevent bending or twisting of the rail.

The Contractor shall verify timber post locations at the approaches are not in conflict with the buried existing abutment concrete backwalls prior to preparing shop drawings.

An existing 4" diameter gas line is present at the south fascia of the bridge. The contractor shall be responsible for ensuring approach timber railing posts driven off the bridge do not hit this existing utility to remain.

A minimum of two (2) galvanized 5/8" diameter anchors (one on each side) shall be used per each post connection on top of the bridge deck.

A minimum of one (1) galvanized steel square U-bolt with an EPDM rubber insulation sleeve and timber shims shall be installed at each interior vertical truss chord as shown on the Contract Plans. EPDM Insulation sleeves shall be resistant to UV light and suitable for outdoor usage. The Contractor may propose alternative insulation sleeve materials to the Engineer for approval.

SUBMITTALS

Contractor shall submit to the Engineer for approval shop drawings of the timber rail fence Items including materials, locations, hardware, and connection details.

COMPENSATION

Timber Rail Fence and Timber Rail Fence on Bridge will be measured for payment by the foot, complete in place. When there is a transition section between the two types of fences, the transition section shall be measured as part of the timber rail fence.

Timber Rail Fence and Timber Rail Fence on Bridge will be paid for at the respective Contract unit prices per Foot, which price shall include all labor, materials, equipment and incidental costs required to complete the work. No separate payment will be made for the gravel borrow, wooden rail and posts, wooden shims, threaded U-bolts with EPDM insulation sleeves, timber preservatives for post buried ends and all required hardware and connection plates, but all costs in connection therewith shall be included in the Contract unit price bid.

The cost of locating the buried existing abutment backwalls is incidental to Item 955.1, "Timber (IPE) decking".

All shielding required to perform this work shall be paid under Item 994.01, "Temporary Protective Shielding".

ITEM 657. TEMPORARY FENCE FOOT

The work under this item shall conform to the relevant provisions of Section 644 of the Standard Specifications and the following:

DESCRIPTION

The fencing or, when mounted in conjunction with temporary concrete barrier, the combination of fencing and barrier, shall have a minimum height of 72 inches. The fencing shall securely close off the construction work areas to pedestrians.

The Contractor shall provide the Engineer with acceptable methods for the installation of the temporary fence.

All posts, including end, corner and intermediate brace posts, and all gates and gate posts, shall be incidental to work under this item. The materials need not be new and shall be in a condition suitable for the intended purpose. All materials shall meet the Engineer's approval.

The Contractor shall be responsible for the maintenance of the fencing and for ensuring that the work area remains secure and inaccessible to the general public at all times. All such maintenance shall be incidental. Any minor or short-term removing and resetting of temporary fence by the Contractor to perform construction operations shall be done at no additional cost to the City.

Temporary fence shall not be removed until the construction is completed or until directed by the Engineer. When the temporary fencing initially provided under this item is required to be removed and reset, that removal and resetting shall be considered incidental to the cost of this item. Final removal of temporary fencing from the project shall also be considered incidental to this item.

After all other construction activities are complete, temporary fencing shall be removed and disposed offsite by the Contractor at no additional cost.

COMPENSATION

Temporary fence will be measured for payment by the foot, complete in place.

Temporary fence will be paid for at the Contract unit price per foot, which price shall include all labor, materials, equipment and incidental costs required to complete the work. No separate payment will be made for gates, end, corner and intermediate posts and foundations, and removal and resetting of same, but all costs in connection therewith shall be included in the Contract unit price bid.

ITEM 669. FENCE REMOVED AND STACKED FOOT

The work under this item shall conform to the relevant provisions of Sections 630 and 665 of the Standard Specifications and the following:

Work shall consist of the removal and stacking of the existing ornamental metal handrail on the Hotel Bridge, Located on Old Shepherd Road over the Mill River in Northampton. It is intended that the railing be removed carefully such that no damage is done and stacked at 254 Old Wilson Road, Northampton, MA (former Pine Grove Golf Course). It is anticipated that individual railing sections are approximately 14' in length. Metal railing shall be removed in sections by means of hand labor and hand operated tools.

DESCRIPTION

The work includes furnishing all labor and materials necessary to perform the removal of the existing metal handrail as shown on the Contract Drawings or as directed by the Engineer. The removal shall include all metal handrail-to-truss connection brackets to avoid conflict with the proposed timber railing. Except as specified, all remaining material and debris shall become the property of the Contractor, and shall be recycled, reused or disposed of in accordance with all applicable local, state and federal requirements.

The City makes no assurances regarding the presented conditions, dimensions, and materials of the existing structure as shown on the Contract Drawings. The Contractor shall verify all existing conditions and construction features of the bridge elements to be removed, as necessary, for the proper planning and completion of the work. The Contractor shall base its bid on his/her own findings without any additional compensation for variances from the Contract Plans or these Special Provisions regarding actual conditions for the items to be removed.

Debris from construction must be carefully contained within the work zones and prevented from falling into the adjacent travel-ways, or the Mill River below.

Contractor shall take care not to damage the bridge structure to remain and shall use methods that will limit disturbance to existing bridge structure or newly constructed bridge elements. The Contractor shall utilize only handheld power or hand tools to perform the work. Any damages to the existing portions, or new portions, of the structure shall be repaired by the Contractor to the satisfaction of the Engineer and at the Contractor's expense.

COMPENSATION

Fence Removed and Stacked will be measured for payment by the foot along the length actually removed including ornamental railing sections, metal handrail-to-truss connection brackets and posts as directed. Measurement for this item shall occur prior to removing any railings.

Fence Removed and Stacked will be paid for at the Contract unit price per foot, which price shall include all labor, materials, equipment and incidental costs required to complete the work.

ITEM 707.8. STEEL BOLLARDS EACH

The work to be performed under this item consists of furnishing and installing bollards in a concrete base at the location indicated on the Contract Plans and shall conform to the following:

The bollard shall conform to the dimensions and details shown in the detail sheet and shall be installed at the locations indicated on the Contract Plans. The installation will require the excavation of 1 – 24 inch diameter hole per bollard, compacting the subgrade, and embedding the bollard in concrete. The concrete foundation shall be considered incidental to this item.

Bollard shall be Model No. 2190, as manufactured by Columbia Cascade Company, Inc., 1975 SW 5th Avenue, Portland, Oregon, 97201-5293, or approved equivalent.

Bollard height shall be 3' – 0" above finish grade of pavement.

Steel pipe shall be ASTM schedule 40 with a 6" nominal diameter.

Top of Bollard post shall be a permanently double mono-bolted in place set aluminum hemi-dome end cap.

Bollard shall be coated, after complete fabrication, with CASPAX-7, a colored polyester coating applied to a minimum thickness of six mils. Color and sample shall be provided and approved by the Engineer. Liquid, epoxy or lead-containing powder coatings are not acceptable. Preparation of the steel substrate shall incorporate the phosphate system. Substrate preparation shall consist first of mechanical cleaning to remove heavy mill scale, varnish, rust and grease; followed by chemical cleaning per TT-C-49OC, Type II. The color coating shall be applied by the electrostatic method and then by oven cured at 400°F to chemically bond the coating to the metal substrate. CASPAX-7 color number and shall be black in color.

Bollard shall permit embedment in concrete to a minimum depth of 24 inches below finish grade.

Install bollard as per the detail and in accordance with all relevant sections of the Standard Specifications.

COMPENSATION

Payment for work under this item shall be at the contract unit price per each, complete and in place, which shall be full compensation for equipment for, labor, materials, and incidentals, necessary to complete this work in a satisfactory manner.

ITEM 874.4 TRAFFIC SIGN REMOVED AND STACKED EACH

Work under this Section shall conform to the applicable provisions of Section 828 of the Standard Specifications and the following:

GENERAL

The work shall consist of removing existing regulatory, warning and directional signs and supports not required for reuse on this project and stacking the signs at a protected location on site for removal by the Town.

Existing signs that require removal are labeled as such on the Contract Plans.

CONSTRUCTION METHODS

Signs and attached hardware shall be carefully removed from their supports. The supports and existing foundations shall be removed to a depth of at least 6" below the existing ground and the holes backfilled with gravel. The surface shall be patched with a material to match the existing ground or as directed by the Engineer.

If signs are attached to existing light poles, utility poles or traffic poles, only the sign and attached hardware shall be removed and stacked.

The signs shall be stacked in a temporary stockpile prior to transporting. The Contractor shall be responsible for the signs until removed by the City.

A certified notice (with a copy sent to the Engineer) shall be sent to the Town advising that it is available for removal. The Contractor's responsibility shall cease upon final acceptance of the work or 60 days from the time the certified notice is sent to the Town.

Signs lost, damaged or otherwise made unsuitable for reuse during removal, transportation or storage, through lack of protection or carelessness on the part of the Contractor, shall be replaced by the Contractor at his own expense.

If the Engineer determines that any part of the stacked material is unsuitable for reuse, or if other owners decide to abandon part or all of such materials, said materials shall become the property of the Contractor, and the Contractor shall dispose of them away from the site. Compensation for the removal and disposal of unsuitable or abandoned materials shall be included under the respective remove and stack item.

COMPENSATION

Traffic sign removed and stacked will be measured for payment by the each.

Traffic sign removed and stacked will be paid for at the Contract unit price per each, which price shall include all labor, materials, equipment and incidental costs required to complete the work.

No separate payment will be made for dismantling, loading, transporting and stacking of the signs and supports as designated above, the excavation and disposal of the existing foundation and the supplying and placing of compacted gravel backfill where foundations and posts are removed, and the patching of the existing surface, but all costs in connection therewith shall be included in the Contract unit price bid.

Signs determined not to be acceptable by the Engineer shall become the property of the Contractor to dispose of off the site at no additional cost.

ITEM 950.1 TEMPORARY SHORING LUMP SUM

Work under this item shall be in accordance with Section 961, and described as follows:

The work shall consist of designing, installing and removing temporary shoring systems necessary for the following repairs:

1. Shore floorbeams to facilitate floorbeam U-bolt hanger replacements.
2. Shore existing stringers (to remain in final condition) where the underlying floorbeam is being replaced. Alternatively, the Contractor may temporarily remove and re-install existing stringers to complete floorbeam replacement.

DESCRIPTION

Floorbeams shored from the truss using steel cables similar to the existing steel cable shoring in-place at Floorbeam 7 is an acceptable shoring method. The Contractor is alerted that no calculation records of the existing steel cable shoring design were located during the design phase. The Contractor shall not assume this existing cable size is structurally adequate for duplication at other floorbeam shoring locations. Alternative shoring methods submitted for approval will be considered.

Shoring of stringers at floorbeam replacement locations may be avoided by temporarily removing and re-installing stringers. For the case of shoring stringers from the bridge, the Contractor shall be required to provide calculations demonstrating that all effected members are not overstressed. For the case that stringers are shored from the river, the Contractor shall be responsible for acquiring applicable permits from the City of Northampton Conservation Commission.

Temporary Shoring shall be designed and supplied by the Contractor. Shoring locations shall be at the Contractor's discretion and carefully placed to minimize disturbances to the surrounding area and waterway below the bridge.

The Contractor shall be solely responsible for maintaining the stability of the existing structure at all times during the installation and removal of the temporary shoring and throughout construction. The design of the temporary shoring shall be adequate for all loads applied to the systems for the duration of construction until the repairs are made, or new members are installed. Loads acting on the systems include, but are not limited to dead loads, and construction live loads which includes manpower, equipment, temporary protective shielding and road plates (if applicable).

The Contractor shall prepare and submit a plan indicating its proposed temporary shoring systems, relevant calculations, installation and removal procedures and methods to be used including equipment, tools, devices, schedule of operations, methods of utility protection, etc. to the Engineer for approval. Shoring calculations shall be prepared using the Allowable Stress Method and in accordance with the AASHTO Manual for Bridge Evaluation. All temporary shoring systems, calculations and detailed drawings shall be stamped by a Professional Engineer registered in the Commonwealth of Massachusetts, certifying that all existing framing and truss members are suitably braced and supported throughout the relevant member replacement procedures.

The Construction Live Loads will be based upon the Contractor's chosen method of work and included in the applicable Contractor's submittals. The Contractor shall make reasonable efforts to limit their construction and equipment loads to the existing truss. The skid-steer loader shall not be permitted to travel over stringers or floorbeams that are temporarily shored. Temporary Shoring systems supported by the truss shall not produce combined reactions at the truss bottom chord panel points that exceed final condition dead load reactions with an 85 psf pedestrian live load.

If the Contractor's operations damage any existing portions of the bridge designated to be retained in the proposed construction, such damage shall be repaired at the Contractor's expense, to the satisfaction of the Engineer and the City.

All materials used in the temporary bridge support system shall become the property of the Contractor and shall be removed from the site at the completion of the project.

COMPENSATION

Item 950.1, Temporary Shoring, shall be measured and paid for at the contract unit price per lump sum, which price shall include all labor, materials, equipment, transportation and incidental costs necessary to complete the work to the satisfaction of the Engineer.

All shielding required to perform this work shall be paid under Item 994.01, "Temporary Protective Shielding".

Temporary removal and re-installation of stringers to accommodate floorbeam replacement shall be considered incidental to Item 960.02, "Structural Steel-Floorbeam Repair/Replacements" with no separate payment made.

ITEM 955.1 TIMBER (IPE) DECKING FOOT

The work under these items shall include the fabrication and installation of the timber (IPE) decking shown on the Contract Plans, waterproofing membrane, backwall modifications to support skewed decking, deck joint cover plates, and minor modifications to the existing asphalt approaches, as directed by the Engineer and as follows:

MATERIALS

Materials shall meet the requirements specified in the following Subsection of Division III, Materials and the following:

Timber Deck Boards M9.05.1

Galvanized connections, bolts, washers and nuts shall be considered incidental to this item and conform to AASHTO M 164 and AASHTO M 232.

Steel connection plates shall be considered incidental to this item and conform to AASHTO M 270 Grade 50 (galvanized) steel.

Waterproofing Membrane shall be "Deck Flash Barrier" by Confair products or approved equal.

DESCRIPTION

Timber deck boards shall meet the dimension requirements outlined and be located within the limits shown on the Contract Plans and be comprised of IPE timber material.

The timber deck shall be connected to the top flange of the stringers as per detail shown on the Contract Plans and described here within: Two (2) rows of bolts spaced approximately 7-3/8" apart shall be used at each deck board stringer location, and staggered 4" along the length of the stringer as shown on the Contract Plans. The deck to beam connection detailed on the Contract Plans and outlined in this section is schematic. The contractor may provide alternative methods of connection to the Engineer for approval. No holes will be allowed in the top of the existing steel beams as part of the Contractor's proposed connection method. A 6" wide layer of waterproofing membrane shall be applied to the top surface of all stringer top flanges and the top surface of the steel connection plates.

Care shall be taken so that all deck boards be set level transversely, parallel to one another and plumb along the length of the bridge according to the Contract Plans.

The Contractor shall install steel support angles at the existing abutment backwalls to support the skewed ends of the timber decking.

The End of Deck Details shown in the Contract Plans are schematic only. The Contractor shall develop their own End of Deck Details to provide a smooth transition from the approach to the new decking. The Contractor's End of Deck Details shall be submitted to the Engineer for approval.

The Contractor is alerted that the proposed decking is thinner than the new decking. The existing abutment backwall is covered by asphalt and the rear and top faces of backwall could not be located during the design phase. The Contractor shall be responsible for removing the existing asphalt over the backwall as required to locate the backwall and modify the existing approach grading. Asphalt transition and cover plate grades shall not exceed 5%. The Contractor shall be prohibited from partially demolishing any part of the existing concrete backwall.

All connections, screws, bolts, anchors, nuts and washers shall be galvanized and are considered incidental to this Item.

SUBMITTALS

The Contractor shall submit to the Engineer for approval shop drawings and manufacturer product information of the Timber (IPE) Deck Items including materials, locations, hardware, and connection details. Proposed timber IPE decking must have a minimum bending strength of 6.5 ksi and a minimum shear strength of 2.1 ksi.

End of Deck Details submitted shall include deck joint cover plates and shims (if applicable), proposed grading, hardware, limits of approach pavement excavation, new transition pavement, stringer end locations, and fixed/expansion deck joint locations. Hardware catalogue cuts and calculations shall be included which demonstrate the deck end support angle connections have sufficient capacity to resist a 90 psf pedestrian live load. Support angle connection calculations shall be stamped by a professional engineer registered in the Commonwealth of Massachusetts.

COMPENSATION

Item 955.1, Timber (IPE) Decking will be measured for payment by the Foot of deck boards on the superstructure, complete in place.

Item 955.1, Timber (IPE) Decking will be paid for at the Contract unit prices per Foot, which price shall include all labor, materials, backwall support angles, deck joint cover plates and shims, old pavement excavation at approaches, new transition asphalt at approaches, connection bolts, nuts, washers and plates, equipment and incidental costs required to complete the work.

All costs for labor, material, installation and removal for temporary protection of IPE decking shall be incidental to Item 955.1.

All shielding required to perform this work shall be paid under Item 994.01, “Temporary Protective Shielding”.

ITEM 960.011	**TURNBUCKLE FOR EYE BAR REPAIR**	**EACH**
ITEM 960.012	**¾" DIAMETER WIRE ROPE FOR EYE BAR REPAIR**	**FOOT**
ITEM 960.02	**STRUCTURAL STEEL-FLOORBEAM REPAIR/REPLACEMENT**	**EACH**
ITEM 960.03	**STRUCTURAL STEEL-STRINGER REPLACEMENTS**	**POUND**
ITEM 960.04	**STRUCTURAL STEEL-TIGHTEN TRUSS DIAGONAL CHORDS**	**EACH**
ITEM 960.05	**STRUCTURAL STEEL-U-BOLT HANGER REPLACEMENTS**	**EACH**
ITEM 960.06	**STRUCTURAL STEEL-BOTTOM LATERAL BRACING REPLACEMENTS**	**POUND**
ITEM 960.07	**STRUCTURAL STEEL-FLOORBEAM BEARING STIFFENER REPLACEMENTS**	**POUND**
ITEM 960.08	**REPLACE RIVET WITH BOLT (AS DIRECTED BY THE ENGINEER)**	**EACH**

The work under this Item shall conform to the applicable provisions of Section 960, Section 961, and Section 995, of the Standard Specifications and the specific requirements stipulated below for the component parts of these Items. For those component parts where no specific requirement is stipulated, the Standard Specifications shall apply except for payment.

Work under this Item shall include all materials, equipment, and labor needed to construct the structural steel repairs to the bottom and diagonal chords on the North and South Trusses, floorbeams, and stringers.

All bolts needed for repair are considered incidental to this item. Except where noted otherwise on the Contract Plans, bolts shall be high strength bolts conforming to AASHTO M164 and galvanized in accordance with AASHTO M232.

The work does not include any items listed separately in the proposal. Payment for materials shown on the Contract Plans as being part of this structural steel repair or which may be incidental to their construction and are not specifically included for payment under another Item shall be considered incidental to the work performed under these Items and shall be included in the unit price of the component of which they are a part.

DESCRIPTION

The work under this Item shall include a variety of different repairs of deteriorated existing wrought iron members at locations shown on the Contract Drawings.

Repair of the truss floor system includes stringer replacement, repair of stringer end-to-floorbeam connections, floorbeam replacement, floorbeam repairs consisting of installing new steel elements

with high-strength bolts such as steel plates and angles, replacement of bottom lateral bracing, replacement of floorbeam U-bolt hangers, replacing riveted connections with reamed bolted connections, and application of epoxy filler compound at various locations along the floor system as shown on the Contract Plans.

Repair of the trusses includes addition of new wire rope with new turnbuckles at various diagonal and bottom chord locations, and tightening of existing diagonal chords having existing turnbuckles at various diagonal chords, as shown on the Contract Plans or directed by the Engineer.

New steel member materials to meet the requirements for both composition and geometry shown on the Contract Plans.

Top Chord

Top Chord requires no repairs at this time and shall remain intact and undisturbed during the rehabilitation of this truss bridge.

Turnbuckle for Eye Bar Repair &
¾" Diameter Wire Rope For Eye Bar Repair

Some of the existing eye-bar truss members require repair by means of adding additional support capacity. None of the existing eye-bars shall be removed with this repair type. Only those eye-bar locations in need of additional support and as shown on the Contract Plans shall utilize the wire rope and turnbuckle repair as shown on the Contract Plans. The rope shall be slung around the two existing truss pins that support the individual eye-bar and are connected by means of a turnbuckle and tightened to avoid any slack. Wire rope size and turnbuckle working loads are listed on the Contract Plans.

Item 960.012, "¾" Diameter Wire Rope For Eye Bar Repairs" shall be measured for payment based on total length of wire comprising the loops, complete in place and excepted by the Engineer. Additional wire slack beyond wire end connections (if applicable), shall not be measured.

Structural Steel-Floorbeam Repair/Replacements

The existing floorbeams are assumed to be made of wrought iron.

This work includes removal and replacement of existing Floorbeam 7 with a new steel floorbeam as shown on the Contract Plans. The cost of removing and re-installing existing stringers to remain in the final condition to accommodate floorbeam replacement shall be considered incidental to Item 960.02, "Structural Steel-Floorbeam Repair/Replacements" with no separate payment made. Alternatively, the cost of providing temporary support for existing stringers to remain in the final condition to accommodate floorbeam replacement shall be considered incidental to Item 950.1, "Temporary Shoring" with no separate payment made.

This work also includes repairing existing floorbeams by installing bolted plates and angles at specified locations on the webs and flanges as shown on the Contract Plans. All of these bolts shall be 7/8" diameter ASTM F3125 Grade A325 high strength bolts. Gaps between proposed repair angles and existing tapered flanges shall be filled with an approved epoxy filler compound

as shown on the Contract Plans. The overhead asphalt and metal decking shall be completely removed from both adjacent bays prior to beginning floorbeam repairs.

The Contractor may alternatively elect to completely replace floorbeams instead of performing the proposed repairs for their own convenience. No separate or additional payment shall be made if the Contractor elects to replace a floorbeam instead of repairing the floorbeam.

All costs for hardware, reaming existing rivet holes, cleaning steel surfaces, epoxy filler compound, coordinating with the gas utility owner, removing and re-installing pipe support channel and roller assembly, and providing temporary support of the gas pipe shall be incidental to Item 960.02, "Structural Steel-Floorbeam Repair/Replacements" with no separate payment made.

Structural Steel-Stringer Replacements

The existing stringers (assumed to be wrought iron) are located between the floorbeams. Deteriorated stringers shall be removed and replaced as shown on the Contract Plans. This work includes removing and replacing the associated stringer end connection components with new bolted steel components, adding steel shim bearing plates and bearing insulation pads, and reaming existing rivet holes to satisfy a standard bolt hole diameter in adjoining stringers or floorbeams to remain, as required.

Temporary removal of existing stringers to remain in the final condition in order to accommodate floorbeam replacement shall be incidental to Item 960.02, "Structural Steel-Floorbeam Repair/Replacement" with no separate payment made.

Structural Steel-Tighten Truss Diagonal Chords

Loose wrought-iron diagonal truss chords (diagonal eye bars) with existing tapped hex turnbuckles are identified on the Contract Plans. The Contractor shall tighten the hex turnbuckles to reverse the looseness to the satisfaction of the Engineer while taking precautions to not induce a tension in the rod. The Contractor is alerted that the turnbuckles may be ceased. The use of penetrating oil to loosen the internal threads is recommended. The Contractor shall stabilize both diagonal rod ends at the turnbuckle to prevent the member from being damaged by twisting while the turnbuckle is turned. Heating the existing diagonal rods or turnbuckles shall not be permitted. This work shall only be performed while under the supervision of the Engineer.

Structural Steel-U-Bolt Hanger Replacements

Existing wrought-iron U-bolt hanger assemblies at floorbeam ends shall be completely replaced by the Contractor at the locations shown on the Contract Plans in order to complete the various proposed bearing stiffener repairs and replacement of Floorbeam 7. Floorbeam 7 is shored and currently missing a U-bolt hanger that requires installation of a new temporary U-bolt hanger in accordance with the Required Sequence of Repairs shown on the Contract Plans. Steel U-bolt hanger assemblies are comprised of U-bolt, threaded rods, couplers and anchorage hardware.

Only one U-bolt hanger shall be replaced at a time except for the case of a complete floorbeam replacement where hanger installation shall be determined by the Contractor's means and methods. The floorbeam undergoing a hanger replacement shall be temporarily shored properly

prior to and during all phases of hanger installation.

The Contractor must verify the existing size and exact shape of the original U-bolt hanger. The new hangers must be fabricated to match the existing hangers to ensure that they will fit into the existing structure. The Contractor must also verify the geometry at the existing pin location to ensure that there is adequate space to remove the old hangers and install the new ones while the existing structure remains in place. The Contract shall be responsible for verify there is no conflict between the U-bolt hanger replacement and installation of any associated floorbeam steel repair components.

U-bolts shall be ASTM F3125, Grade A325 high strength bolts.

Temporary support required to perform this work shall be paid for under Item 950.1, "Temporary Shoring".

Structural Steel-Bottom Lateral Bracing Replacements

Bottom lateral bracing and associated stringer bottom flange connection angles shall be removed and replaced with matching steel rods using bolted angle connections at all locations where the adjoining exterior stringers are replaced or temporarily removed. For stringers that are temporarily removed, riveted connection holes (if applicable) shall be reamed to accommodate a new bolted connection angle. Rivet removal, reaming and installation of new bolt are all incidental to this item. A new tapped hex turnbuckle shall be installed at each lateral brace to allow for adjustments in the brace length and a tight fit-up in the final condition.

Removal of bottom lateral bracing shall be limited to a single bay at a time except where a floorbeam replacement may necessitate bottom lateral bracing removal in both adjacent bays simultaneously. The Contractor shall schedule this work to avoid bottom lateral bracing being removed prior to predicted windy weather conditions. The Contractor shall take precautions to reasonably limit lateral loads from the skid-steer style loader (if applicable) while the bracing is temporarily removed. If, in the opinion of the Engineer, the Contractor's operations are resulting in excessive lateral movement of the bridge while bracing is removed, he shall be required to immediately halt the activity causing the lateral movement and change his methods of operation at no extra cost to the City.

Structural Steel-Floorbeam Bearing Stiffener Replacements

This work consists of removing and replacing the existing riveted wrought iron floorbeam bearing stiffener angles with new bolted steel angles at various locations as shown on the Contract Plans. The existing gas pipe support channels shall remain in-place and be protected at each "Typical Repair" location shown on the Contract Plans. This work includes installing a small bottom flange cover plate at Floorbeam 5 with an epoxy filler compound applied to the flange section loss to prevent a void between the flange and the new cover plate.

This work also includes removing and replacing the existing Floorbeam 4 riveted floorbeam bearing stiffener angles with new shop-welded web plate-bearing stiffener assemblies as shown on the Contract Plans. The existing gas pipe support channel shall be removed & reset with temporary support provided to the gas pipe by the Contractor. The existing riveted pipe support

channel and floorbeam web shall be reamed to receive new bolted connections.

All costs for reaming existing rivet holes, coordinating with the gas utility owner, removing and re-installing the pipe support channel and roller assembly, and providing temporary support of the gas pipe shall be incidental to Item 960.07, "Structural Steel-Floorbeam Bearing Stiffener Replacements" with no separate payment made.

Each bearing stiffener replacement location shown on the Contract Plans requires the existing beam end to be initially shored before removing the existing U-bolt hanger to provide access to the work area. The cost of providing temporary shoring shall be paid under Item 950.1, "Temporary Shoring".

Replace Rivet With Bolt (As Directed by the Engineer)

This work shall consist of replacing deteriorated rivets with bolts at locations not already covered by the other bid items. This work shall include reaming existing rivet holes to satisfy standard bolt hole diameter requirements. Engineer approval is required prior to any work being performed under this item.

CONSTRUCTION METHODS

All steel repairs shall be performed in accordance with the Sequence of Repairs and Demolition Work included in the approved Demolition Plan.

Repair locations are identified on the Contract Plans. Work shall be performed in accordance with the Drawing Details and Notes.

Prior to the commencement of any bridge repair work, existing utilities in the vicinity of the work, shall be protected as required to perform the work.

All existing floorbeam repair locations shall be brushed and cleaned of all existing rust before performing the repairs. Additionally, steel surfaces receiving epoxy filler compound shall be free of dust and loose paint.

All new structural steel shall be hot-dip galvanized.

Any cutting of existing floor system members shall be performed with care to avoid damaging or notching any of the material to remain. In the event the Contractor damages materials to remain during cutting operations, the Contractor shall replace, repair, or reinforce the damaged area as required to restore the area to existing conditions prior to damage. The work shall be performed by the Contractor, and as ordered by the Engineer, at the Contractor's expense.

The methods, procedures, materials, equipment, anchorage and other pertinent information regarding repairs proposed by the Contractor shall be submitted on a standard shop drawing for approval by the Engineer prior to beginning of work. Approval by the Engineer shall be received prior to the commencement of any work under this Item.

All high strength bolts shall be installed in accordance with the applicable requirements of Section 960 and M8.04.3 of the Standard Specifications.

The work shall be done by methods not likely to produce fracture or other injury to the members remaining in the structure. If, in the opinion of the Engineer, the Contractor's operations damage other members of the structure being retained, he shall be required to change his methods of operations and make all necessary repairs as ordered by the Engineer at no extra cost to the City.

The Contractor shall remove and dispose of in stages any bridge framing elements that require removal as part of the Contract Drawings.

Replacing the missing U-bolt hanger at Floorbeam 7 and completing the proposed truss repairs are initially considered critical repairs to be completed prior to applying any significant load to the truss floor system or beginning repair of the truss floor system.

As repairs of the floor system subsequently occur, the design intention is to have only one bridge U-bolt element repaired at a time with only one temporary support system in place on the bridge at a time, except for the replacement of Floorbeam 7 and the associated overhead stringers to remain in the final condition. If the Contractor wishes to install temporary support systems and perform repairs on multiple locations at once, this should be reflected in their demolition and temporary shoring procedures submitted under items 114.4, 129.2 and 950.1 and approved by the Engineer prior to any work being performed.

The Contractor shall be solely responsible for maintaining the stability of the existing structure at all times during demolition and construction operations.

Demolition and removal of existing bridge deck, pavement and railing are paid under Items 114.4, 129.2, 482.3, 630.2 and 669. and are not considered incidental to this Item.

Debris from construction must be carefully contained within the work zones and prevented from falling into the adjacent travel-ways, or the Mill River below. The Contractor shall be responsible for dust control as a result of the demolition operations. All shielding required to perform this work shall be paid under Item 994.01, "Temporary Protective Shielding".

The Contractor shall take care not to damage the bridge structure to remain. The Contractor shall pay special attention when removing existing bridge deck, asphalt, rivets, stringers, floorbeams and U-bolts. The Contractor shall use methods that will limit disturbance to the existing truss members and it's connections.

The Contractor shall take care not to damage any newly constructed bridge elements or existing bridge elements to remain. Any damages to the existing portions, or new portions, of the structure shall be repaired by the Contractor to the satisfaction of the Engineer and at the Contractor's expense.

Field drilling holes in new steel or existing wrought iron floorbeams for high strength bolts, shall

be included in this item. High strength bolts in new holes shall be included in this item.

MATERIALS

Unless otherwise noted on the Contract Plans, new structural steel shall be AASHTO M270 (ASTM A709) Grade 50.

Except where noted otherwise on the Contract Plans, all fasteners shall be AASHTO M164 (ASTM F3125) high strength bolts, nuts and washers and shall conform to Section M8.04.3 of the MassDOT Standard Specifications. Verification testing as specified by the AASHTO Standard Specifications, shall be performed by the Contractor.

Stainless steel fasteners are included in the plans for wrought iron-to-new steel connections. See Contract Plans for material and strength requirements.

Epoxy filler compound shall be "Chockfast ITW Repair Compound" by ITW Performance Polymers or approved equal. The epoxy filler shall be applied and cured in accordance with the manufacturer's recommendations.

COMPENSATION

Structural Steel Repair and Replacement Items shall be measured at the contract unit prices as shown below, which price shall include all labor, materials, equipment, transportation and incidental costs necessary to complete the work to the satisfaction of the Engineer.

ITEM 960.011	TURNBUCKLE FOR EYE BAR REPAIR	EACH
ITEM 960.012	¾" DIAMETER WIRE ROPE FOR EYE BAR REPAIR	FOOT
ITEM 960.02	STRUCTURAL STEEL-FLOORBEAM REPAIR/REPLACEMENT	EACH
ITEM 960.03	STRUCTURAL STEEL-STRINGER REPLACEMENTS	POUND
ITEM 960.04	STRUCTURAL STEEL-TIGHTEN TRUSS DIAGONAL CHORDS	EACH
ITEM 960.05	STRUCTURAL STEEL-U-BOLT HANGER REPLACEMENTS	EACH
ITEM 960.06	STRUCTURAL STEEL-BOTTOM LATERAL BRACING REPLACEMENTS	POUND
ITEM 960.07	STRUCTURAL STEEL-FLOORBEAM BEARING STIFFENER REPLACEMENTS	POUND
ITEM 960.08	REPLACE RIVET WITH BOLT (AS DIRECTED BY THE ENGINEER)	EACH

Where the item is measured for payment per pound, the measurement of new steel shall be computed as material actually installed, complete in place, and accepted by the Engineer in accordance with the following:

1. Unit weight of steel is 490 pounds per cubic foot.

2. No deductions in weight are to be made for material removed for bolt holes, clips, or access holes.

3. The weight of bolts, nuts, washers and weld material is considered incidental to the steel and is not included in the calculated weight for payment purposes.

4. Any excess steel material ordered at the Contractor's discretion to facilitate fabrication and installation of the required finished product as defined to the limits on the drawing requirements shall not be the City's responsibility. The quantity of steel to be calculated and paid for shall only include the weight of the steel that meets the repair detail requirements for each location measured separately.

ITEM 994.01 TEMPORARY PROTECTIVE SHIELDING LUMP SUM

The Contractor shall install Temporary protective shielding to ensure that any equipment, tools, or materials do not fall into the river. Any material that falls into the river shall be removed immediately, to the satisfaction of the Engineer, at the Contractor's expense. The Contractor shall be responsible for removing accumulations of debris from the shielding in accordance with the shielding design calculation requirements or as directed by the Engineer.

All shielding shall meet the following requirements:

1. The Contractor is responsible for designing, furnishing, installing and maintaining the shielding. When directed by the Engineer, the Contractor shall remove and dispose of the shielding to the satisfaction of the Engineer.

2. The Contractor shall submit drawings and calculations, stamped by a Professional Engineer registered in the Commonwealth of Massachusetts, for the proposed shielding to the Engineer for approval prior to installation. The drawings shall include details of all connections, brackets and fasteners.

3. No portion of the existing structure shall be removed until required Protective Shielding is completely in place and the Contractor has approval from the Engineer to proceed.

4. The shielding shall extend the full length of the bridge span and a sufficient distance above and beyond as required to protect the river below. All spaces along the perimeter of the shielding and at the seams shall be sealed to prevent debris from escaping and falling into the river.

It is anticipated the contractor's operations will be staged to remove pieces incrementally to the bridge without engaging the shielding. Use of scaffolding from a boat in the river will be required if the Contractor cannot meet this requirement as the bridge cannot withstand the impact load of demolished material. Tarps to collect small debris and dust are anticipated. If the Contractor elects to have larger debris, coordination with the Conservation Commission and approval of permitting is required. All load carrying shielding will need to be accommodated from the Mill River below.

The General Requirements for demolition and Work Involving Painted Steel provisions in the front end shall be followed.

COMPENSATION

Temporary Protective Shielding will be paid for at the Contract unit price per lump sum, which price shall include all labor, materials, equipment, and incidental costs required to complete the work.

No separate payment shall be made for miscellaneous removals and disposals that are not specifically listed for payment under another item but all costs in connection therewith shall be

included in the Contract unit price bid. Incidental costs shall also include the design, furnishing, installation and removal of the temporary protective shielding.

The contractor will make their own investigation of the structure to be partially demolished including the materials that are part of, or may be stored in, the structure. No increase will be made to the bid price due to the nature of the materials involved in the demolition. All costs for permits, dump fees, taxes, special handling of hazardous materials, dust control etcetera, shall be included in the bid price of the demolition item.

ITEM 999.1 TRAFFIC POLICE STATED ALLOWANCE

It shall be the Contractor's responsibility to arrange and pay for traffic police coverage during his operations in accordance with the Northampton Police Department regulations. The City shall reimburse all traffic police fees paid by the Contractor for this project for the amount stated as the allowance.

ITEM 999.14 MONTHLY PRICE ADJUSTMENT STATED ALLOWANCE FOR STRUCTURAL STEEL AND REINFORCING STEEL

This special provision applies to all projects containing the use of structural steel and/or reinforcing steel as specified elsewhere in the Contract work. It applies to all structural steel and all reinforcing steel, as defined below, on the project. Compliance with this provision is mandatory, i.e., there are no "opt-in" or "opt-out" clauses. Price adjustments will be handled as described below and shall only apply to unfabricated reinforcing steel bars and unfabricated structural steel material, consisting of rolled shapes, plate steel, sheet piling, pipe piles, steel castings and steel forgings.

Price adjustments will be variances between Base Prices and Period Prices. Base Prices and Period Prices are defined below.

Price adjustments will only be made if the variances between Base Prices and Period Prices are 5% or more. A variance can result in the Period Price being either higher or lower than the Base Price. Once the 5% threshold has been achieved, the adjustment will apply to the full variance between the Base Price and the Period Price.

Price adjustments will be calculated by multiplying the number of pounds of unfabricated structural steel material or unfabricated reinforcing steel bars on a project by the index factor calculated as shown below under Example of a Period Price Calculation.

Price adjustments will not include guardrail panels or the costs of shop drawing preparation, handling, fabrication, coatings, transportation, storage, installation, profit, overhead, fuel costs, fuel surcharges, or other such charges not related to the cost of the unfabricated structural steel and unfabricated reinforcing steel.

The weight of steel subject to a price adjustment shall not exceed the final shipping weight of the fabricated part by more than 10%.

Base Prices and Period Prices are defined as follows:

Base Prices of unfabricated structural steeland unfabricated reinforcing steel on a project are fixed prices determined by the Department and found in the table below. While it is the intention of the Department to make this table comprehensive, some of a project's unfabricated structural steel and/or unfabricated reinforcing steel may be inadvertently omitted. Should this occur, the Contractor shall bring the omission to the Department's attention so that a contract alteration may be processed that adds the missing steel to the table and its price adjustments to the Contract.

The Base Price Date is the month and year of the most recent finalized period price index at the time that MassDOT opened bids for the project. The Base Price Index for this contract is the Steel PPI listed in the Notice to Contractors.

Period Prices of unfabricated structural steel and unfabricated reinforcing steel on a project are

variable prices that have been calculated using the Period Price Date and an index of steel prices to adjust the Base Price.

The Period Price Date is the date the steel was delivered to the fabricator as evidenced by an official bill of lading submitted to the Department containing a description of the shipped materials, weights of the shipped materials and the date of shipment. This date is used to select the Period Price Index.

The index used for the calculation of Period Prices is the U.S. Department of Labor Bureau of Labor Statistics Producer Price Index (PPI) Series ID WPU101702 (Not Seasonally Adjusted, Group: Metals and Metal Products, Item: Semi-finished Steel Mill Products.) As this index is subject to revision for a period of up to four (4) months after its original publication, no price adjustments will be made until the index for the period is finalized, i.e., the index is no longer suffixed with a "(P)".

Period Prices are determined as follows:

Period Price = Base Price X Index Factor
Index Factor = Period Price Index / Base Price Index

Example of a Period Price Calculation:

Calculate the Period Price for December 2009 using a Base Price from March 2009 of $0.82/Pound for 1,000 Pounds of ASTM A709 (AASHTO M270) Grade A36 Structural Steel Plate.

The Period Price Date is December 2009. From the PPI website*, the Period Price Index = 218.0.

The Base Price Date is March 2009. From the PPI website*, the Base Price Index = 229.4.

Index Factor = Period Price Index / Base Price Index = 218.0 / 229.4 = 0.950
Period Price = Base Price X Index Factor = $0.82/Pound X 0.950 = $0.78/Pound

Since $0.82 - $0.78 = $0.04 is less than 5% of $0.82, no price adjustment is required.

If the $0.04 difference shown above was greater than 5% of the Base Price, then the price adjustment would be 1,000 Pounds X $0.04/Pound = $40.00. Since the Period Price of $0.78/Pound is less than the Base Price of $0.82/Pound, indicating a drop in the price of steel between the bid and the delivery of material, a credit of $40.00 would be owed to the City. When the Period Price is higher than the Base Price, the price adjustment is owed to the Contractor.

* To access the PPI website and obtain a Base Price Index or a Period Price Index, go to http://data.bls.gov/cgi-bin/srgate

End of example.

The Contractor will be paid for unfabricated structural steel and unfabricated reinforcing steel under the respective contract pay items for all components constructed of either structural steel or reinforced Portland cement concrete under their respective Contract Pay Items.

ADDENDA

BID

Bid Form – Contracts 2024: Hotel Bridge Rehabilitation, Bridge No. N-19-027 (0RA)

Item	Estimated Quantity	Item with Unit Bid Price Written in Words	Unit Price in Figures	Total Amount in Figures
101	0.01	Clearing and Grubbing Per Acre	$_____	$_____
101.2	1	Remove Debris from Abutment Seats Per Lump Sum	$_____	$_____
107.855	4	Pressure Injection of Cracks Per Each	$_____	$_____
114.4	175	Removal of Metal Plank Bridge Deck Per Square Yard	$_____	$_____
129.2	175	Old Pavement Excavation Per Square Yard	$_____	$_____
156.1	10	Crushed Stone For Bridge Foundations Per Ton	$_____	$_____
482.3	30	Sawcutting Asphalt Pavement Per Foot	$_____	$_____
630.2	270	Highway Guard Removed and Discarded Per Foot	$_____	$_____
655.01	60	Timber Rail Fence Per Foot	$_____	$_____

Bid Form – Contracts 2024: Hotel Bridge Rehabilitation, Bridge No. N-19-027 (0RA)

Item	Estimated Quantity	Item with Unit Bid Price Written in Words	Unit Price in Figures	Total Amount in Figures
655.02	270	Timber Rail Fence on Bridge Per Foot	$_____	$_____
657	125	Temporary Fence Per Foot	$_____	$_____
669	260	Fence Removed and Stacked Per Foot	$_____	$_____
707.8	6	Steel Bollard Per Each	$_____	$_____
748	1	Mobilization Per Lump Sum	$_____	$_____
874.4	1	Traffic Sign Removed and Stacked Per Each	$_____	$_____
950.1	1	Temporary Shoring Per Lump Sum	$_____	$_____
955.1	2,630	Timber (IPE) Decking Per Foot	$_____	$_____
960.011	19	Turnbuckle for Eye Bar Repairs Per Each	$_____	$_____

Bid Form – Contracts 2024: Hotel Bridge Rehabilitation, Bridge No. N-19-027 (0RA)

Item	Estimated Quantity	Item with Unit Bid Price Written in Words	Unit Price in Figures	Total Amount in Figures
960.012	410	¾" Diameter Wire Rope For Eye Bar Repair Per Foot	$_____	$_____
960.02	4	Structural Steel-Floorbeam Repair/Replacements Per Each	$_____	$_____
960.03	5,400	Structural Steel-Stringer Replacements Per Pound	$_____	$_____
960.04	7	Structural Steel-Tighten Truss Diagonal Chords Per Each	$_____	$_____
960.05	7	Structural Steel-U-Bolt Hanger Replacements Per Each	$_____	$_____
960.06	470	Structural Steel-Bottom Lateral Bracing Replacements Per Pound	$_____	$_____
960.07	130	Structural Steel-Floorbeam Bearing Stiffener Replacements Per Pound	$_____	$_____
960.08	50	Replace Rivet With Bolt (As Directed by the Engineer) Per Each	$_____	$_____
994.01	1	Temporary Protective Shielding Per Lump Sum	$_____	$_____

Bid Form – Contracts 2024: Hotel Bridge Rehabilitation, Bridge No. N-19-027 (0RA)

Item	Estimated Quantity	Item with Unit Bid Price Written in Words	Unit Price in Figures	Total Amount in Figures
999.1	1	Traffic Police One Thousand Five Hundred Dollars Per Stated Allowance	$1,500	$1,500
999.14	1	Monthly Price Adjustment for Structural Steel and Reinforcing Steel Five Hundred Dollars Per Stated Allowance	$500	$500

TOTAL BID PRICE (IN FIGURES) $_____

TOTAL BID PRICE (IN WORDS) $_____

The work referred to herein is in the City of Northampton, MA as follows:

- **Hotel Bridge in Leeds, Bridge No.-19-027**

TO THE PARTY OF THE FIRST PART:

The undersigned, as bidder, declares that he has carefully examined the location of the proposed work, the proposed form of the contract, Standard Specifications and plans therein referred to and the Special Provisions hereto annexed; and he proposes and agrees, if this proposal is accepted, that he will contract with the Party of the First Part, in the form of the contract referred to herein and to be annexed hereto, to provide all necessary machinery, tools apparatus and other means of construction, and to do all work and furnish all the materials specified in the contract, and in the manner and time therein prescribed, and according to the requirements of the Engineer the following unit prices to wit:

The undersigned agrees that if he is selected as Contractor, he will within seven (7) days, Saturdays, Sundays and legal holidays excluded, after presentation thereof by the awarding authority, execute a contract in accordance with the terms of this bid and furnish a performance bond and also a labor and materials or payment bond, each of a surety company qualified to do business under the laws of the Commonwealth and satisfactory to the awarding authority and each in the sum of one hundred (100) percent of the contract price, the premiums for which are to be paid by the Contractor and are included in the contract price.

The undersigned hereby certifies that he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work; that all employees to be employed at the worksite will have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least 10 hours in duration at the time the employee begins work and who shall furnish documentation of successful completion of said course with the first certified payroll report for each employee; and that he will comply fully with all laws and regulations applicable to awards made subject to section 44A.

The undersigned hereby agrees to complete the work and turn the project over to the Owner by **December 31, 2025** unless agreed to by the Owner.

Said date may be extended should inclement weather interfere with construction, as approved by the Department of Public Works.

<u>Liquidated Damages for Failure to Complete Work on Time.</u>

It is the City's goal to minimize the construction impacts associated with this project, such as but not limited to (a) safety factors due to disruption of traffic (b) abutters' unimpeded accessibility to their property and (c) noise and dust generated by the construction. Therefore, the Contractor shall be assessed liquidated damages in the amount of Six Hundred Dollars ($600.00) per day for each day after the completion date stated herein that the work required under this Contract

remains uncompleted. The Contractor agrees that, due to the nature of the damages aforementioned, actual determination of a monetary amount for these damages is impossible. Assessment of damages shall cease on the date of substantial completion of said work. No assessment of damages shall be made for extensions in the completion date which have been mutually negotiated between the parties. No assessment of damages shall be made for delays which are caused by circumstances beyond the control of the Contractor such as natural disasters, strikes, civil unrest, or acts of god. It is understood that the Contractor will promptly inform the Owner of any delays for reasons beyond its control and request an extension of the completion date. The Owner will not unreasonably withhold approval of such extensions.

SIGNATURE OF BIDDER

The undersigned certifies under penalties of perjury that this bid is in all respects bona fide, fair and made without collusion or fraud with any other person. As used in this paragraph the word "person" shall mean any natural person, joint venture, partnership, corporation or other business or legal entity.

Full name and address of individual or concern submitting this bid:

_____

_____

_____

Corporation, Partnership,
Individual Owner (s)
(circle applicable status)

Signed by: _____

_____

Title

(A) CERTIFICATION OF AUTHORITY

I,_____, the clerk of _____,

the corporation submitting this bid, do hereby certify that _____,

its_____, is duly authorized to submit said bid on behalf of the corporation, to bind said corporation as to the terms of this bid, and to execute a contract if the Corporation is awarded the bid.

If bidder is a corporation, give the state in which incorporated: _____

(B) If the bidder is a partnership, give the names and addresses of each of the partners:

Name	Address
_____	_____
_____	_____
_____	_____

(C) If the bidder is an individual or individuals doing business as a firm, give the full name and address of each individual:

Name	Address
_____	_____
_____	_____
_____	_____
_____	_____

NOTICE: This bid should be signed in ink by a person having proper legal authority to bind the bidder both as to this bid and any contract executed pursuant thereto. The person's title should be given, such as "President", "Treasurer" or other authorized officer in the case of a corporation; "Partner" in the case of a partnership, and "Owner" in the case of an individual. Section (A) must be completed for a corporation, Section (B) for a partnership, and Section (C) for an individual.

THE PROPOSED SURETY ON THE BOND TO BE GIVEN IS:

Name _____

Home Office Address _____

MA Address, if different _____

_____

CONTRACT AGREEMENT

CITY OF NORTHAMPTON
MASSACHUSETTS

CONTRACT NUMBER: ___
BUDGET CODE: ___
VENDOR NUMBER: ___

CONSTRUCTION CONTRACT

THIS AGREEMENT, executed this _____ day of _____ 2023 by and between:

Company Name
Address
City, State, Zip Code

hereinafter called "Contractor" and the City of Northampton, a municipal corporation in the County of Hampshire, Commonwealth of Massachusetts, party of the second part, hereinafter called "Owner".

WITNESSETH that for the consideration hereinafter mentioned, the Contractor and the Owner shall agree to the terms and conditions contained in this contract, enumerated as follows: The Owner-Contractor Agreement, Advertisement, Bidding Documents, Contract Forms, Insurance Requirements, Specifications, and all addenda issued prior to and all Modifications issued after execution of the Contract.

THE OWNER shall pay the Contractor for the performance of this contract in the sum of: **$**_____ in accordance with the terms of this construction contract.

This contract shall not be altered in any particular without the consent of all parties to this contract. All alterations to this contract must be in writing and authorized as such by the Mayor, Agency, or Committee signing this contract.

The Contractor shall not delegate, assign or transfer any of its duties delineated in the scope of services without prior written consent from the CITY.

In the event the Contractor is a corporation, a certificate that the person executing this contract is duly authorized to sign, must accompany this contract.

Notwithstanding anything in the Contract documents to the contrary, any and all payments which the City is required to make under this Contract shall be subject to appropriation or other availability of funds as certified by the City Auditor. Obligations for payments beyond the current fiscal year are subject to appropriation and this Contract shall be canceled in the event of non-appropriation.

Final payment on this contract shall release and discharge the Owner from any and all claims against the Owner on account of any work performed hereunder, or any alteration hereto.

The Vendor shall indemnify and hold harmless, the CITY and all of its officers, agents, and employees against all suits, claims or liabilities of every nature, arising out of, or in consequence of, the acts or omissions of the Contractor, its employees, agents, or sub-contractors in connection with their rendering of services or goods under this AGREEMENT and will, at the Contractor's own cost and expense, defend any and all such suits and actions

By signing this contract, the Vendor agrees to subject any dispute to mediation, at the option of the City, prior to filing suit in any forum.

This contract shall be deemed to be a Massachusetts contract and its interpretation and construction shall be governed by the laws of Massachusetts and the Charter and Ordinances of the Owner.

The provisions of this contract are severable. If any provision of this contract shall be held unconstitutional by any court of competent jurisdiction, the decision of such court shall not affect any other provisions of this contract.

The City of Northampton is not bound by this contract until approved by the Mayor of Northampton.

Pursuant to M.G.L. Chapter 62C, Section 49A, I certify under the penalties of perjury that I have, to my best knowledge and belief, complied with the law of the Commonwealth relating to taxes, reporting of employees and contractors, and withholding and remitting child support. I further authorize the City of Northampton to deduct from the amounts due under this contract, any overdue taxes, real or personal, or any other fees due to the City of Northampton from the vendor which become due and payable by the vendor or its officers, directors or agents during the term of this contract or until the final amounts due under this contract are paid in full.

The Contractor certifies that a) neither it nor any of its subcontractors have been subject to a federal or state criminal or civil judgment, administrative citation, final administrative determination, order or debarment resulting from a violation of G.L. c. 149, c. 151, or the Fair Labor Standards Act within three (3) years prior to the date of the Contract, or b) that if it or any of its subcontractors have been subject to a federal or state criminal or civil judgment, administrative citation, final administrative determination, order or debarment resulting from a violation of G.L. c. 149, c. 151, or the Fair Labor Standards Act within three (3) years prior to the date of the Contract, the Contractor has provided copies of any such judgment, citation, determination or order to the City prior to the date of the Contract and has procured a wage bond or insurance. The Contractor certifies that while the Contract is in effect, it will report any instance of the above to the City within five (5) days of Contractor's receipt.

The vendor certifies that it does not participate in the design, manufacture or maintenance of nuclear weapons. The vendor certifies that it is not a subsidiary entity controlled by an entity that engages in the design, manufacture or maintenance of such weapons. The vendor certifies that it is not a parent or holding entity of a subsidiary entity that engages in the design, manufacture or maintenance of such weapons.

Check one: The contractor does □ not □ have a Northampton office.

IN WITNESS WHEREOF the Owner caused these presents to be signed in triplicate and approved by Gina-Louise Sciarra its Mayor and the said Contractor has caused these presents to be signed in triplicate and its official seal to be hereto affixed by its officer or agent thereunto duly authorized (by the attached corporate resolution). This instrument shall take effect as a sealed instrument.

VENDOR: _____
COMPANY NAME

_____
AUTHORIZED SIGNATURE

_____ DATE _____
TITLE

CITY OF NORTHAMPTON:
BY:

_____ _____
Director of Public Works City Engineer

Date bid filed with City Clerk: _____

Performance Bond Required? yes _____ no _____

Bid Date; _____

Amount: _____

Bonding Company _____

_____ Date _____
City Auditor, approved as to appropriation.

_____ Date _____
City Solicitor, approved as to form.

_____ Date _____
Mayor Gina-Louise Sciarra

CITY-STATE
CONTRACT FORMS

In the case of a conflict between City, State or Federal Requirements,
the more stringent requirements shall apply.

Foreign Corporation Certification

AFFIDAVIT OF COMPLIANCE
Form AF-4A l\78

EXECUTIVE OFFICE FOR
ADMINISTRATION AND FINANCE

The Commonwealth of Massachusetts

_____ MASSACHUSETTS BUSINESS CORPORATION

_____ NON-PROFIT CORPORATION

_____ FOREIGN (non-Massachusetts) CORPORATION

I, _____, _____Clerk of

_____ whose principal office
(Name of Corporation)

is located _____

do hereby certify that the above named Corporation has filed with the State Secretary all certificates and annual reports required by Chapter 156B, Section 109 (Business Corporation), by Chapter 181, Section 4 (Foreign Corporation), or by Chapter 180, Section 26A (non-profit Corporation) of the Massachusetts General Laws.

SIGNED UNDER THE PENALTIES OF PERJURY THIS _____ DAY OF_____, 20____.

Signature of responsible Corporate Officer _____

Certificate by Corporation to Sign Contract

At a duly authorized meeting of the Board of Directors of the

_____ held on _____
(Name if Corporation) (Date)

At which all the Directors were present or waived notice, it was voted that,

_____ _____
(Name) (Officer)

of this company, be and he hereby is authorized to execute contracts and bonds in the name and behalf of said company, and affix its Corporate Seal thereto, and such execution of any contract or obligation in this company's name on its behalf by such

_____ under seal of the company,
(Officer)

shall be valid and binding upon this company,

A TRUE COPY,

ATTEST:_____
(Clerk)

PLACE OF BUSINESS:_____

_____

DATE OF THIS CONTRACT:_____

I hereby certify that I am the clerk of the _____

and that_____is the duly elected_____
of said company, and the above vote has not been amended or rescinded and remains in full force and effect as of the date of this contract.

_____

(CLERK) (CORPORATE SEAL)

Tax and Reporting Compliance Certification

Pursuant to M.G.L. Chapter 62C, Section 49A, I certify under the penalties of perjury that I have, to my best knowledge and belief, complied with the law of the Commonwealth relating to taxes, reporting of employees and contractors, and withholding and remitting child support.

Social Security Number or Federal Identification Number	Signature of Individual or Corporate Name
By:	Corporate Officer (if applicable)

Please attach one W-9 to this contract when you return it to the City.

SUPPLEMENTAL INFORMATION

Supplemental Information 1:

"In-Depth Inspection Report"
done by GPI, dated July 19, 2022

GPI

Engineering | Design | Planning | Construction Management

In-Depth Inspection Report

July 19, 2022

BRIDGE NO. N19-27
OLD SHEPHERD ROAD (HOTEL BRIDGE) OVER MILL RIVER
LEEDS, MASSACHUSETTS

CLIENT: Massachusetts Department of Transportation

WARNING: Alteration of this material in any way, unless under the direction of a comparable professional, i.e. Professional Engineer, is a violation of the New York State Education Law and/or Regulations and a Class 'A' misdemeanor.

181 Ballardvale Street | Suite 202, Wilmington, MA 01887 | 978.570.2999 | gpinet.com

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1.0 Introduction

Greenman-Pedersen, Inc. (GPI) conducted a site visit on May 23rd and 24th, 2022 to perform an in-depth inspection of Bridge No. N19-27 also known as the Hotel Bridge. The bridge is on an abandoned section of Old Shepherd Road over the Mills River in Leeds, Massachusetts (Refer to location map in the Inspection Sketches section). The structure is a single span overhead wrought iron truss constructed in 1880. Our inspection included all elements of the bridge except the deck, including the galvanized steel pans and asphalt wearing surface, and rail. We understand that the deck and the rail will be replaced in an upcoming rehabilitation project. Our work included ultrasonic testing of the truss top and bottom chord pins. Removal of the existing paint at the end of each pin was necessary to perform the ultrasonic testing. No other testing of materials or destructive removals were performed as part of this inspection. Also, the truss geometry and member sizes determined in the previous inspection on February 7, 2014 were confirmed as part of our work.

The bridge is closed to vehicle and pedestrian traffic. There are concrete planters at the west end of the bridge and metal chain link fencing fastened to the truss members at each end of the bridge to restrict traffic from using the structure. The chain link fencing was temporarily removed to gain access to the bridge during the inspection.

2.0 General Description

The bridge is a wrought iron Pratt truss that spans approximately 128 ft with nine (9) panels ranging in length between 14'-0" and 14'-3". The truss members utilize pinned connections at the panel points on the top and bottom chords. There are two main truss members about 17 ft tall with a top chord consisting of double channels with a riveted cover plate and intermittent tie bars at the bottom. Each bottom chord consists of paired looped wrought iron eye bars connected to iron pins at the panel points. The remainder of the truss consists of I-beam verticals, rods and paired wrought iron looped eye bar diagonals. The bridge is skewed approximately 18 degrees. All truss members are coated with a lead-based paint system.

The bridge deck is about 10'-6" wide and consists of asphalt pavement on galvanized metal decking supported on wrought iron stringers. The stringers are 10 inch deep I-shape members spaced approximately 3'-0" on center which run continuously over the top of wrought iron floorbeams. There are eight (8) approximately 12 inch deep I-shape floorbeams that are about 14'-6" long. See Appendix A for bridge drawings. The floorbeams are hung from the truss panel point pins by U-bolts. All deck members are coated with a lead-based paint system.

Substructures for the bridge consist of laid up stone masonry gravity abutments and wingwalls. The abutments are roughly 8 ft in height. The wingwalls are splayed except for the north side of the begin abutment, which is in-line with the abutment. Foundations for the abutments are unknown.

3.0 Field Log

Date:	5/23/2022	**Arrival:**	6:30 am	**Depart:**	3:35 pm
Weather:	Sunny	**Temp (F):**	70		

Staff Present	
Name	**Organization**
Eric Alexopoulos, PE	Greenman-Pedersen, Inc.
Kevin Cole	Greenman-Pedersen, Inc.
Zachary McGrath	Greenman-Pedersen, Inc.
Tim Tarczali	Strategic Environmental Services, Inc.
Mike	Strategic Environmental Services, Inc.
Chris Shank	Harcon Corporation
Lee	Harcon Corporation
Randal Brook	Skytesting, Inc.

Access Type
Walking
Extension Ladder
Pontoon Boat w/ Fixed Scaffolding (Launched from southeast embankment)

Date:	5/24/2022	**Arrival:**	7:00 am	**Depart:**	2:00 pm
Weather:	Sunny	**Temp (F):**	75		

Staff Present	
Name	**Organization**
Kevin Cole	Greenman-Pedersen, Inc.
Tim Tarczali	Strategic Environmental Services, Inc.
Rick	Strategic Environmental Services, Inc.
Chris Shank	Harcon Corporation
Lee	Harcon Corporation
Randal Brook	Skytesting, Inc.

Access Type
Walking
Extension Ladder
Pontoon Boat w/ Fixed Scaffolding (Launched from southeast embankment)

4.0 Inspection Findings

This in-depth inspection was performed in accordance with the National Bridge Inspection System (NBIS). The NBIS breaks down bridge structures into defined Elements, such as girders, bearings and abutments, which can be categorized into Condition States. Quantities for each Element are calculated during the initial inspection and utilized on subsequent inspections. See Appendix B for the quantity calculations for this structure. The inspector is responsible for evaluating each Element and assigning the quantity of an Element to a descriptive Condition State assessment of "good", "fair", "poor", "severe", or "unknown". The following are general condition state guidelines; however, these guidelines do not replace the typical defect condition state definitions:

Condition State	Condition Type	General Condition Guideline
CS-1	Good	That portion of the element that has either no deterioration or the deterioration is insignificant to the management of the element, meaning that portion of the element has no condition based preventive maintenance needs or repairs. Areas of an element that have received long lasting structural repairs that restore the full capacity of the element with an expected life equal to the original element may be coded as good condition.
CS-2	Fair	That portion of the element that has minor deficiencies that signify a progression of the deterioration process. This portion of the element may need condition based preventive maintenance. Areas of the element that have received repairs that improve the element, but the repair is not considered equal to the original member may be coded as fair.
CS-3	Poor	That portion of the element that has advanced deterioration but does not warrant structural review. This portion of the element may need condition based preventative maintenance or other remedial action.
CS-4	Severe	That portion of the element that warrants a structural review to determine the effect on strength or serviceability of the element or bridge; OR a structural review has been completed and the defects impact strength of serviceability of the element or bridge; OR a condition where that portion of the element is no longer effective for its intended purpose.
CS-5	Unknown	That portion of the element not assessable due to lack of access.

For purposes of inspection, the west abutment is considered the begin abutment and the east abutment is considered the end abutment. The north truss is considered the left truss and the south truss is considered the right truss.

Element Assessment Summary Table							
Element	**Total Quantity**	**Unit**	**CS-1**	**CS-2**	**CS-3**	**CS-4**	**CS-5**
60 – Other Material Deck	1467	SF	0	0	0	0	1467
118 – Other Stringer	510	LF	95	298	111	6	0
515 – Steel Protective Coating	1473	SF	0	663	515	295	0
136 – Other Truss	255	LF	182	51	22	0	0
515 – Steel Protective Coating	2940	SF	0	2499	294	147	0
157 – Other Floor Beams	116	LF	42	32	41	1	0
515 – Steel Protective Coating	603	SF	0	392	120	91	0
217 – Masonry Abutment	36	LF	0	31	5	0	0
220 – Pile Cap/Footing	36	LF	0	0	0	0	36
306 – Other Joint	24	LF	0	0	0	24	0
311 – Moveable Bearing	12	EA	0	0	0	12	0
515 – Steel Protective Coating	14	SF	0	0	0	14	0
330 – Metal Bridge Railing	255	LF	0	0	0	0	255

60 – Other Material Deck

Total Quantity (SF)	CS-1	CS-2	CS-3	CS-4	CS-5
1467	0	0	0	0	1467

Condition State 5 Notes:

This item was not included in the in-depth inspection as it will be replaced as part of an upcoming rehabilitation project. It is noted in this report for completeness.

118 – Other Stringer

Total Quantity (LF)	CS-1	CS-2	CS-3	CS-4	CS-5
510	95	298	111	6	0

Condition State 2 Notes:

Most of the stringers in each panel have areas along the top flange, bottom flange and web where the paint system failed and corrosion of the underlying metal has initiated (Photo 1).

Condition State 3 Notes:

The most significant section loss is noted at the following locations:

Panel 3: Stringer S4 web has up to 20% section loss over Floorbeam 3. Stringer S1 web has a 6 inch long by 3 inch high perforation in the web approximately ½ inch above the bottom flange at Floorbeam 3 (Photo 2). This condition rates CS-4. The surrounding web area has up to 35% section loss.

Panel 4: There is up to 25% web section loss to Stringer S1 over Floorbeam 3 (Photo 3).

Panel 5: Stringer S1, S2 and S3 have up to 35% top flange section loss and 20% bottom flange section loss over almost their entire length (Photo 4). There is up to 50% top flange section loss with minor perforations to Stringer S4 over the end half of the stringer (Photo 5). Stringer S4 also has a 1 inch long by 5 inch high perforation in the web over Floorbeam 5. The area surrounding the perforation has up to 25% web section loss.

Panel 6: There is up to 50% top flange section loss with a small perforation on the right side at each third point of Stringer S1. Stringer S2, S3 and S4 have up to 50% top flange section loss over the middle third of the stringer. In addition, Stringer S2 has up to 50% top flange section loss over Floorbeam 6 (Photo 6).

Panel 7: Stringer S1 has up to 75% top flange section loss over the entire stringer length and multiple small perforations in the upper portion of the web with up to 35% overall section loss to the web at Floorbeam 7. Stringer S2 and S3 have up to 50% top flange section loss over the begin half of the stringer and over Floorbeam 7. There is up to 75% top flange section loss over the begin half of Stringer S4 and over Floorbeam 7 (Photo 7). Stringer S4 also has approximately 25% bottom flange

section loss over 1 ft at Floorbeam 7.

Panel 8: Starting 4 ft from Floorbeam 7 the top flange of Stringer S1 is knife edged approximately 4 ft long, the bottom flange has up to 70% section loss and the upper portion of the web has a 16 inch long by 2 inch high perforation with up to 30% section loss to the surrounding area (Photo 8). Starting about 2 ft from Floorbeam 8 the top flange of Stringer S1 is knife edged approximately 3 ft long, the bottom flange has up to 10% section loss and the upper portion of the web has a series of small perforations with up to 30% section loss to the surrounding area (Photo 9). These conditions on Stringer S1 rate CS-4. Stringer S2, S3 and S4 have a 1 ft long length of up to 50% top flange section loss 4 ft from Floorbeam 7 and a 3 ft long length of similar condition 3 ft from Floorbeam 8.

118 – Other Stringer – 515 – Steel Protective Coating

Total Quantity (SF)	CS-1	CS-2	CS-3	CS-4	CS-5
1473	0	663	515	295	0

Common Notes:

Generally, the paint system has failed and provides no protection along the top and bottom flanges of all stringers in each panel (Photo 1, 3, 4, 5, 6, 7 & 8) . These areas rate CS-4.

The paint system is bubbling and/or has flakes less than ½ inch diameter generally along the webs of all stringers in each panel. The paint system provides limited protection in these areas and rates CS-3.

The remainder of the paint system appears dull or the finish coat is flaking and rates CS-2.

136 – Other Truss

Total Quantity (LF)	CS-1	CS-2	CS-3	CS-4	CS-5
255	182	51	22	0	0

Common Notes:

Generally, the trusses are in good condition. The trusses have a slight list to the upstream side. The most significant conditions are noted as follows:

Top Chord

There are miscellaneous areas along each top chord where pack rust is causing local buckling of the cover plate between rivets (Photo 10). There are also miscellaneous locations of surface corrosion or very minor section loss where the paint system has failed (Photo 11). The bottom of each end post on the right truss is the most notable location with less than 5% section loss to both channels (Photo 12). On the south truss, panel point U3 the nut which fastens the top later bracing connection is not fully tightened. These conditions rate CS-2.

There is section loss to the bottom of the end post members on the left truss. The L0L1 end post member has 45% web section loss and perforations to the inboard channel member resulting in an overall section loss of 15% for the built-up member. The L9U8 end post member has up to 15% web section loss to both channel members for an overall section loss of 10% for the built-up member (Photo 14). These two areas rate CS-3.

The paint system was removed at the ends of the pin at each panel point to allow for ultrasonic testing. The ultrasonic testing did not reveal any cracks or other defects in the pins. See Appendix C for the results of the testing.

Bottom Chord

The bottom chord consists of pairs of looped wrought iron bars. Special emphasis was given to the eye bar heads at the pin connections during the inspection. There is no cracking in the forge zone of any of the eye bars. There are miscellaneous locations of surface corrosion along the length of the eye bars which rate CS-2. There is section loss on the bar heads at the following locations:

Left Truss

L0L2: Up to 20% section loss on the inboard eye bar head and 10% section loss on the outboard eye bar head at panel point L0. Up to 30% section loss on the inboard eye bar head and 15% section loss on the outboard eye bar head at panel point L2.

L2L3: Up to 20% section loss on the inboard eye bar head and 10% section loss on the outboard eye bar head at panel point L2. Up to 20% section loss on the inboard eye bar head and 10% section loss on the outboard eye bar head at panel point L3.

L3L4: Up to 5% section loss on the inboard and outboard eye bar head at panel point L3 and L4.

L4L5: Up to 5% section loss on the inboard and outboard eye bar head at panel point L4. Up to 10% section loss on the inboard eye bar head and 15% section loss on the outboard eye bar head at panel point L5.

L5L6: Up to 5% section loss on the inboard and outboard eye bar head at panel point L5. Up to 25% section loss on the inboard eye bar head and 5% section loss on the outboard eye bar head at panel point L6.

L6L7: Up to 20% section loss on the inboard eye bar head and 10% section loss on the outboard eye bar head at panel point L6. Up to 20% section loss on the inboard eye bar head and 5% section loss on the outboard eye bar head at panel point L7.

L7L9: Up to 20% section loss on the inboard eye bar head and 10% section loss on the outboard eye bar head at panel point L7. Up to 45% section loss on the inboard eye bar head and 20% section loss on the outboard eye bar head at panel point L9 (Photo 14).

Right Truss

L0L2: Up to 10% section loss on the inboard and outboard eye bar head at panel point L0 (Photo 13). Up to 15% section loss on the inboard and outboard eye bar head at panel point L2.

L2L3: Up to 10% section loss on the inboard and outboard eye bar head at panel point L2. Up to 10% section loss on the inboard eye bar head and 5% section loss on the outboard eye bar head at panel point L3.

L3L4: Up to 10% section loss on the inboard and outboard eye bar head at panel point L3. Up to 10% section loss on the inboard eye bar head and 40% section loss on the outboard eye bar head at panel point L4.

L4L5: Up to 5% section loss on the inboard eye bar head and 10% section loss on the outboard eye bar head at panel point L4. Up to 15% section loss on the inboard eye bar head and 5% section loss on the outboard eye bar head at panel point L5. There is a missing washer on the outboard bottom chord at L5.

L5L6: Up to 10% section loss on the inboard and outboard eye bar head at panel point L5. Up to 20% section loss on the inboard eye bar head and 5% section loss on the outboard eye bar head at panel point L6.

L6L7: Up to 30% section loss on the inboard eye bar head and 20% section loss on the outboard eye bar head at panel point L6. Up to 20% section loss on the inboard eye bar head and 10% section loss on the outboard eye bar head at panel point L7.

L7L9: Up to 20% section loss on the inboard eye bar head and 10% section loss on the outboard eye bar head at panel point L7. Up to 50% section loss on the inboard eye bar head and 10% section loss on the outboard eye bar head at panel point L9 (Photo 12).

All of the bottom chord eye bar heads have significant section loss and rate CS-3.

The paint system was removed at the ends of the pin at each panel point to allow for ultrasonic testing. The ultrasonic testing did not reveal any cracks or other defects in the pins. See Appendix C for the results of the testing.

Verticals

Vertical members L1U1 and L8U8 on both trusses are forged iron hanger rods. Special emphasis was given to the rod heads at the pin connections during the inspection. There is no cracking in the forge zone of any of the eye rods. There is less than 5% section loss at the heads of the rods. These members rate CS-2.

The remaining vertical are wrought iron I-beams. There are miscellaneous locations of surface corrosion or very minor section loss where the paint system has failed on most of the vertical members (Photo 11). These members rate CS-2.

Diagonals

The diagonal members consist of pairs of looped wrought iron bars or forged hanger rods. Special emphasis was given to the heads at the pin connections during the inspection. There is no cracking in the forge zone of any of the eye bars. There is section loss on the bar heads at the bottom chord and several eye bars were loose and/or twisted at the following locations:

Left Truss

L2U1: Up to 10% section loss to the inboard and outboard eye bar head at panel point L2.

L3U2: Up to 15% section loss on the inboard eye bar head and 10% section loss on the outboard eye bar head at panel point L3.

L3U4: Up to 5% section loss on the rod head at panel point L4. This diagonal member is loose.

L4U3: Up to 5% section loss on the inboard and outboard eye head at panel point L4.

L4U5: Up to 5% section loss on the rod head at panel point L4. This diagonal member is loose and twisted.

L5U4: Up to 5% section loss on the rod head at panel point L5. This diagonal member is loose and twisted.

L5U6: Up to 5% section loss on the inboard and outboard eye head at panel point L5.

L6U5: Up to 5% section loss on the rod head at panel point L6. This diagonal member is very loose.

L6U7: Up to 15% section loss on the inboard and outboard eye head at panel point L6.

L7U8: Up to 10% section loss on the inboard and outboard eye head at panel point L7.

Right Truss

L2U1: Up to 10% section loss to the inboard and outboard eye bar head at panel point L2. The inboard eye bar has impact damage, bent up to 2 inches approximately 4 ft above the deck.

L3U2: Up to 15% section loss on the inboard eye bar head and 10% section loss on the outboard eye bar head at panel point L3. The inboard eye bar is slightly loose and has impact damage, bent up to 4 inches approximately 4 ft above the deck.

L3U4: Up to 5% section loss on the rod head at panel point L4. This diagonal member is slightly loose.

L4U3: Up to 5% section loss on the inboard and outboard eye head at panel point L4. This diagonal member is slightly loose.

L4U5: Up to 5% section loss on the rod head at panel point L4. This diagonal member is loose and twisted.

L5U4: Up to 5% section loss on the rod head at panel point L5.

L5U6: Up to 20% section loss on the inboard eye bar head and up to 30% section loss on the outboard eye head at panel point L5.

L6U5: Up to 5% section loss on the rod head at panel point L6. This diagonal member is very loose.

L6U7: Up to 10% section loss on the inboard and outboard eye head at panel point L6. This diagonal member is loose and slightly twisted.

L7U8: Up to 25% section loss on the inboard eye bar head and up to 10% section loss on the outboard eye head at panel point L7.

Left Truss members L2U1, L3U2, L6U7, L7U8 and Right Truss members L2U1, L3U2, L5U6, L6U7, L7U8 have significant section loss and rate CS-3.

Secondary Members

The bottom lateral bracing consists of cross rods between the trusses connected to tabs on the bottom flange of the fascia stringers in each panel. The top lateral bracing system consists of steel cross rods in each panel and small I-beams connecting opposite upper panel points between the trusses. The end portal bracing consists of a pair of back-to-back steel angles connected by lacing bars. These bracing systems are tight and in good condition with only scattered areas of surface corrosion along their length (Photo 1 & 27). The secondary members rate CS-2.

136 – Other Truss – 515 – Steel Protective Coating

Total Quantity (SF)	CS-1	CS-2	CS-3	CS-4	CS-5
2940	0	2499	294	147	0

Common Notes:

There are miscellaneous small feckled areas where the paint system has failed and the underlying metal has surface corrosion on the chord, vertical, diagonal and bracing members throughout the bridge (Photo 11). The most notable of these areas is at the bottom of the end posts at each truss bearing (Photo 14). The paint system has been removed by impact on the right truss diagonal L2U1 and L3U2 members about 4 ft above the deck (Photo 15). The paint system was removed to allow testing of the pins at all lower and upper chord panel points. These areas rate CS-4.

There is bubbling peeling paint near the bottom of each end post and at the end of several bottom chord members (Photo 12, 13 & 14). These areas rate CS-3.

The finish coat is flaking mostly on the upper chord and vertical members of both trusses. Otherwise, the remainder of the paint system appears dull. These areas rate CS-2.

157 – Other Floor Beams

Total Quantity (LF)	CS-1	CS-2	CS-3	CS-4	CS-5
116	42	32	41	1	0

Condition State 2 Notes:

Most of the floorbeams have areas along the top flange, bottom flange and web where the paint system failed and corrosion of the underlying metal has initiated.

Condition State 3 Notes:

The most significant section loss is noted at the following locations:

Floorbeam 1: There is an average section loss of 20% to the top flange, 30% to the bottom flange and 15% to the bottom 4 inches of the web between Stringer S1 and S4 (Photo 16). The right end begin side bearing stiffener has 100% section loss to the bottom 4 inches of the plate (Photo 17).

Floorbeam 2: The top flange has up to 35% section loss between Stringers S3 and S4 (Photo 18).

Floorbeam 3: There is a 5 inch long area of 100% section loss to the top flange between Stringer S1 and S2 (Photo 19). The adjacent top flange areas are knife edged with up to 45% section loss. The bottom flange in this area has 10% section loss.

Floorbeam 4: There is up to 25% web section loss to an area approximately 1 ft wide by 8 inches high at the right end adjacent to the bearing stiffener. The right end begin side bearing stiffener has several small perforations ranging up to a ½ inch diameter and up to 50% section loss in the surrounding area at the bottom 7 inches (Photo 20).

Floorbeam 5: The top flange has up to 35% section loss and the bottom flange has up to15% section loss between Stringers S1 and S4 (Photo 21). There is approximately 15% bottom flange section loss around the right end U-bolt connection (Photo 22). The right end, end side bearing plate has a few small perforations up to ½ inch diameter at the bottom 3 ½ inches with up to 50% section loss in the surrounding areas (Photo 23).

Floorbeam 6: There is up to 50% top flange section loss and 20% bottom flange section loss at midspan between Stringers S3 and S4 (Photo 24). The remainder of the bottom flange between Stringer S1 and S4 has approximately 5% section loss.

Floorbeam 7: The top flange is knife edged between Stringer S3 and S4 and up to 40% section loss between Stringer S1 and S3 (Photo 25). The bottom flange has up to 10% section loss and the web has up to 5% section loss at the bottom 4 inches at midspan. There is also a 1 inch diameter perforation in the web about 1 inch above the bottom flange between Stringer S3 and S4 (Photo 25). The U-bolt at the left end connection is missing and a choker cable has been installed as a temporary repair (Photo 26). Temporary repairs are not considered in the assessment; therefore, this condition

rates CS-4. The left end of the floorbeam is detached from the truss and is approximately 7/8 inch lower than the right end.

Floorbeam 8: The top flange has up to 20% section loss between Stringer S2 and S3 (Photo 27).

Refer to the inspection sketches for section losses.

157 – Other Floor Beam - 515 – Steel Protective Coating

Total Quantity (SF)	CS-1	CS-2	CS-3	CS-4	CS-5
603	0	392	120	91	0

Common Notes:

The paint system has failed and provides no protection along the top and bottom flanges and up to 9 inches high along the bottom of the web between Stringer S1 and S4 on floorbeams 1, 3, 4, 5, 6, 7 & 8. Floorbeam 1 is worst case with the failed protection system 6 to 9 inches on the web (Photo 16). These areas rate CS-4.

The paint system is bubbling and/or has flakes less than ½ inch diameter generally along the webs of floorbeams between Stringer S1 and S4 (Photo 21, 24, 25, 26 & 27). The paint system provides limited protection in these areas and rates CS-3.

The remainder of the paint system appears dull or the finish coat is flaking and rates CS-2.

BA217 – Masonry Abutment

Total Quantity (LF)	CS-1	CS-2	CS-3	CS-4	CS-5
18	0	18	0	0	0

Condition State 2 Notes:

The begin (west) abutment is constructed of mortared laid up stone masonry. There are a few miscellaneous areas of slightly displaced stones; however, the abutment appears to be stable. The mortar is missing or loose over the entire surface of the abutment (Photo 28).

The concrete backwall appears to be in fair condition with moderate scaling.

The left and right wingwalls are monolithic with the begin masonry abutment. However, the wingwall quantity is not included in the abutment quantity. The wingwalls are of the similar construction and condition as the abutment.

The waterway opening at the bridge is slightly narrower than the upstream and downstream channel. There is no erosion protection at the abutment. There appears to be minor erosion of the

embankment at the abutment and the waterline is approximately 2 ft from the abutment (Photo 29). However, there is no undermining of the abutment.

EA217 – Masonry Abutment

Total Quantity (LF)	CS-1	CS-2	CS-3	CS-4	CS-5
18	0	13	5	0	0

Condition State 2 Notes:

The end (east) abutment is constructed of mortared laid up stone masonry; however, the bridge seat is reinforced concrete. The abutment appears to be stable. The mortar is weathered over the entire abutment and loose over approximately 10 percent of the surface area (Photo 30). However, the mortar remains generally intact.

The backwall is generally not exposed due to a build-up of debris on the abutment seat. However, in the exposed areas, the concrete backwall appears to be in fair condition with moderate scaling (Photo 32, 33 & 34).

The left and right wingwalls are monolithic with the begin masonry abutment. However, the wingwall quantity is not included in the abutment quantity. The wingwalls are of the similar construction and condition as the abutment.

The waterway opening at the bridge is slightly narrower than the upstream and downstream channel. There are a few large stones in front of the abutment which provide limited erosion protection. There does not appear to be any erosion of the embankment at the abutment, scour would rate CS-1.

Condition State 3 Notes:

The reinforced concrete bridge seat is spalled with exposed rebar at each end. The worst location is at the right (south) corner (Photo 31). The spall is approximately 3.0 ft wide by 2.0 ft high and up to 8 inches in depth on the front face of the abutment and wraps around the corner approximately 2.0 ft wide by 2.0 ft high and up to 4 inches deep. The exposed rebar has up to 5 percent section loss. The spalls on each corner extend to the end truss bearings; however, the bearings are not undermined.

BA220 – Pile Cap/Footing

EA220 – Pile Cap/Footing

Total Quantity (LF)	CS-1	CS-2	CS-3	CS-4	CS-5
18	0	0	0	0	18
18	0	0	0	0	18

Condition State 5 Notes:

The abutment footing is not exposed to view and therefore, not accessible.

BA306 – Other Joint

EA306 – Other Joint

Total Quantity (LF)	CS-1	CS-2	CS-3	CS-4	CS-5
12	0	0	0	12	0
12	0	0	0	12	0

Condition State 4 Notes:

The joint at each end of the bridge is covered with asphalt pavement and sealed with bituminous sealing material. The sealer is cracked the entire length of the joint and does not function as intended as evident by the damp debris on each abutment seat (Photo 32, 33 & 34).

BA311 – Moveable Bearing

EA311 – Moveable Bearing

Total Quantity (EA)	CS-1	CS-2	CS-3	CS-4	CS-5
6	0	0	0	6	0
6	0	0	0	6	0

Condition State 4 Notes:

The stringer bearings at the begin abutment are partially covered with damp debris (Photo 1) and the end abutment stringer bearings are completely covered with damp debris or hardened asphalt (Photo 32, 33 & 34), which is restricting proper movements. The bearings have up to 25 percent section loss on all surfaces. The anchor bolts are either missing or have heavy section loss at most bearings.

The end truss bearings are partially covered with damp debris (Photo 12) and the begin truss bearings are completely covered with damp debris (Photo 35), which appears to be restricting proper movements. The bearings have up to 10 percent section loss on all surfaces.

BA311 – Moveable Bearing - 515 – Steel Protective Coating

EA311 – Moveable Bearing – 515 – Steel Protective Coating

Total Quantity (SF)	CS-1	CS-2	CS-3	CS-4	CS-5
7	0	0	0	7	0
7	0	0	0	7	0

Condition State 4 Notes:

The protective coating on the bearings has completely failed and provides no protection of the underlying metal (Photo 12, 13 & 14).

330 – Metal Bridge Railing

Total Quantity (LF)	CS-1	CS-2	CS-3	CS-4	CS-5
255	0	0	0	0	255

Condition State 5 Notes:

This item was not included in the in-depth inspection as it will be replaced as part of an upcoming rehabilitation project. It is noted in this report for completeness.

Non-Structural Condition Observations:

A 4 inch gas main runs along the south side of the bridge. The supports to the gas main are attached to each floorbeam. The gas main and its supports appear to be intact and in good condition.

There are two luminaires fed by EMT conduit on the bridge. The luminaires are hung from the top lateral bracing between the trusses at panel point U2 and U7. The luminaire shade at panel point U7 (east end of the bridge) is damaged/missing.

Federal National Bridge Inventory (NBI) Ratings

In order to supply the Federal Highway Administration (FHWA) with required bridge condition information, it is necessary to collect data in the field using the Federal Rating Scale. The FHWA Bridge Inspector's Reference Manual and Recording and Coding Guide for Structure Inventory and Appraisal of the Nation's Bridges were used to determine the Federal Ratings for the bridge. Five (5) items including the deck, superstructure, substructure, channel and channel protection, and culvert is rated in the Federal system. The NBI rating is based on the following condition descriptions:

Code	Description
N	**Not Applicable**
9	**Excellent Condition**
8	**Very Good Condition** – no problems noted.
7	**Good Condition** – some minor problems.
6	**Satisfactory Condition** – structural elements show some minor deterioration.
5	**Fair Condition** – all primary structural elements are sound, but may have minor section loss, cracking, spalling or scour.
4	**Poor Condition** – advanced section loss, deterioration, spalling or scour.
3	**Serious Condition** – loss of section, deterioration, spalling, or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
2	**Critical Condition** – 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.
1	**Imminent Failure Condition** – major deterioration or section loss present in critical structural components, or obvious vertical or horizontal movement effecting structural stability. Bridge is closed to traffic, but corrective action may put the bridge back in light service.
0	**Failed Condition** – out of service beyond corrective action.

The NBI ratings for the Hotel Bridge are as follows:

NBI Deck Condition: 3

NBI Superstructure Condition: 1

NBI Substructure Condition: 5

NBI Channel Condition: 6

NBI Culvert Condition: N

Inspection Photographs

Photo 1: Panel 1Stringers Looking West

Photo 2: Panel 3, Stringer S1 at FB3 Looking South

Photo 3: FB3 Left End, Begin Side Looking East

Photo 4: Panel 5 Stringers S1 – S3 Looking North

Photo 5: Panel 5 Stringer S4 Looking Northeast

Photo 6: Panel 6 Stringer S1 & S2 Near End Looking East

Photo 7: Panel 7 Stringer S4 Right Side Looking Northeast

Photo 8: Panel 8 Stringer S1 Left Side Near FB7 Looking Southwest

Photo 9: Panel 8 Stringer S1 Left Side Near FB8 Looking South

Photo 10: Right Truss, Panel Point U7 Looking Southwest

Photo 11: Right Truss Vertical L4U4 Looking Southeast

Photo 12: Right Truss Bearing at End Abutment Looking Southeast

Photo 13: Right Truss Bearing at Begin Abutment Looking West

Photo 14: Left Truss Bearing at End Abutment Looking East

Photo 15: Right Truss Diagonal L3U2 Looking South

Photo 16: FB1 Begin Side Looking Southeast

Photo 17: FB1 Right End Begin Bearing Stiffener Looking South

Photo 18: FB2 End Side Looking West

Photo 19: FB3 at Stringer S1 Looking West

Photo 20: FB4 Right End, Begin Side Bearing Stiffener Looking South

Photo 21: FB5 Begin Side Between Stringer S1 & S4 Looking East

Photo 22: FB5 Right End Bottom Flange at U-Bolt Connection Looking East

Photo 23: FB5 Right End, End Side Bearing Stiffener Looking Northwest

Photo 24: FB6 End Side Between Stringer S1 & S4 Looking West

Photo 25: FB7 Begin Side Between Stringer S1 & S4 Looking East

Photo 26: FB7 Left End , End Side Looking Northwest

Photo 27: FB8 End Side Looking West

Photo 28: Begin Abutment Looking Southwest

Photo 29: Begin Abutment Looking West

Photo: 30: End Abutment Looking East

Photo 31: End Abutment Right Corner Looking Northeast

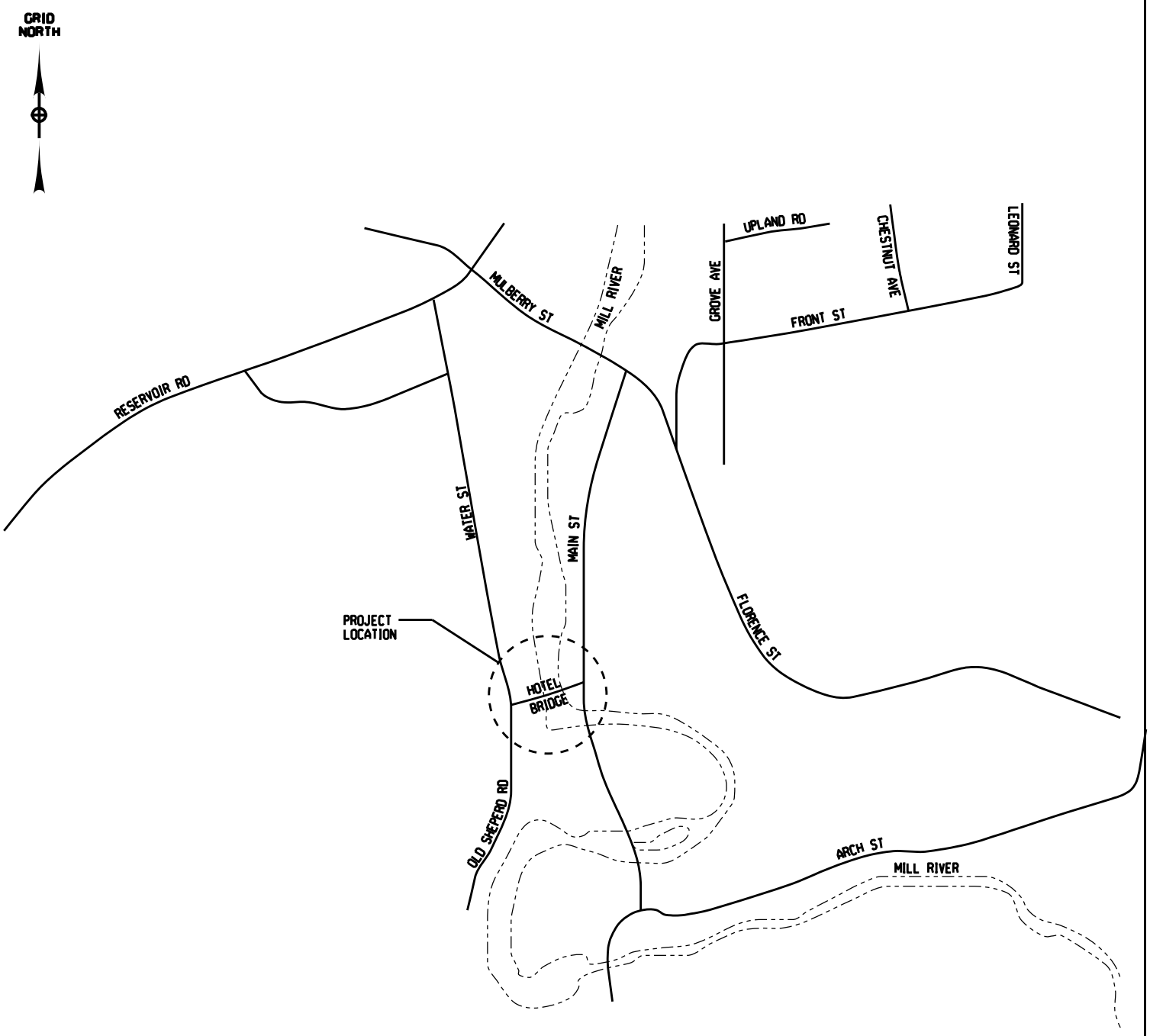
Photo 32: Stringer S1 Bearing at End Abutment Looking Northeast

Photo 33: End Abutment Seat Between Stringer S2 & S3 Looking East

Photo 34: Stringer S4 Bearing at End Abutment Looking Southeast

Photo 35: Right Truss Bearing at Begin Abutment Looking North

Inspection Sketches



LOCATION MAP
SCALE: NONE

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HOTEL BRIDGE (BRIDGE NO. N19-27)
OLD SHEPHERD ROAD OVER MILL RIVER
NORTHHAMPTON, MASSACHUSETTES

LOCATION PLAN

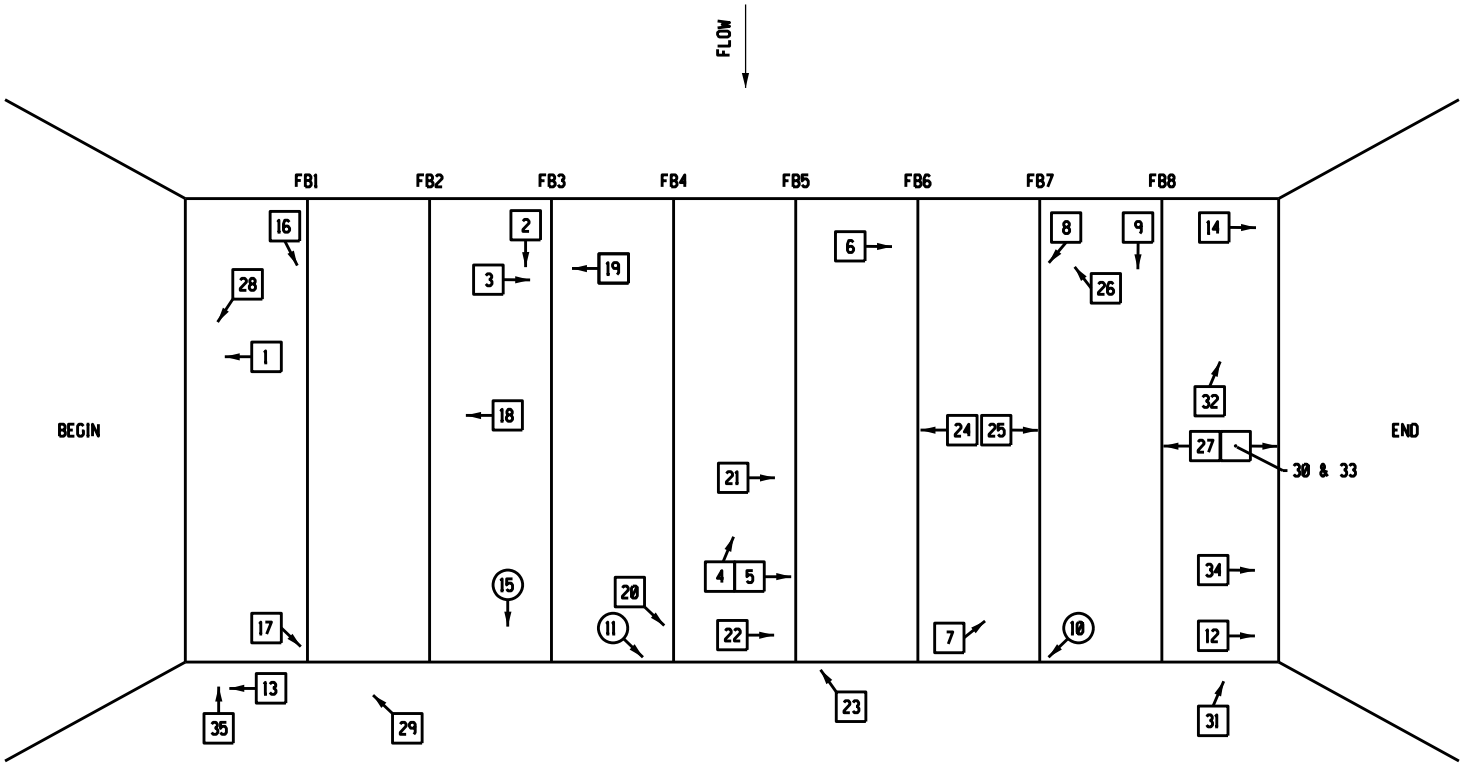
JOB NO.	SCALE:	DATE:	FIGURE NO.
MAX2019214.00	NO SCALE	XX/XX/2022	LOC - 1

GRID NORTH

BRIDGE NUMBER: N19-27

FEATURE CARRIED: OLD SHEPHERD RD.

FEATURE CROSSED: OLD MILL RIVER

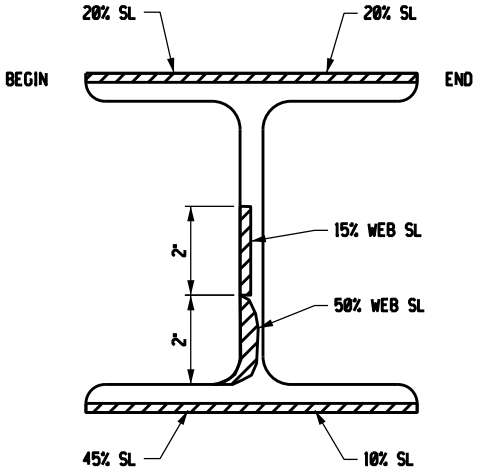


LEGEND

(X) PHOTO ABOVE DECK

[X] → PHOTO BELOW DECK

GPI GREENMAN-PEDERSEN, INC. CONSULTING ENGINEERS 181 BALLARDVALE STREET, SUITE 202 WILMINGTON, MA 01887	HOTEL BRIDGE (BRIDGE NO. N19-27) OLD SHEPHERD ROAD OVER MILL RIVER NORTHHAMPTON, MASSACHUSETTES			
	PHOTO LOCATION PLAN			
	JOB NO. MAX2019214.00	SCALE: NO SCALE	DATE: XX/XX/2022	FIGURE NO. PHOTO - 1



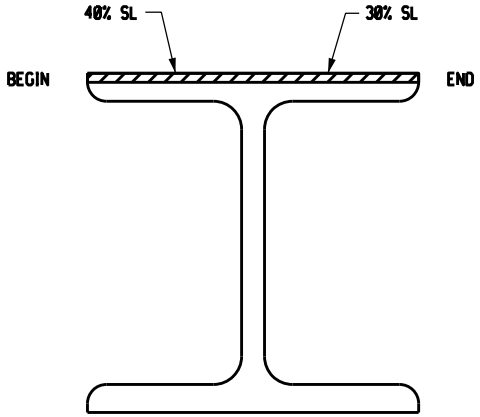
WROUGHT IRON
FLOORBEAM
PROPERTIES:

d = 12.125 in.
b = 9.750 in.
tw = 0.438 in.
tf_avg = 0.625 in.
A = 16.96 sq. in.

OVERALL SL.

TOP FLANGE = 20%
BOTTOM FLANGE = 30%
WEB = 10%

SKETCH #1:
FLOORBEAM 1 @ MIDSPAN



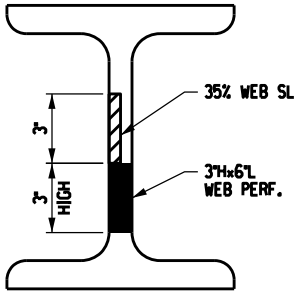
WROUGHT IRON
FLOORBEAM
PROPERTIES:

d = 12.125 in.
b = 9.750 in.
tw = 0.438 in.
tf_avg = 0.625 in.
A = 16.96 sq. in.

OVERALL SL.

TOP FLANGE = 35%

SKETCH #2:
FLOORBEAM 2 BETWEEN S3 & S4



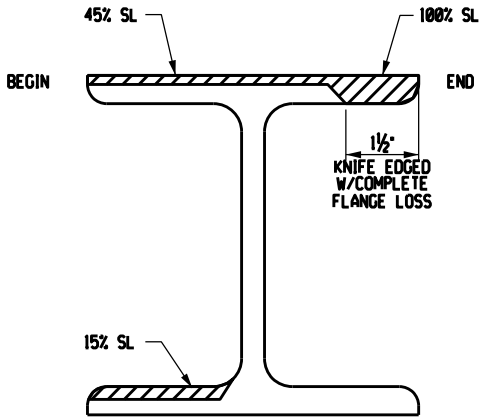
WROUGHT IRON
STRINGER
PROPERTIES:

d = 10.125 in.
b = 4.500 in.
tw = 0.375 in.
tf_avg = 0.438 in.
A = 7.22 sq. in.

OVERALL SL.

WEB = 40%

SKETCH #3:
STRINGER 1 @ BEGIN SIDE OF FB3



WROUGHT IRON
FLOORBEAM
PROPERTIES:

d = 12.125 in.
b = 9.750 in.
tw = 0.438 in.
tf_avg = 0.625 in.
A = 16.96 sq. in.

OVERALL SL.

TOP FLANGE = 55%
BOTTOM FLANGE = 10%

SKETCH #4:
FLOORBEAM 3 BETWEEN S1 & S2

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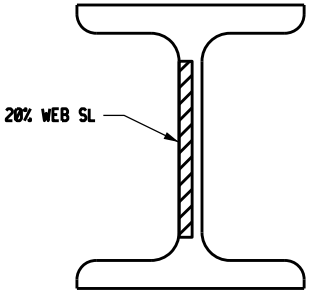
OLD SHEPHERD ROAD OVER MILL RIVER
NORTHHAMPTON, MASSACHUSETTES

FLOORBEAM & STRINGER SECTION LOSS

JOB NO.	SCALE:	DATE:	FIGURE NO.
MAX2019214.00	NO SCALE	XX/XX/2022	SL-1



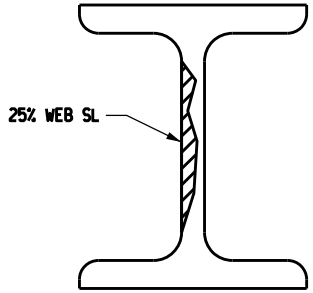
WROUGHT IRON
STRINGER
PROPERTIES:

d = 10.125
b = 4.500 in.
tw = 0.375 in.
tf_avg = 0.438 in.
A = 7.22 sq. in.

OVERALL SL.

WEB = 20%

SKETCH #5:
STRINGER 4 @ BEGIN SIDE OF FB3



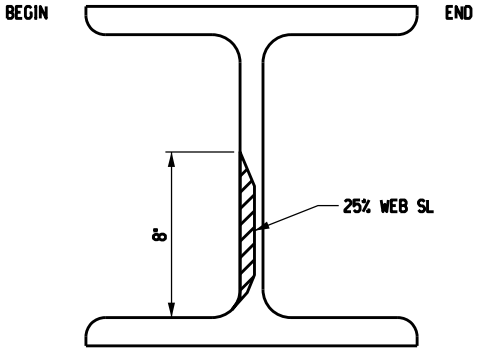
WROUGHT IRON
STRINGER
PROPERTIES:

d = 10.125 in.
b = 4.500 in.
tw = 0.375 in.
tf_avg = 0.438 in.
A = 7.22 sq. in.

OVERALL SL.

WEB = 25%

SKETCH #6:
STRINGER 1 @ END SIDE OF FB3



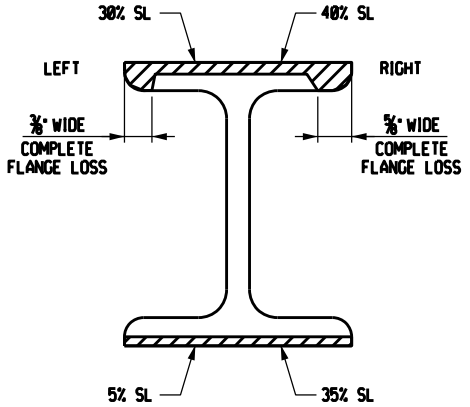
WROUGHT IRON
FLOORBEAM
PROPERTIES:

d = 12.125 in.
b = 9.750 in.
tw = 0.438 in.
tf_avg = 0.625 in.
A = 16.96 sq. in.

OVERALL SL.

WEB = 20%

SKETCH #7:
FLOORBEAM 4 @ RIGHT TRUSS



WROUGHT IRON
STRINGER
PROPERTIES:

d = 10.125 in.
b = 4.500 in.
tw = 0.375 in.
tf_avg = 0.438 in.
A = 7.22 sq. in.

OVERALL SL.

TOP FLANGE = 35%
BOTTOM FLANGE = 20%

SKETCH #8:
STRINGER 4 @ MIDSPAN B/T FB4 & FB5
(STRINGER 1, 2 & 3 SIMILAR)

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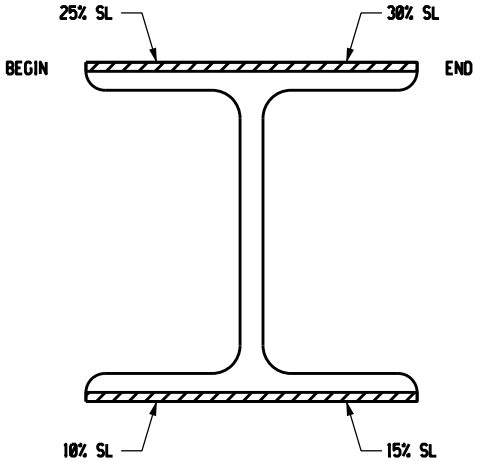
HOTEL BRIDGE (BRIDGE NO. N19-27)
OLD SHEPHERD ROAD OVER MILL RIVER
NORTHHAMPTON, MASSACHUSETTES

FLOORBEAM & STRINGER SECTION LOSS

JOB NO.	SCALE:	DATE:	FIGURE NO.
MAX2019214.00	NO SCALE	XX/XX/2022	SL-2



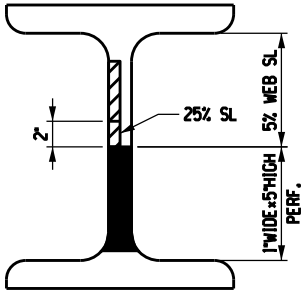
WROUGHT IRON
FLOORBEAM
PROPERTIES:

d = 12.125 in.
b = 9.750 in.
tw = 0.438 in.
tf_avg = 0.625 in.
A = 16.96 sq. in.

OVERALL SL.

TOP FLANGE = 30%
BOTTOM FLANGE = 15%

SKETCH #9:
FLOORBEAM 5 @ MIDSPAN



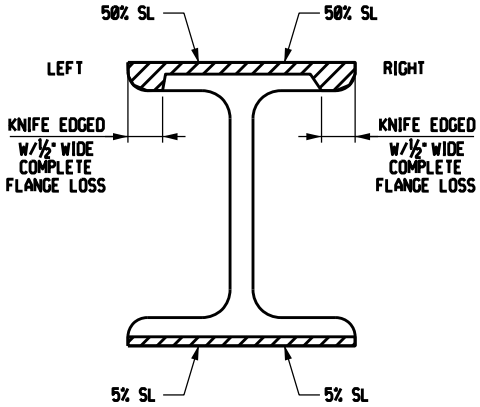
WROUGHT IRON
STRINGER
PROPERTIES:

d = 10.125 in.
b = 4.500 in.
tw = 0.375 in.
tf_avg = 0.438 in.
A = 7.22 sq. in.

OVERALL SL.

WEB = 60%

SKETCH #10:
STRINGER 4 @ BEGIN SIDE OF FB5



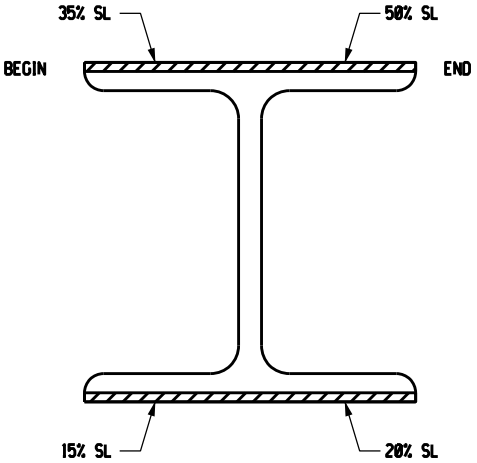
WROUGHT IRON
STRINGER
PROPERTIES:

d = 10.125 in.
b = 4.500 in.
tw = 0.375 in.
tf_avg = 0.438 in.
A = 7.22 sq. in.

OVERALL SL.

TOP FLANGE = 50%
BOTTOM FLANGE = 5%

SKETCH #11:
STRINGER 2 @ MIDSPAN B/T FB5 & FB6
(STRINGER 1, 3 & 4 SIMILAR)



WROUGHT IRON
FLOORBEAM
PROPERTIES:

d = 12.125 in.
b = 9.750 in.
tw = 0.438 in.
tf_avg = 0.625 in.
A = 16.96 sq. in.

OVERALL SL.

TOP FLANGE = 45%
BOTTOM FLANGE = 20%

SKETCH #12:
FLOORBEAM 6 @ S3

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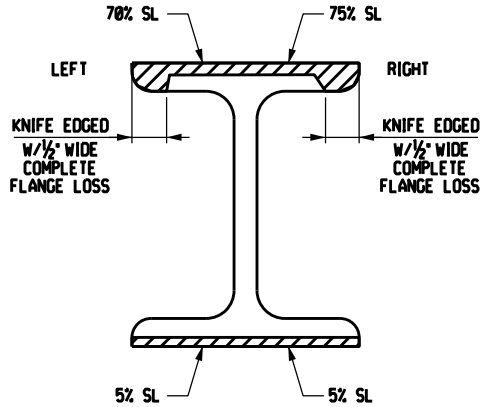
HOTEL BRIDGE (BRIDGE NO. N19-27)
OLD SHEPHERD ROAD OVER MILL RIVER
NORTHHAMPTON, MASSACHUSETTES

FLOORBEAM & STRINGER SECTION LOSS

JOB NO.	SCALE:	DATE:	FIGURE NO.
MAX2019214.00	NO SCALE	XX/XX/2022	SL-3



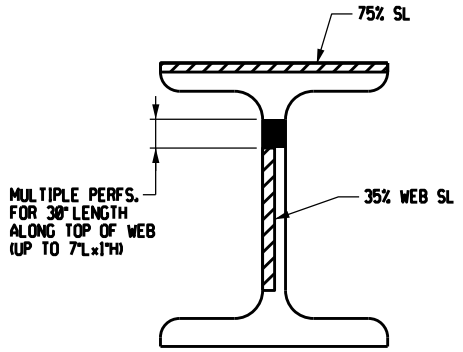
WROUGHT IRON
STRINGER
PROPERTIES:

d = 10.125 in.
b = 4.500 in.
tw = 0.375 in.
tf_avg = 0.438 in.
A = 7.22 sq. in.

OVERALL SL.

TOP FLANGE = 80%
BOTTOM FLANGE = 5%

SKETCH #13:
STRINGER 4 @ MIDSPAN B/T FB6 & FB7
(STRINGER 1 SIMILAR)



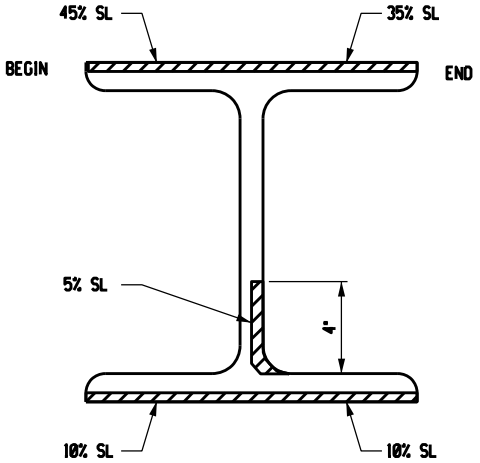
WROUGHT IRON
STRINGER
PROPERTIES:

d = 10.125 in.
b = 4.500 in.
tw = 0.375 in.
tf_avg = 0.438 in.
A = 7.22 sq. in.

OVERALL SL.

TOP FLANGE = 75%
WEB = 40%

SKETCH #14:
STRINGER 1 @ BEGIN SIDE OF FB7



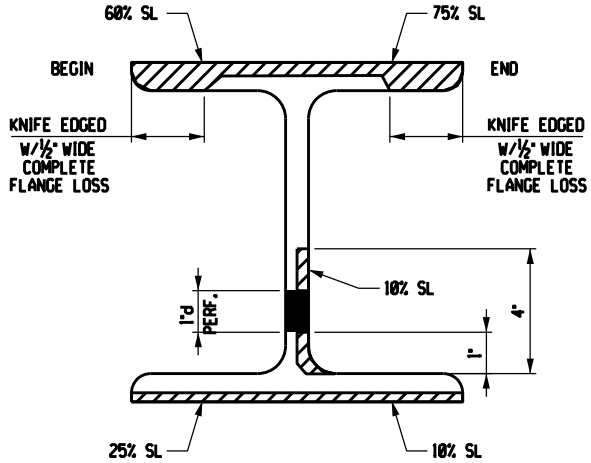
WROUGHT IRON
FLOORBEAM
PROPERTIES:

d = 12.125 in.
b = 9.750 in.
tw = 0.438 in.
tf_avg = 0.625 in.
A = 16.96 sq. in.

OVERALL SL.

TOP FLANGE = 40%
BOTTOM FLANGE = 10%
WEB = < 5%

SKETCH #15:
FLOORBEAM 7 @ MIDSPAN



WROUGHT IRON
FLOORBEAM
PROPERTIES:

d = 12.125 in.
b = 9.750 in.
tw = 0.438 in.
tf_avg = 0.625 in.
A = 16.96 sq. in.

OVERALL SL.

TOP FLANGE = 70%
BOTTOM FLANGE = 20%
WEB = 10%

SKETCH #16:
FLOORBEAM 7 BETWEEN S3 & S4

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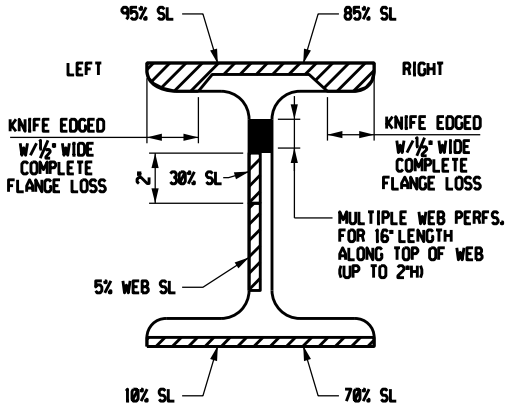
OLD SHEPHERD ROAD OVER MILL RIVER
NORTHHAMPTON, MASSACHUSETTES

FLOORBEAM & STRINGER SECTION LOSS

JOB NO.	SCALE:	DATE:	FIGURE NO.
MAX2019214.00	NO SCALE	XX/XX/2022	SL-4



WROUGHT IRON STRINGER PROPERTIES:

d = 10.125 in.
b = 4.500 in.
tw = 0.375 in.
tf_avg = 0.438 in.
A = 7.22 sq. in.

OVERALL SL.

TOP FLANGE = 90%
BOTTOM FLANGE = 15%
WEB = 30%

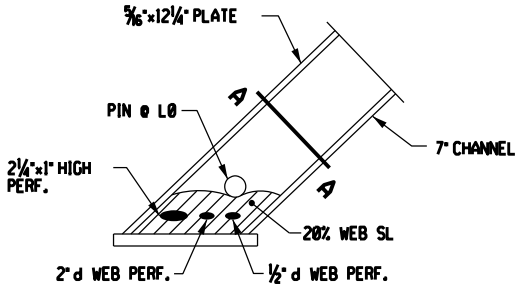
SKETCH #17:
STRINGER 1 @ MIDSPAN B/T FB7 & FB8

7" CHANNEL PROPERTIES:

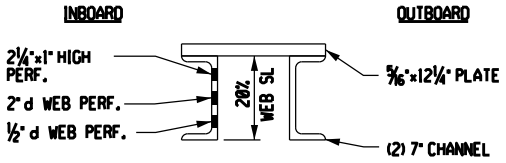
d = 7.000 in.
b = 2.000 in.
tw = 0.250 in.
tf_avg = 0.313 in.

OVERALL SL.

INBOARD WEB = 80%
INBOARD CHANNEL = 45%
TOTAL MEMBER = 15"



ELEVATION
(LOOKING NORTH, INBOARD CHANNEL)



SECTION A-A

SKETCH A
LEFT TRUSS MEMBER L0-U1 AT L0

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OLD SHEPHERD ROAD OVER MILL RIVER
NORTHHAMPTON, MASSACHUSETTES

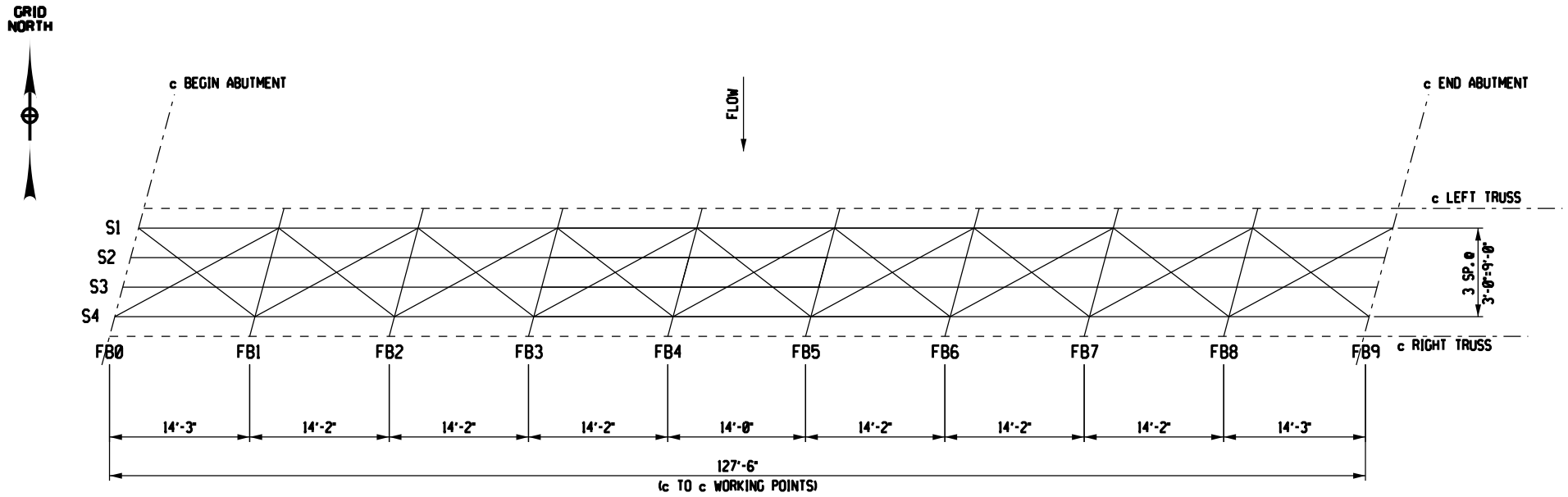
FLOORBEAM & STRINGER SECTION LOSS

JOB NO.	SCALE:	DATE:	FIGURE NO.
MAX2019214.00	NO SCALE	XX/XX/2022	SL-5

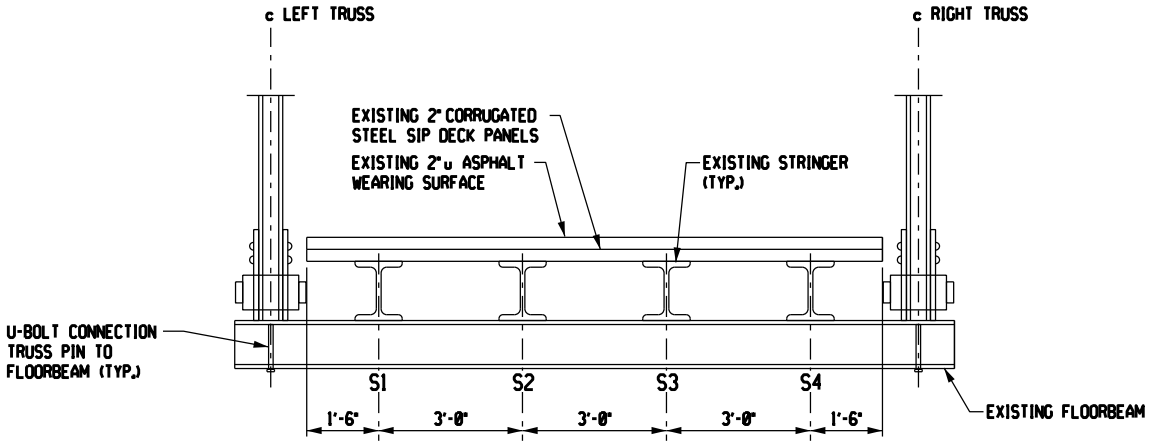
Appendices

Appendix A

Bridge Drawings



FRAMING PLAN



TYPICAL SECTION (LOOKING EAST)

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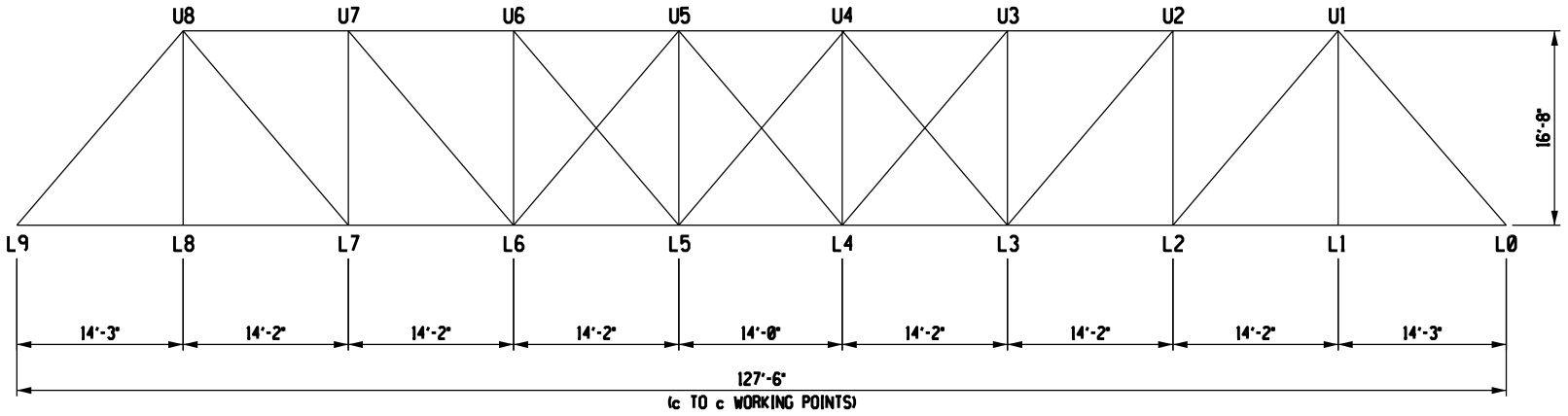
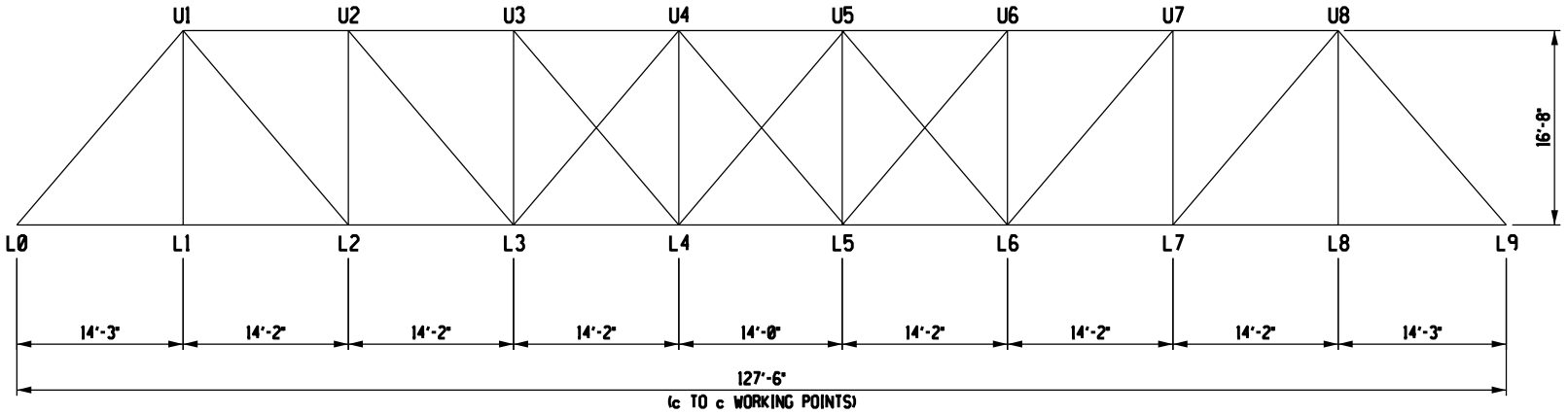
OLD SHEPHERD ROAD OVER MILL RIVER
NORTHHAMPTON, MASSACHUSETTES

FRAMING PLAN AND SECTION

JOB NO.	SCALE:	DATE:	FIGURE NO.
MAX2019214.00	NO SCALE	XX/XX/2022	ST-1



LEFT TRUSS ELEVATION
(LOOKING SOUTH)



RIGHT TRUSS ELEVATION
(LOOKING NORTH)

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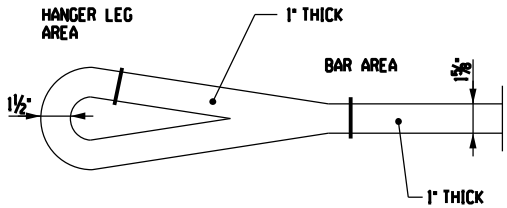
OLD SHEPHERD ROAD OVER MILL RIVER
NORTHHAMPTON, MASSACHUSETTES

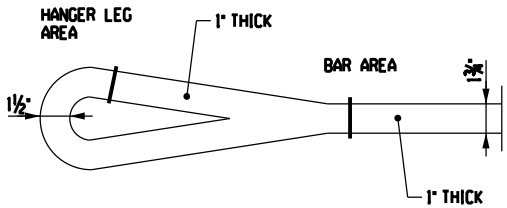
TRUSS ELEVATIONS

JOB NO.	SCALE:	DATE:	FIGURE NO.
MAX2019214.00	NO SCALE	XX/XX/2022	ST-2



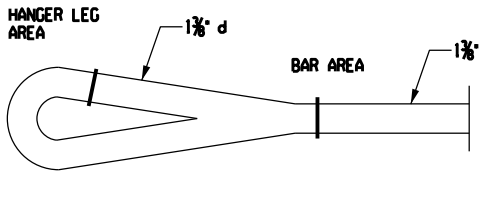
AS BUILT CROSS SETIONAL AREA:
BAR AREA = 1.625"x1.000"=1.625 in.q
HANGER LEG AREA = 1.500"x1.000"=1.500 in.q

TYPE "A"



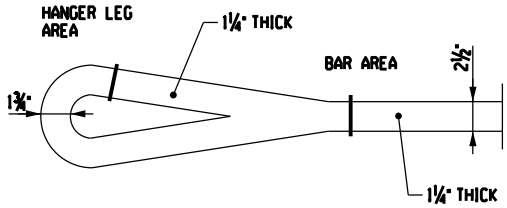
AS BUILT CROSS SETIONAL AREA:
BAR AREA = 1.750"x1.000"=1.750 in.q
HANGER LEG AREA = 1.500"x1.000"=1.500 in.q

TYPE "B"



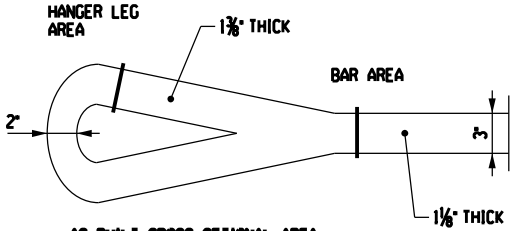
AS BUILT CROSS SETIONAL AREA:
BAR AREA = (3.142x1.375"x1.375")/4=1.485 in.q
HANGER LEG AREA = (3.142x1.375"x1.375")/4=1.485 in.q

TYPE "C"



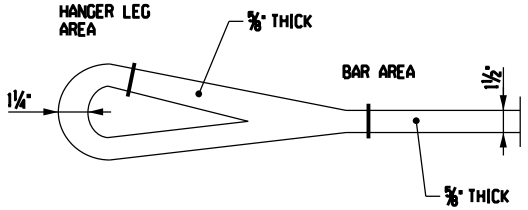
AS BUILT CROSS SETIONAL AREA:
BAR AREA = 2.500"x1.250"=3.125 in.q
HANGER LEG AREA = 1.750"x1.250"=2.188 in.q

TYPE "D"



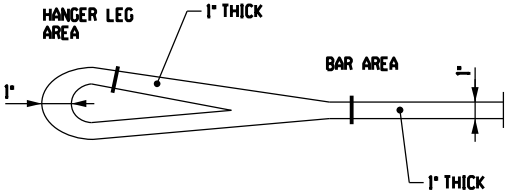
AS BUILT CROSS SETIONAL AREA:
BAR AREA = 3.000"x1.125"=3.375 in.q
HANGER LEG AREA = 2.000"x1.375"=2.75 in.q

TYPE "E"



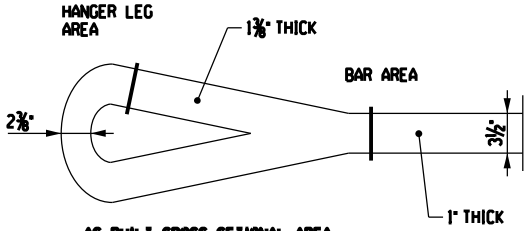
AS BUILT CROSS SETIONAL AREA:
BAR AREA = 1.500"x0.625"=0.9375 in.q
HANGER LEG AREA = 1.250"x0.625"=0.781 in.q

TYPE "F"



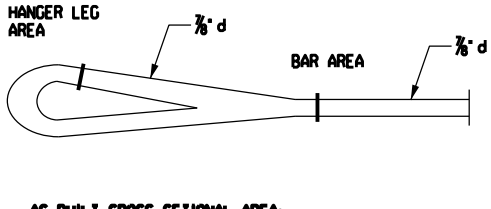
AS BUILT CROSS SETIONAL AREA:
BAR AREA = 1.000"x1.000"=1.000 in.q
HANGER LEG AREA = 1.000"x1.000"=1.000 in.q

TYPE "G"



AS BUILT CROSS SETIONAL AREA:
BAR AREA = 3.500"x1.000"=3.500 in.q
HANGER LEG AREA = 2.375"x1.375"=3.265 in.q

TYPE "H"



AS BUILT CROSS SETIONAL AREA:
BAR AREA = (3.142x0.875"x0.875")/4=0.601 in.q
HANGER LEG AREA = (3.142x0.875"x0.875")/4=0.601 in.q

TYPE "I"

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HOTEL BRIDGE (BRIDGE NO. N19-27)
OLD SHEPHERD ROAD OVER MILL RIVER
NORTHHAMPTON, MASSACHUSETTES

AS-BUILT EYE BAR DIMENSIONS

JOB NO.	SCALE:	DATE:	FIGURE NO.
MAX2019214.00	NO SCALE	XX/XX/2022	ST-3

EYE BAR TYPE

TRUSS	PANEL POINT	MEMBER	EYE BAR SECTION TYPE
LEFT	L0	L0-U1	TOP CHORD
LEFT	L0	L0-L2 (INBOARD)	A
LEFT	L0	L0-L2 (OUTBOARD)	A
LEFT	L1	L1-U1	C
LEFT	L2	L0-L2 (INBOARD)	A
LEFT	L2	L0-L2 (OUTBOARD)	A
LEFT	L2	L2-U1 (INBOARD)	B
LEFT	L2	L2-U1 (OUTBOARD)	B
LEFT	L2	L2-L3 (INBOARD)	D
LEFT	L2	L2-L3 (OUTBOARD)	D
LEFT	L3	L2-L3 (INBOARD)	D
LEFT	L3	L2-L3 (OUTBOARD)	D
LEFT	L3	L3-U2 (INBOARD)	B
LEFT	L3	L3-U2 (OUTBOARD)	B
LEFT	L3	L3-U4	I
LEFT	L3	L3-L4 (INBOARD)	E
LEFT	L3	L3-L4 (OUTBOARD)	E
LEFT	L4	L3-L4 (INBOARD)	E
LEFT	L4	L3-L4 (OUTBOARD)	E
LEFT	L4	L4-U3 (INBOARD)	F
LEFT	L4	L4-U3 (OUTBOARD)	F
LEFT	L4	L4-U5	G
LEFT	L4	L4-L5 (INBOARD)	H
LEFT	L4	L4-L5 (OUTBOARD)	H
LEFT	L5	L4-L5 (INBOARD)	H
LEFT	L5	L4-L5 (OUTBOARD)	H
LEFT	L5	L5-U4	G
LEFT	L5	L5-U6 (INBOARD)	F
LEFT	L5	L5-U6 (OUTBOARD)	F
LEFT	L5	L5-L6 (INBOARD)	E
LEFT	L5	L5-L6 (OUTBOARD)	E
LEFT	L6	L5-L6 (INBOARD)	E
LEFT	L6	L5-L6 (OUTBOARD)	E
LEFT	L6	L6-U5	I
LEFT	L6	L6-U7 (INBOARD)	B
LEFT	L6	L6-U7 (OUTBOARD)	B
LEFT	L6	L6-L7 (INBOARD)	D
LEFT	L6	L6-L7 (OUTBOARD)	D
LEFT	L7	L6-L7 (INBOARD)	D
LEFT	L7	L6-L7 (OUTBOARD)	D
LEFT	L7	L7-U8 (INBOARD)	B
LEFT	L7	L7-U8 (OUTBOARD)	B
LEFT	L7	L7-L9 (INBOARD)	A
LEFT	L7	L7-L9 (OUTBOARD)	A
LEFT	L8	L8-U8	C
LEFT	L9	L7-L9 (INBOARD)	A
LEFT	L9	L7-L9 (OUTBOARD)	A
LEFT	L9	L9-U8	TOP CHORD

EYE BAR TYPE

TRUSS	PANEL POINT	MEMBER	EYE BAR SECTION TYPE
RIGHT	L0	L0-U1	TOP CHORD
RIGHT	L0	L0-L2 (INBOARD)	A
RIGHT	L0	L0-L2 (OUTBOARD)	A
RIGHT	L1	L1-U1	C
RIGHT	L2	L0-L2 (INBOARD)	A
RIGHT	L2	L0-L2 (OUTBOARD)	A
RIGHT	L2	L2-U1 (INBOARD)	B
RIGHT	L2	L2-U1 (OUTBOARD)	B
RIGHT	L2	L2-L3 (INBOARD)	D
RIGHT	L2	L2-L3 (OUTBOARD)	D
RIGHT	L3	L2-L3 (INBOARD)	D
RIGHT	L3	L2-L3 (OUTBOARD)	D
RIGHT	L3	L3-U2 (INBOARD)	B
RIGHT	L3	L3-U2 (OUTBOARD)	B
RIGHT	L3	L3-U4	I
RIGHT	L3	L3-L4 (INBOARD)	E
RIGHT	L3	L3-L4 (OUTBOARD)	E
RIGHT	L4	L3-L4 (INBOARD)	E
RIGHT	L4	L3-L4 (OUTBOARD)	E
RIGHT	L4	L4-U3 (INBOARD)	F
RIGHT	L4	L4-U3 (OUTBOARD)	F
RIGHT	L4	L4-U5	G
RIGHT	L4	L4-L5 (INBOARD)	H
RIGHT	L4	L4-L5 (OUTBOARD)	H
RIGHT	L5	L4-L5 (INBOARD)	H
RIGHT	L5	L4-L5 (OUTBOARD)	H
RIGHT	L5	L5-U4	G
RIGHT	L5	L5-U6 (INBOARD)	F
RIGHT	L5	L5-U6 (OUTBOARD)	F
RIGHT	L5	L5-L6 (INBOARD)	E
RIGHT	L5	L5-L6 (OUTBOARD)	E
RIGHT	L6	L5-L6 (INBOARD)	E
RIGHT	L6	L5-L6 (OUTBOARD)	E
RIGHT	L6	L6-U5	I
RIGHT	L6	L6-U7 (INBOARD)	B
RIGHT	L6	L6-U7 (OUTBOARD)	B
RIGHT	L6	L6-L7 (INBOARD)	D
RIGHT	L6	L6-L7 (OUTBOARD)	D
RIGHT	L7	L6-L7 (INBOARD)	D
RIGHT	L7	L6-L7 (OUTBOARD)	D
RIGHT	L7	L7-U8 (INBOARD)	B
RIGHT	L7	L7-U8 (OUTBOARD)	B
RIGHT	L7	L7-L9 (INBOARD)	A
RIGHT	L7	L7-L9 (OUTBOARD)	A
RIGHT	L8	L8-U8	C
RIGHT	L9	L7-L9 (INBOARD)	A
RIGHT	L9	L7-L9 (OUTBOARD)	A
RIGHT	L9	L9-U8	TOP CHORD

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HOTEL BRIDGE (BRIDGE NO. N19-27)
OLD SHEPHERD ROAD OVER MILL RIVER
NORTHHAMPTON, MASSACHUSETTES

EYE BAR TYPES

JOB NO.	SCALE:	DATE:	FIGURE NO.
MAX2019214.00	NO SCALE	XX/XX/2022	ST-4

Appendix B

Quantity Calculations

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Made By ELA Checked By Z. McGrath Date 5/26/22 Job No. MAX-2021214.00

(DESIGN ASSUMPTIONS, IF ANY, LISTED BELOW) Sheet 1 of

DETERMINE ELEMENT QUANTITIES

STRINGERS (ELEMENT 118)

4 CONTINUOUS STRINGERS OVER 9 PANELS

LENGTH = (2)(14.25') + (6)(14.17') + 14.00' = 127.52'

TOTAL LENGTH = 4(127.52') = 510.08'

SAY 510.0 LF

STRINGER PROTECTIVE COATING (ELEMENT 515)

d = 10.125" b_f = 4.500" t_w = 0.375"

SURFACE AREA = $\left[2(10.125") + 1(4.500") + 2(4.500" - 0.375")\right]/12 * 127.52' = 350.7$ SF

1 ASSUME TOP OF TF NOT PAINTED

SUB TOTAL STRINGER SURFACE AREA = 4(350.7 SF) = 1402.7 SF

ADD 5% FOR CONN PLATES = 70.1 SF

TOTAL = 1472.8 SF

SAY 1473 SF

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(DESIGN ASSUMPTIONS, IF ANY, LISTED BELOW) Sheet 2 of

FLOORBEAMS (ELEMENT 157)

8 FLOORBEAMS

FLOORBEAM LENGTH = 2 (1.5') + 3(3.0') + 2(1.25') = 14.5'

TOTAL QUANTITY = 8(14.5') = 116 LF

FLOORBEAM PROTECTIVE COATING (ELEMENT 515)

d = 12.125" b_f = 9.75" t_w = 0.438"

SURFACE AREA = [2(12.125") + 2(9.75") + 2(9.75" - 0.438")] / 12 * 14.5' = 75.37 SF

TOTAL QUANTITY = 8(75.37SF) = 602.95 SF

SAY 603 SF

GPI

Made By ELA Checked By Z. McGrath Date 5/26/22 Job No. MAX - 20212114.00

(DESIGN ASSUMPTIONS, IF ANY, LISTED BELOW) Sheet 3 of

BRIDGE DECK (ELEMENT 60 - OTHER DECK MATERIAL)

THIS ITEM WAS NOT INCLUDED IN THE IN-DEPTH INSPECTION AS IT WILL BE REPLACED AND WILL BE NOTED AS SUCH IN THE REPORT FOR COMPLETENESS.

DECK WIDTH = $2(1.25') + 3(3.0') = 11.5'$

DECK LENGTH = $127.5'$ (SEE STRINGER CALC)

SURFACE AREA = $11.5'(127.5') = 1466.25$ SF

SAY 1467 SF

BRIDGE RAIL (ELEMENT 330 - METAL BRIDGE RAIL)

THIS ITEM WAS NOT INCLUDED IN THE IN-DEPTH INSPECTION AS IT WILL BE REPLACED AND WILL BE NOTED AS SUCH IN THE REPORT FOR COMPLETENESS.

QUANTITY = $2(127.5') = 255$ LF

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(DESIGN ASSUMPTIONS, IF ANY, LISTED BELOW) Sheet 4 of

BEARINGS (ELEMENT 311 - MOVEABLE BEARINGS)

THERE IS ONE BEARING AT EACH STRINGER IN THE END PANELS AND ONE BEARING AT EACH TRUSS END

NUMBER OF BEARINGS = 4 + 4 + 2 + 2 = 12 EA

BEARING PROTECTIVE COATING (ELEMENT 515)

STRINGER BEARINGS ARE CONSIDERED SMALL IN SIZE → 1 SF

TRUSS BEARINGS ARE CONSIDERED MEDIUM IN SIZE → 1.5 SF

TOTAL QUANTITY = 8 (1 SF) + 4 (1.5 SF) = 14 SF

ABUTMENTS (ELEMENT 217 - ABUTMENT, MASONRY)

EAST ABUTMENT LENGTH = 14.5' + 1.5' + 1.5' = 17.5 LF

WEST ABUTMENT LENGTH = 14.5' + 1.5' + 1.5' = 17.5 LF

NOTE: WINGWALLS NOT INCLUDED IN QUANTITY.

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(DESIGN ASSUMPTIONS, IF ANY, LISTED BELOW) Sheet 5 of

TRUSSES (ELEMENT 136 - TRUSS, OTHER)

EACH TRUSS IS 127.5 LF

TOTAL QUANTITY IS 2(127.5 LF) = 255 LF

TRUSS PROTECTIVE COATING (ELEMENT 515)

TOP CHORD 12" WIDE PLATE w/ 2 - C7 & 6" TIE PLATE @ ± 40" OC II

LENGTH OF L0U1 & L5U8 = $[(14.25)^2 + (16.67')^2]^{\frac{1}{2}}$ = 21.93' SAY 22'

LENGTH OF TOP CHORD = 2(22') + 6(14.17') + 14.0' = 143.02' SAY 143.0'

TOP CHORD AREA = $\left[12.0" + (12.0 - 2"-2") + [2(7") + 3(2)] * 2\right]/12 * 143.0 * 2$ = 1430 SF

BOTTOM CHORD: [INCLUDES BOTH TRUSSES]

L0L1, L8L9 → $[2(1") + (2)(1.625")]/12 * 14.25' * 2 * 4$ = 49.9 SF

L1L2, L7L8 → $[2(1") + (2)(1.625")]/12 * 14.17' * 2 * 4$ = 49.6 SF

L2L3, L6L7 → $[2(1.25") + 2(2.5")]/12 * 14.17' * 2 * 4$ = 70.9 SF

L3L4, L5L6 → $[2(1.375") + 2(3.0")]/12 * 14.17' * 2 * 4$ = 80.3 SF

L4L5 → $[2(1") + 2(3.5")]/12 * 14.0' * 2 * 2$ = 42.0 SF

292.7 SF

VERTICALS: [INCLUDES BOTH TRUSSES]

L1U1, L8U8 → 1.375"Ø → $3.14159(1.375")/12 * 16.67' * 4$ = 24.0 SF

L2U2, L3U3, L6U6, L7U7 → $[2(4.5") + 4(4")]/12 * 16.67' * 8$ = 277.8 SF

L4U4, L5U5 → $[2(5") + 4(3")]/12 * 16.67' * 4$ = 122.2 SF

424.0 SF

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(DESIGN ASSUMPTIONS, IF ANY, LISTED BELOW) Sheet 6 of

DIAGONALS (SEE TOP CHORD CALC; INCLUDES BOTH TRUSSES)

L2U1, L7U8, L3U2, L6U7 → [2(1") + 2(1.75")]/12 * 22' * 2 * 8 = 161.3 SF

L3U4, L6U5 → 7/8" ϕ → 3.14159(0.875")/12 * 22' * 4 = 20.2 SF

L4U3, L5U6 → [2(0.625") + 2(1.5")]/12 * 22' * 2 * 4 = 62.3 SF

L4U5, L5U4 → [2(1.0") + 2(1.0")]/12 * 22' * 2 * 4 = 58.7 SF

302.5 SF

TRUSS PATTERNS CONTROL SUBTOTAL = 2449.2 SF

ADD 20% FOR PORTAL FRAME, SWAY BRACING & MISC PLATES = 489.8 SF

TOTAL = 2939.0

SAY 2940 SF

JOINTS (ELEMENT 306 - OTHER JOINT)

WIDTH OF DECK = 2(1.25') + 3(3.0') = 11.5' * 2 = 23.0' (EACH END OF BRIDGE)

Appendix C

Ultrasonic Test Reports

SkyTesting

ULTRASONIC EXAMINATION REPORT

CUSTOMER NAME: GPI NEI **JN:** **WO: 2022-0176S**

COMPONENT	SYSTEM	LOCATION
Hotel Bridge Page 1/8	Hotel Bridge	86 Water Street Leeds, MA

COMPONENT TYPE	SUB SYSTEM CODE	ORIENTATION
Pins/Bolts	N/A	Varies

MATERIAL:	TYPE	GEOMETRY	FABRICATION PROCESS
Carbon Steel	N/A	Pins/Bolts	Formed

SIZE/DIAMETER	THICKNESS	SURFACE CONDITION	SRR #
Varies	N/A	Brushed	N/A

NDE PROCEDURE #	TEMPERATURE	M&TE #	ACCEPTANCE CRITERIA
UT-001 Rev. 07	Ambient 72 Deg. F.	N/A	Customer Info No Cracks/Breaks

TRANSDUCER TYP.	SIZE	FREQUENCY	ANGLE	OTHER	CALIBRATION STD.
Round	3/8" & 1"	2.25 MHz	0	0	Step Wedge
INSTRUMENT	**MAKE**	**MODEL**	**COUPLANT**		IIW block
Olympus	Epoch	600	Ultragel II		

Ultrasonic longitudinal wave was performed on 44 pins/bolts looking for cracks or a broken pin/bolt. All were inspected from both sides except U-1-N-H, U-1-S-H, U-8-N-H & U-8-S-H. No cracks or breaks were found.

L-0-N

L-2-N

L-3-N

L-4-N

L-5-N

L-6-N

EVALUATION LOCATION	REPORT BELOW INDICATION AND PERTINENT INFORMATION SIZE	DESCRIPTION	ACTION/COMMENTS
L-0-N	N/A	Pin/Bolt	No cracks/breaks found
L-2-N	N/A	Pin/Bolt	No cracks/breaks found
L-3-N	N/A	Pin/Bolt	No cracks/breaks found
L-4-N	N/A	Pin/Bolt	No cracks/breaks found
L-5-N	N/A	Pin/Bolt	No cracks/breaks found
L-6-N	N/A	Pin/Bolt	No cracks/breaks found

OPERATOR	ORGANIZATION	LEVEL	DATE (mmddyy)
Randall Brooke	Sky Testing	II	05/24/2022

RESPONSIBLE CERTIFIED INDIVIDUAL	ORGANIZATION	LEVEL	DATE
	Sky Testing	II	05/24/2022

SkyTesting

ULTRASONIC EXAMINATION REPORT

CUSTOMER NAME: GPI NEI **JN:** **WO: 2022-0176S**

COMPONENT	SYSTEM	LOCATION
Hotel Bridge Page 2/8	Hotel Bridge	86 Water Street Leeds, MA

COMPONENT TYPE	SUB SYSTEM CODE	ORIENTATION
Pins/Bolts	N/A	Varies

MATERIAL:	TYPE	GEOMETRY	FABRICATION PROCESS
Carbon Steel	N/A	Pins/Bolts	Formed

SIZE/DIAMETER	THICKNESS	SURFACE CONDITION	SRR #
Varies	N/A	Brushed	N/A

NDE PROCEDURE #	TEMPERATURE	M&TE #	ACCEPTANCE CRITERIA
UT-001 Rev. 07	Ambient 72 Deg. F.	N/A	Customer Info No Cracks/Breaks

TRANSDUCER TYP.	SIZE	FREQUENCY	ANGLE	OTHER	CALIBRATION STD.
Round	3/8" & 1"	2.25 MHz	0	0	Step Wedge
INSTRUMENT	**MAKE**	**MODEL**	**COUPLANT**		IIW block
Olympus	Epoch	600	Ultragel II		

Ultrasonic longitudinal wave was performed on 44 pins/bolts looking for cracks or a broken pin/bolt. All were inspected from both sides except U-1-N-H, U-1-S-H, U-8-N-H & U-8-S-H. No cracks or breaks were found.

L-7-N

L-9-N

L-0-S

L-2-S

L-3-S

L-4-S

EVALUATION LOCATION	REPORT BELOW INDICATION AND PERTINENT INFORMATION SIZE	DESCRIPTION	ACTION/COMMENTS
L-7-N	N/A	Pin/Bolt	No cracks/breaks found
L-9-N	N/A	Pin/Bolt	No cracks/breaks found
L-0-S	N/A	Pin/Bolt	No cracks/breaks found
L-2-S	N/A	Pin/Bolt	No cracks/breaks found
L-3-S	N/A	Pin/Bolt	No cracks/breaks found
L-4-S	N/A	Pin/Bolt	No cracks/breaks found

OPERATOR	ORGANIZATION	LEVEL	DATE (mmddyy)
Randall Brooke	Sky Testing	II	05/24/2022

RESPONSIBLE CERTIFIED INDIVIDUAL	ORGANIZATION	LEVEL	DATE
	Sky Testing	II	05/24/2022

SkyTesting

ULTRASONIC EXAMINATION REPORT

CUSTOMER NAME: GPI NEI **JN:** **WO: 2022-0176S**

COMPONENT	SYSTEM	LOCATION
Hotel Bridge Page 3/8	Hotel Bridge	86 Water Street Leeds, MA

COMPONENT TYPE	SUB SYSTEM CODE	ORIENTATION
Pins/Bolts	N/A	Varies

MATERIAL:	TYPE	GEOMETRY	FABRICATION PROCESS
Carbon Steel	N/A	Pins/Bolts	Formed

SIZE/DIAMETER	THICKNESS	SURFACE CONDITION	SRR #
Varies	N/A	Brushed	N/A

NDE PROCEDURE #	TEMPERATURE	M&TE #	ACCEPTANCE CRITERIA
UT-001 Rev. 07	Ambient 72 Deg. F.	N/A	Customer Info No Cracks/Breaks

TRANSDUCER TYP.	SIZE	FREQUENCY	ANGLE	OTHER	CALIBRATION STD.
Round	3/8" & 1"	2.25 MHz	0	0	Step Wedge IIW block
INSTRUMENT	**MAKE**	**MODEL**	**COUPLANT**		
Olympus	Epoch	600	Ultragel II		

Ultrasonic longitudinal wave was performed on 44 pins/bolts looking for cracks or a broken pin/bolt. All were inspected from both sides except U-1-N-H, U-1-S-H, U-8-N-H & U-8-S-H. No cracks or breaks were found.

L-5-S

L-6-S

L-7-S

L-9-S

U-1-N-H

U-2-N-H

EVALUATION	REPORT BELOW INDICATION AND PERTINENT INFORMATION		
LOCATION	**SIZE**	**DESCRIPTION**	**ACTION/COMMENTS**
L-5-S	N/A	Pin/Bolt	No cracks/breaks found
L-6-S	N/A	Pin/Bolt	No cracks/breaks found
L-7-S	N/A	Pin/Bolt	No cracks/breaks found
L-9-S	N/A	Pin/Bolt	No cracks/breaks found
U-1-N-H	N/A	Pin/Bolt	No cracks/breaks found
U-2-N-H	N/A	Pin/Bolt	No cracks/breaks found

OPERATOR	ORGANIZATION	LEVEL	DATE (mmddyy)
Randall Brooke	Sky Testing	II	05/24/2022

RESPONSIBLE CERTIFIED INDIVIDUAL	ORGANIZATION	LEVEL	DATE
	Sky Testing	II	05/24/2022

SkyTesting

ULTRASONIC EXAMINATION REPORT

CUSTOMER NAME: GPI NEI **JN:** **WO: 2022-0176S**

COMPONENT	SYSTEM	LOCATION
Hotel Bridge Page 4/8	Hotel Bridge	86 Water Street Leeds, MA

COMPONENT TYPE	SUB SYSTEM CODE	ORIENTATION
Pins/Bolts	N/A	Varies

MATERIAL:	TYPE	GEOMETRY	FABRICATION PROCESS
Carbon Steel	N/A	Pins/Bolts	Formed

SIZE/DIAMETER	THICKNESS	SURFACE CONDITION	SRR #
Varies	N/A	Brushed	N/A

NDE PROCEDURE #	TEMPERATURE	M&TE #	ACCEPTANCE CRITERIA
UT-001 Rev. 07	Ambient 72 Deg. F.	N/A	Customer Info No Cracks/Breaks

TRANSDUCER TYP.	SIZE	FREQUENCY	ANGLE	OTHER	CALIBRATION STD.
Round	3/8" & 1"	2.25 MHz	0	0	Step Wedge IIW block

INSTRUMENT	MAKE	MODEL	COUPLANT
Olympus	Epoch	600	Ultragel II

Ultrasonic longitudinal wave was performed on 44 pins/bolts looking for cracks or a broken pin/bolt. All were inspected from both sides except U-1-N-H, U-1-S-H, U-8-N-H & U-8-S-H. No cracks or breaks were found.

U-2-N-V

U-3-N-H

U-3-N-V

U-4-N-H

U-4-N-V

U-5-N-H

EVALUATION	REPORT BELOW INDICATION AND PERTINENT INFORMATION		
LOCATION	SIZE	DESCRIPTION	ACTION/COMMENTS
U-2-N-V	N/A	Pin/Bolt	No cracks/breaks found
U-3-N-H	N/A	Pin/Bolt	No cracks/breaks found
U-3-N-V	N/A	Pin/Bolt	No cracks/breaks found
U-4-N-H	N/A	Pin/Bolt	No cracks/breaks found
U-4-N-V	N/A	Pin/Bolt	No cracks/breaks found
U-5-N-H	N/A	Pin/Bolt	No cracks/breaks found

OPERATOR	ORGANIZATION	LEVEL	DATE (mmddyy)
Randall Brooke	Sky Testing	II	05/24/2022

RESPONSIBLE CERTIFIED INDIVIDUAL	ORGANIZATION	LEVEL	DATE
	Sky Testing	II	05/24/2022

SkyTesting

ULTRASONIC EXAMINATION REPORT

CUSTOMER NAME: GPI NEI **JN:** **WO: 2022-0176S**

COMPONENT	SYSTEM	LOCATION
Hotel Bridge Page 5/8	Hotel Bridge	86 Water Street Leeds, MA

COMPONENT TYPE	SUB SYSTEM CODE	ORIENTATION
Pins/Bolts	N/A	Varies

MATERIAL:	TYPE	GEOMETRY	FABRICATION PROCESS
Carbon Steel	N/A	Pins/Bolts	Formed

SIZE/DIAMETER	THICKNESS	SURFACE CONDITION	SRR #
Varies	N/A	Brushed	N/A

NDE PROCEDURE #	TEMPERATURE	M&TE #	ACCEPTANCE CRITERIA
UT-001 Rev. 07	Ambient 72 Deg. F.	N/A	Customer Info No Cracks/Breaks

TRANSDUCER TYP.	SIZE	FREQUENCY	ANGLE	OTHER	CALIBRATION STD.
Round	3/8" & 1"	2.25 MHz	0	0	Step Wedge
INSTRUMENT	**MAKE**	**MODEL**	**COUPLANT**		IIW block
Olympus	Epoch	600	Ultragel II		

Ultrasonic longitudinal wave was performed on 44 pins/bolts looking for cracks or a broken pin/bolt. All were inspected from both sides except U-1-N-H, U-1-S-H, U-8-N-H & U-8-S-H. No cracks or breaks were found.

U-5-N-V

U-6-N-H

U-6-N-V

U-7-N-H

U-7-N-V

U-8-N-H

EVALUATION	REPORT BELOW INDICATION AND PERTINENT INFORMATION		
LOCATION	**SIZE**	**DESCRIPTION**	**ACTION/COMMENTS**
U-5-N-V	N/A	Pin/Bolt	No cracks/breaks found
U-6-N-H	N/A	Pin/Bolt	No cracks/breaks found
U-6-N-V	N/A	Pin/Bolt	No cracks/breaks found
U-7-N-H	N/A	Pin/Bolt	No cracks/breaks found
U-7-N-V	N/A	Pin/Bolt	No cracks/breaks found
U-8-N-H	N/A	Pin/Bolt	No cracks/breaks found

OPERATOR	ORGANIZATION	LEVEL	DATE (mmddyy)
Randall Brooke	Sky Testing	II	05/24/2022

RESPONSIBLE CERTIFIED INDIVIDUAL	ORGANIZATION	LEVEL	DATE
	Sky Testing	II	05/24/2022

SkyTesting

ULTRASONIC EXAMINATION REPORT

CUSTOMER NAME: GPI NEI **JN:** **WO: 2022-0176S**

COMPONENT	SYSTEM	LOCATION
Hotel Bridge Page 6/8	Hotel Bridge	86 Water Street Leeds, MA

COMPONENT TYPE	SUB SYSTEM CODE	ORIENTATION
Pins/Bolts	N/A	Varies

MATERIAL:	TYPE	GEOMETRY	FABRICATION PROCESS
Carbon Steel	N/A	Pins/Bolts	Formed

SIZE/DIAMETER	THICKNESS	SURFACE CONDITION	SRR #
Varies	N/A	Brushed	N/A

NDE PROCEDURE #	TEMPERATURE	M&TE #	ACCEPTANCE CRITERIA
UT-001 Rev. 07	Ambient 72 Deg. F.	N/A	Customer Info No Cracks/Breaks

TRANSDUCER TYP.	SIZE	FREQUENCY	ANGLE	OTHER	CALIBRATION STD.
Round	3/8" & 1"	2.25 MHz	0	0	Step Wedge
INSTRUMENT	**MAKE**	**MODEL**	**COUPLANT**		IIW block
Olympus	Epoch	600	Ultragel II		

Ultrasonic longitudinal wave was performed on 44 pins/bolts looking for cracks or a broken pin/bolt. All were inspected from both sides except U-1-N-H, U-1-S-H, U-8-N-H & U-8-S-H. No cracks or breaks were found.

U-1-S-H

U-2-S-H

U-2-S-V

U-3-S-H

U-3-S-V

U-4-S-H

EVALUATION	REPORT BELOW INDICATION AND PERTINENT INFORMATION		
LOCATION	**SIZE**	**DESCRIPTION**	**ACTION/COMMENTS**
U-1-S-H	N/A	Pin/Bolt	No cracks/breaks found
U-2-S-H	N/A	Pin/Bolt	No cracks/breaks found
U-2-S-V	N/A	Pin/Bolt	No cracks/breaks found
U-3-S-H	N/A	Pin/Bolt	No cracks/breaks found
U-3-S-V	N/A	Pin/Bolt	No cracks/breaks found
U-4-S-H	N/A	Pin/Bolt	No cracks/breaks found

OPERATOR	ORGANIZATION	LEVEL	DATE (mmddyy)
Randall Brooke	Sky Testing	II	05/24/2022

RESPONSIBLE CERTIFIED INDIVIDUAL	ORGANIZATION	LEVEL	DATE
	Sky Testing	II	05/24/2022

SkyTesting

ULTRASONIC EXAMINATION REPORT

CUSTOMER NAME: GPI NEI **JN:** **WO: 2022-0176S**

COMPONENT	SYSTEM	LOCATION
Hotel Bridge Page 7/8	Hotel Bridge	86 Water Street Leeds, MA

COMPONENT TYPE	SUB SYSTEM CODE	ORIENTATION
Pins/Bolts	N/A	Varies

MATERIAL:	TYPE	GEOMETRY	FABRICATION PROCESS
Carbon Steel	N/A	Pins/Bolts	Formed

SIZE/DIAMETER	THICKNESS	SURFACE CONDITION	SRR #
Varies	N/A	Brushed	N/A

NDE PROCEDURE #	TEMPERATURE	M&TE #	ACCEPTANCE CRITERIA
UT-001 Rev. 07	Ambient 72 Deg. F.	N/A	Customer Info No Cracks/Breaks

TRANSDUCER TYP.	SIZE	FREQUENCY	ANGLE	OTHER	CALIBRATION STD.
Round	3/8" & 1"	2.25 MHz	0	0	Step Wedge IIW block

INSTRUMENT	MAKE	MODEL	COUPLANT
Olympus	Epoch	600	Ultragel II

Ultrasonic longitudinal wave was performed on 44 pins/bolts looking for cracks or a broken pin/bolt. All were inspected from both sides except U-1-N-H, U-1-S-H, U-8-N-H & U-8-S-H. No cracks or breaks were found.

U-4-S-V

U-5-S-H

U-5-S-V

U-6-S-H

U-6-S-V

U-7-S-H

EVALUATION LOCATION	REPORT BELOW INDICATION AND PERTINENT INFORMATION SIZE	DESCRIPTION	ACTION/COMMENTS
U-4-S-V	N/A	Pin/Bolt	No cracks/breaks found
U-5-S-H	N/A	Pin/Bolt	No cracks/breaks found
U-5-S-V	N/A	Pin/Bolt	No cracks/breaks found
U-6-S-H	N/A	Pin/Bolt	No cracks/breaks found
U-6-S-V	N/A	Pin/Bolt	No cracks/breaks found
U-7-S-H	N/A	Pin/Bolt	No cracks/breaks found

OPERATOR	ORGANIZATION	LEVEL	DATE (mmddyy)
Randall Brooke	Sky Testing	II	05/24/2022

RESPONSIBLE CERTIFIED INDIVIDUAL	ORGANIZATION	LEVEL	DATE
	Sky Testing	II	05/24/2022

SkyTesting

ULTRASONIC EXAMINATION REPORT

CUSTOMER NAME: GPI NEI **JN:** **WO: 2022-0176S**

COMPONENT	SYSTEM	LOCATION
Hotel Bridge Page 8/8	Hotel Bridge	86 Water Street Leeds, MA

COMPONENT TYPE	SUB SYSTEM CODE	ORIENTATION
Pins/Bolts	N/A	Varies

MATERIAL:	TYPE	GEOMETRY	FABRICATION PROCESS
Carbon Steel	N/A	Pins/Bolts	Formed

SIZE/DIAMETER	THICKNESS	SURFACE CONDITION	SRR #
Varies	N/A	Brushed	N/A

NDE PROCEDURE #	TEMPERATURE	M&TE #	ACCEPTANCE CRITERIA
UT-001 Rev. 07	Ambient 72 Deg. F.	N/A	Customer Info No Cracks/Breaks

TRANSDUCER TYP.	SIZE	FREQUENCY	ANGLE	OTHER	CALIBRATION STD.
Round	3/8" & 1"	2.25 MHz	0	0	Step Wedge
INSTRUMENT	**MAKE**	**MODEL**	**COUPLANT**		IIW block
Olympus	Epoch	600	Ultragel II		

Ultrasonic longitudinal wave was performed on 44 pins/bolts looking for cracks or a broken pin/bolt. All were inspected from both sides except U-1-N-H, U-1-S-H, U-8-N-H & U-8-S-H. No cracks or breaks were found.

U-7-S-V

U-8-S-H

EVALUATION	REPORT BELOW INDICATION AND PERTINENT INFORMATION		
LOCATION	**SIZE**	**DESCRIPTION**	**ACTION/COMMENTS**
U-7-S-V	N/A	Pin/Bolt	No cracks/breaks found
U-8-S-H	N/A	Pin/Bolt	No cracks/breaks found

OPERATOR	ORGANIZATION	LEVEL	DATE (mmddyy)
Randall Brooke	Sky Testing	II	05/24/2022

RESPONSIBLE CERTIFIED INDIVIDUAL	ORGANIZATION	LEVEL	DATE
	Sky Testing	II	05/24/2022

GPI

Many Talents One Firm

gpinet.com

Supplemental Information 2:

"Routine and Fracture Critical Inspection Reports"
done by MassDOT, dated November 29, 2021

STRUCTURES INSPECTION FIELD REPORT

ROUTINE INSPECTION

2-DIST	B.I.N.	BR. DEPT. NO.
02	0RA	N-19-027

CITY/TOWN	8.-STRUCTURE NO.	11-Kilo. POINT	41-STATUS	90-ROUTINE INSP. DATE
NORTHAMPTON	N19027-0RA-MUN-CLO	000.032	K:CLOSED	NOV 29, 2021

07-FACILITY CARRIED	MEMORIAL NAME/LOCAL NAME	27-YR BUILT	106-YR REBUILT	YR REHAB'D (NON 106)
HWY OLD SHEPHERD		1876	0000	0000

06-FEATURES INTERSECTED	26-FUNCTIONAL CLASS	DIST. BRIDGE INSPECTION ENGINEER
WATER MILL RIVER	Urban Local	M. Barrett

43-STRUCTURE TYPE	22-OWNER	21-MAINTAINER	TEAM LEADER	PROJ MGR
910 : Iron or Aluminum Truss - Thru	City/ Municipal Highway A	City/ Municipal Highway A	S. Saelim	HDR

107-DECK TYPE	WEATHER	TEMP. (air)	TEAM MEMBERS
6 : Corrugated Steel	Cloudy	2°C	L. QURREH

ITEM 58 — DECK — 3

		DEF
1.Wearing Surface	3	S-A
2.Deck Condition	3	S-A
3.Stay in Place Forms	N	-
4.Curbs	N	-
5.Median	N	-
6.Sidewalks	N	-
7.Parapets	N	-
8.Railing	5	M-P
9.Anti Missile Fence	N	-
10.Drainage System	N	-
11.Lighting Standards	0	M-P
12.Utilities	7	-
13.Deck Joints	X	-
14.	N	-
15.	N	-
16.	N	-

CURB REVEAL (In millimeters)	N	S
	N	N

APPROACHES

		DEF
a. Appr. pavement condition	6	-
b. Appr. Roadway Settlement	N	-
c. Appr. Sidewalk Settlement	N	-
d.	N	-

OVERHEAD SIGNS (Attached to bridge) (Y/N) N

		DEF
a. Condition of Welds	N	-
b. Condition of Bolts	N	-
c. Condition of Signs	N	-

ITEM 59 — SUPERSTRUCTURE — 2

			DEF
1.Stringers		4	S-A
2.Floorbeams		2	S-A
3.Floor System Bracing		N	-
4.Girders or Beams		N	-
5.Trusses - General		3	-
a. Upper Chords	6		M-P
b. Lower Chords	3		M-P
c. Web Members	3		-
d. Lateral Bracing	5		-
e. Sway Bracings	N		-
f. Portals	6		-
g. End Posts	6		-
6.Pin & Hangers		2	S-A
7.Conn Plt's, Gussets & Angles		N	-
8.Cover Plates		N	-
9.Bearing Devices		5	M-P
10.Diaphragms/Cross Frames		N	-
11.Rivets & Bolts		5	M-P
12.Welds		N	-
13.Member Alignment		N	-
14.Paint/Coating		4	M-P
15.		N	-

Year Painted	X

COLLISION DAMAGE: *Please explain*
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD DEFLECTION: *Please explain*
None (X) Minor ( ) Moderate ( ) Severe ( )

LOAD VIBRATION: *Please explain*
None (X) Minor ( ) Moderate ( ) Severe ( )

Any Fracture Critical Member: (Y/N) Y

Any Cracks: (Y/N) N

ITEM 60 — SUBSTRUCTURE — 5

	Dive	Cur		DEF
1. Abutments			5	
a. Pedestals	N	N		-
b. Bridge Seats	N	7		-
c. Backwalls	N	5		M-P
d. Breastwalls	N	5		M-P
e. Wingwalls	N	N		-
f. Slope Paving/Rip-Rap	N	N		-
g. Pointing	N	5		-
h. Footings	N	N		-
i. Piles	N	N		-
j. Scour	N	N		-
k. Settlement	N	N		-
l.	N	N		-
m.	N	N		-
2. Piers or Bents			N	
a. Pedestals	N	N		-
b. Caps	N	N		-
c. Columns	N	N		-
d. Stems/Webs/Pierwalls	N	N		-
e. Pointing	N	N		-
f. Footing	N	N		-
g. Piles	N	N		-
h. Scour	N	N		-
i. Settlement	N	N		-
j.	N	N		-
k.	N	N		-
3. Pile Bents			N	
a. Pile Caps	N	N		-
b. Piles	N	N		-
c. Diagonal Bracing	N	N		-
d. Horizontal Bracing	N	N		-
e. Fasteners	N	N		-

UNDERMINING (Y/N) If YES please explain: N

COLLISION DAMAGE:
None (X) Minor ( ) Moderate ( ) Severe ( )

SCOUR: *Please explain*
None (X) Minor ( ) Moderate ( ) Severe ( )

I-60 (Dive Report): N *I-60 (This Report):* 5

93B-U/W (DIVE) Insp 00/00/0000

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

CITY/TOWN	B.I.N.	BR. DEPT. NO.	8.-STRUCTURE NO.	INSPECTION DATE
NORTHAMPTON	0RA	N-19-027	N19027-0RA-MUN-CLO	NOV 29, 2021

ITEM 61 — CHANNEL & CHANNEL PROTECTION — 6

	Dive	Cur	DEF
1.Channel Scour	N	6	-
2.Embankment Erosion	N	7	-
3.Debris	N	6	-
4.Vegetation	N	6	-
5.Utilities	N	N	-
6.Rip-Rap/Slope Protection	N	N	-
7.Aggradation	N	N	-
8.Fender System	N	N	-

STREAM FLOW VELOCITY:
Tidal ( ) High ( ) Moderate ( ) Low ( ) None ( )

ITEM 61 (Dive Report): N ***ITEM 61 (This Report):*** 6

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

ITEM 36 — *TRAFFIC SAFETY*

	36	COND	DEF
A. Bridge Railing	0	5	M-P
B. Transitions	0	N	-
C. Approach Guardrail	0	7	-
D. Approach Guardrail Ends	0	N	-

WEIGHT POSTING — *Not Applicable* ☐

	H	3	3S2	Single
Actual Posting	03	03	03	03
Recommended Posting	N	N	N	N

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

	At bridge E	At bridge W	Other Advance E	Other Advance W
Signs In Place (Y=Yes,N=No, NR=NotRequired)	Y	N	N	N
Legibility/ Visibility	1 / 1			

CLEARANCE POSTING

	N ft	N in	S ft	S in	meter
Not Actual Field Measurement X					
Posted Clearance		0		0	
		0		0	

	At bridge N	At bridge S	Advance N	Advance S
Signs In Place (Y=Yes,N=No, NR=Not Required)				
Legibility/ Visibility				

ACCESSIBILITY (Y/N/P)

	Needed	Used
Lift Bucket	N	N
Ladder	P	Y
Boat	Y	Y
Waders	Y	Y
Inspector 50	N	N
Rigging	N	N
Staging	N	N
Traffic Control	N	N
RR Flagger	N	N
Police	N	N
Other:		
	N	N

TOTAL HOURS 130

PLANS (Y/N): Y

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

TAPE#: _____

List of field tests performed:
Hands-On

RATING

Rating Report (Y/N): N

Date: 00/00/0000

Inspection data at time of existing rating

I 58: - I 59: - I 60: - Date : 00/00/0000

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

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

REASON: _____

CONDITION RATING GUIDE (For Items 58, 59, 60 and 61)

	CODE	CONDITION	DEFECTS
	N	NOT APPLICABLE	
G	9	EXCELLENT	Excellent condition.
G	8	VERY GOOD	No problem noted.
G	7	GOOD	Some minor problems.
F	6	SATISFACTORY	Structural elements show some minor deterioration.
F	5	FAIR	All primary structural elements are sound but may have minor section loss, cracking, spalling or scour.
P	4	POOR	Advanced section loss, deterioration, spalling or scour.
P	3	SERIOUS	Loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
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	Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stablility. Bridge is closed to traffic but corrective action may put it back in light service.
	0	FAILED	Out of service - beyond corrective action.

DEFICIENCY REPORTING GUIDE

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

CATEGORIES OF DEFICIENCIES:

M= Minor Deficiency - Deficiencies which are minor in nature, generally do not impact the structural integrity of the bridge and could easily be repaired. Examples include but are not limited to: Spalled concrete, Minor pot holes, Minor corrosion of steel, Minor scouring, Clogged drainage, etc.

S= Severe/Major Deficiency - Deficiencies which are more extensive in nature and need more planning and effort to repair. Examples include but are not limited to: Moderate to major deterioration in concrete, Exposed and corroded rebars, Considerable settlement, Considerable scouring or undermining, Moderate to extensive corrosion to structural steel with measurable loss of section, etc.

C-S= Critical Structural Deficiency - A deficiency in a structural element of a bridge that poses an extreme unsafe condition due to the failure or imminent failure of the element which will affect the structural integrity of the bridge.

C-H= Critical Hazard Deficiency - A deficiency in a component or element of a bridge that poses an extreme hazard or unsafe condition to the public, but does not impair the structural integrity of the bridge. Examples include but are not limited to: Loose concrete hanging down over traffic or pedestrians, A hole in a sidewalk that may cause injuries to pedestrians, Missing section of bridge railing, etc.

URGENCY OF REPAIR:

I = Immediate- [Inspector(s) immediately contact District Bridge Inspection Engineer (DBIE) to report the Deficiency and to receive further instruction from him/her].

A = ASAP- [Action/Repair should be initiated by District Maintenance Engineer or the Responsible Party (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	B.I.N.	BR. DEPT. NO.	8.-STRUCTURE NO.	INSPECTION DATE
NORTHAMPTON	**0RA**	**N-19-027**	**N19027-0RA-MUN-CLO**	**NOV 29, 2021**

REMARKS

BRIDGE ORIENTATION

Bridge No. N-19-027 (0RA) is a single span through trusses bridge that carries Old Shepherd Road over the Mill River, flowing north to south in the Town of Northampton, MA. **See Sketch 1.** The superstructure is comprised of two (2) trusses with wrought iron stringers and floorbeams, supporting a corrugated steel deck with an asphalt wearing surface. **See Photos 1 through 15.**

The substructure consists of two (2) stone abutments. Each abutment consists of a backwall, bridge seat, and breastwall. The east abutment has steel bearing plates that are encased in concrete at each stringer.

The bridge is oriented west to east. The trusses are designated as north and south. The truss lower chord panel points are labeled L0 to L9. The truss upper chord panel points are labeled U1 to U8, corresponding to the appropriate lower chord panel point. The floorbeams are numbered 1 to 8 from west to east. The stringers are numbered 1 to 4 from south to north. The nomenclature follows the original design plans. **See Sketches 2 and 3.**

GENERAL REMARKS

GENERAL ACCESS NOTES

The underside of the bridge was inspected using a floating scaffolding platform and an extension ladder. The abutments and the truss members were inspected using an extension ladder.

The bridge is currently closed to all traffic including pedestrian traffic. MassDOT was informed of critical findings on the day of the inspection.

ITEM 58 - DECK

Item 58.1 - Wearing Surface

The hot mix asphalt overlay typically has transverse and longitudinal cracks up to 1" wide across the full length of the bridge. There are areas of severe depression along the entire length of the bridge. Both the east and west ends of the bridge exhibit minor vegetation growth.

The wearing surface is in serious condition. **(DEF=S/A)** The wearing surface has multiple holes with 100% section loss, specifics listed below.

- 30" from the north side, there is an 10" wide x 4" long hole with 100% section loss to the deck, 102" to the east of Floorbeam 3. **See Photo 16.**
- On the north side, there is a 9" wide x 4" long hole with 100% section loss to the deck, 30" to the east of Floorbeam 5. **See Photo 17.**
- On the north side, there is a 12" wide x 4" long hole with 100% section loss to the deck, 50" to the east of Floorbeam 5. **See Photo 17.**
- On the north side, there is a 3" diameter hole with 100% section loss to the deck, 85" to the east of Floorbeam 5. **See Photo 17.**
- On the north side, there is a 7" wide x 5" long hole with 100% section loss to the deck, 48" to the east of Floorbeam 6. **See Photo 18.**
- On the north side, there is a 7" wide x 11" long hole with 100% section loss to the deck, 65" to the east of Floorbeam 6. **See Photo 18.**

CITY/TOWN	B.I.N.	BR. DEPT. NO.	8.-STRUCTURE NO.	INSPECTION DATE
NORTHAMPTON	**0RA**	**N-19-027**	**N19027-0RA-MUN-CLO**	**NOV 29, 2021**

REMARKS

Item 58.2 - Deck Condition

The corrugated steel deck exhibits widespread (up to 100%) section loss and rust throughout. **(DEF=S/A)**
The deck has numerous holes with 100% section loss, specifics listed below.

- In Bay 4, there is 2'-6" wide, hole in the bottom of the corrugated steel deck between Stringers 3 and 4. **See Photo 19.**
- In the midspan of Bay 4, there is a 4" wide x 9" long hole between Stringers 3 and 4. **See Photo 20.**
- In Bay 4, there is a 2'-0" wide hole in the bottom of the corrugated steel deck between Stringers 1 and 2. **See Photo 21.**
- In Bay 5, there is a 2'-0" wide hole in the bottom of the corrugated steel deck between Stringers 3 and 4. **See Photo 22.**
- In Bay 5, north overhang, there are three (3) 1'-0" wide holes in the bottom of the corrugated steel deck**. See Photo 23.**
- In Bay 5, south overhang, there is an 8" wide hole in the bottom of the corrugated steel deck. **See Photo 24.**
- In Bay 6, north overhang, there is a 6" wide x 12" long hole in the corrugated steel deck**. See Photo 25.**
- In Bay 6, north overhang, there is an 4" wide x 9" long hole in the corrugated steel deck**. See Photo 26.**
- In Bay 6, north overhang, there is a 5" wide x 7" long hole in the corrugated steel deck**. See Photo 27.**
- In Bay 6, there is a 10" wide hole in the corrugated steel deck between Stringers 3 and 4**. See Photo 28.**
- In Bay 7, north overhang, there are multiple 12" wide holes in the corrugated steel deck. **See Photo 29.**
- In Bay 7, south overhang, there are multiple 8" wide holes in the corrugated steel deck. **See Photo 30.**
- In Bay 7, there are multiple 12" wide holes in the corrugated steel deck**. See Photos 31 and 32.**

Item 58.8 - Railing

The painted, wrought iron ornamental bridge railings consist of two (2) horizontal rails and cross braces. The two horizontal handrails are attached to the vertical truss posts. Both railings exhibit areas with broken horizontal and cross-bracing members as well as having areas of moderate to heavy rust.

Additional deficiencies include:

North Railing:

- Top horizontal member is bent at Panel Point L1.
- Deformed and rusted cross-bracing at Panel Point L5. **See Photo 33.**
- Cross-bracing is missing at Panel Point L6. **See Photo 34.**
- Cross-bracing is out of plumb at Panel Point L8.
- Top horizontal member is bent at Panel Point L7.
- Top horizontal member is bent at Panel Point L8.

South Railing:

- Both horizontal members and cross-braces are missing for Panel Point L0. **See Photo 35.**
- Bottom horizontal member is unattached from the railing at one end at Panel Point L2. **See Photo 36.**
- Bottom horizontal member is missing half of the member at Panel Point L4.

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REMARKS

Item 58.8 - Railing (Cont'd)

The bridge railing also consists of a w-beam guardrail attached to the ornamental railing. The highway railing is in good condition.

Item 58.11 - Lighting Standards

There are two lamps on the bridge that are attached to the top strut. The lamps are broken and appear to not be functioning. **See Photo 37.**

Item 58.12 - Utilities

Along the south truss, there is a 4" diameter insulated gas line that is supported by cantilever brackets attached to the bottom of the floorbeams. **See Photo 38 and 39.** The brackets are in overall good condition with typical light to moderate rust.

Along the south top chord, and the north vertical Member L3 and L7, and the top struts, there is a 2" diameter electrical conduit that feeds into the lamps. The electrical conduit is in good condition.

ITEM 59 - SUPERSTRUCTURE

Item 59.1 - Stringers

Many of the stringers exhibit 1/8" section loss to the top flange and 1/16" section loss to the web and the bottom flange. **(DEF=S/A) There are elements with up to 100% section loss throughout the stringers.** Specific details are listed below.

Additional deficiencies include:

- Bay 2, Stringer 1 at Floorbeam 2 - 100% loss of section to the bolt head connecting the floorbeam to the stringer. **See Photo 40.**
- Bay 2, Stringer 3 at Floorbeam 2 - 25% loss of section to the bolt head connecting the floorbeam to the stringer.
- Bay 3, Stringer 4 at Floorbeam 3 - 6" long x 3" wide hole with 100% loss of section to the web. **See Photo 41.**
- Bay 3, Stringer 3 at Floorbeam 3 - 1/16" loss of section to the connection between the stringer and the floorbeam.
- Bay 5, Stringer 4 at Floorbeam 5 - 75% loss of section to the top flange of Stringer 4. **See Photo 42.**
- Bay 6, Stringer 1 at Floorbeam 5 - Bird's nest. **See Photo 43.**
- Bay 6 , Stringer 1 between Floorbeam 5 and 6 - 75% loss of section to the stringer's top flange. **See Photo 44.**
- Bay 6, Stringer 3 between Floorbeam 5 and 6 - 75% loss of section to the stringer's top flange.
- Bay 6, Stringer 4 between Floorbeam 5 and 6- 75% loss of section to the stringer's top flange, 3' from Floorbeam 5. **See Photo 45.**
- Bay 7, Stringer 4 at Floorbeam 7 - 100% loss of section to the top flange and web of Stringer 4**. See Photo 46.**
- Bay 7, Stringer 1 between Floorbeam 6 and 7 - 100% loss of section to the stringer's top flange**. See Photo 47.**
- Bay 7 - Stringer 4 at Floorbeam 7 - 100% loss of section to the top flange and web of Stringer 4**. See Photo 48.**

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REMARKS

Item 59.2 - Floorbeams

Floorbeams exhibit 1/16" section loss to the top and bottom flanges as well as paint failure and corrosion to the web. The majority of floorbeams exhibit knife edging to flanges. **(DEF= S/A) There are areas where the floorbeams have section loss up to 100%.** Specific details are listed below.

Floorbeam 1:

- 1/8" loss of section to the web along the entire length of the floorbeam. **See Photo 49.**
- 100% loss of section to the top flange of the floorbeam at Stringer 4. **See Photo 50.**

Floorbeam 2:

- The top flange of Floorbeam 2 between Stringers 1 and 2 exhibits widespread section loss of 1/8" with areas of deeper loss of 1/4".

Floorbeam 7:

- 100% loss of section and knife edging at the top flange of the west face of the floorbeam between Stringers 1 and 2. **See Photo 51.**
- 100% loss of section and knife edging at the top flange of the east face of the floorbeam between Stringers 1 and 2. **See Photo 52.**
- 100% loss of section and knife edging at the top flange of the east face of the floorbeam at Stringer 4. **See Photo 53.**
- Up to 1/4" loss of section to the top flange the floorbeam between Stringers 2 and 3. **See Photo 54.**

Floorbeam 8:

- South end of Floorbeam 8 has up to 50% section loss to the bottom of the end stiffener. **See Photo 55.** North end of Floorbeam 8 has a 3" long by 2" wide corrosion hole in the stiffener. Laminar corrosion has initiated on the lower half of the web adjacent to the stiffener. **See Photo 56.**

Item 59.5 - Trusses - General

Item 59.5.a - Upper Chords

The upper chords of both trusses typically have areas of intermittent pack rust between the top plate and the top flange of the c-channels. Specific details are listed below.

North Truss:

- U1-U2: Between the top flange plate and the splice plate there is up to 1" pack rust at U1.
- U1-U2: Between the top flange plate and the splice plate there is up to 2" pack rust at U2. **See Photo 57.**
- U2-U3: Minor to moderate areas of corrosion without measurable section loss on the inside of both c-channels. **See Photo 58.**
- U3-U4: Bird's nest at U4.
- U6-U7: Up to 2" pack rust between the top flange plate and the splice plate at U7. **See Photo 59.**
- U7-U8: Up to 2" pack rust between the top plate and the top flange of the c-channel at U8. **See Photo 60.** Bird's nest sitting on the batten plates. **See Photo 61.**

Item 59.5.b - Lower Chords

The truss lower chords are typically in good condition with random areas of light corrosion throughout. South truss at L9 has 1/8" section loss with active surface corrosion to the end of the interior lower chord eye bar. **See Photo 62.** At the east abutment, north truss, Member L9 exhibits up to 10% section loss to the end of the exterior lower chord eye bar. **See Photo 63.**

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Item 59.5.c - Web Members
The truss web members are typically in good condition with random areas of light corrosion throughout with no measurable section loss. In the south truss, Members U1-L2 at 5'-0" from L2 and U2-L3 at 5'-0" from L3 are bent. **See Photos 64 and 65.**

Item 59.5.d - Lateral Bracing
The lateral bracing members are typically in good condition with light to moderate corrosion throughout. The strut at Panel Point U4 exhibits paint failure and corrosion at midspan. **See Photo 66.** At Panel Point L9, at the southeast diagonal the connection plate has two sheared rivets**.**

At the four bearings, square rods which were used for previous lateral bracing are still connected to the bearings at the masonry plates. The previous lateral bracing has been field cut and remains approximately 2' long. The portions of this previous lateral bracing that remain exhibit active surface corrosion with horizontal corrosion holes up to 4" long by 2" wide. **Photo 62** includes this previous lateral bracing at the south truss and **Photo 63** includes this previous lateral bracing at the north truss.

Item 59.5.e - Sway Bracings
The east and west sway bracing are in typically good condition. No deficiencies noted.

Item 59.5.g - End Posts
The end posts are in satisfactory condition with surface corrosion and no significant defects.

Item 59.6 - Pin & Hangers
The pins in the hanger assemblies are in generally satisfactory condition with minor surface corrosion and paint failure. **(DEF=S/A) The north U-bolt hanger at Floorbeam 7 has broken at the top of the coupling nuts and has been replaced with a steel cable that connects the floorbeam to the diagonal eyebar member**. **See Photos 67 and 68.** The remainder of the pin and hanger members are typically in good condition with random areas of light corrosion throughout.

Item 59.9 - Bearing Devices
At the east abutment, the iron bearing plates encased in concrete. The bridge seat is covered with debris, the debris was frozen and could not be removed to further inspect the bearing devices on the east abutment.

At the west abutment, a concrete grout was used under the stringers. Several of the stringers on the west abutment have broken grout pads. The grout has completely failed under all stringers. Anchor bolts are in generally good condition. Specific details are listed below.

East Abutment
- Stringer Bearings are covered with debris. **See Photo 69.**
- At the Stringer 1 and 2 bearings, the concrete encasements have broken, exposing the steel plate under the stringers. The anchor bolts on Stringer 1 have 1/16" section loss and on Stringer 2 the bolts are missing a nut on the south side.
- Stringer 3- South side completely covered with asphalt**. See Photo 70.**
- Stringer 4- North side is covered with debris.

West Abutment
- Stringer 1 - grout has failed under Stringer 1.
- Stringer 2 - grout has failed under Stringer 2. **See Photo 71.**
- Stringer 3 - grout has failed under Stringer 3.
- Stringer 4 - grout has failed under Stringer 4 and is covered with debris. **See Photo 72.**

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Item 59.11 - Rivets & Bolts
The rivet heads at the stringer bearing stiffeners typically exhibit section loss up to 25% but with random rivet heads with up to 100% section loss. The rivet heads for the truss members are in generally good condition. Specific details are listed below.

- Stringer 1 bearing stiffener at Floorbeam 2, up to 100% loss of section to the horizontal rivet heads on top of the floorbeam/ stringer connection. **See Photo 73.**

Item 59.14 - Paint/Coating
The paint system has failed throughout the superstructure especially at the top flange of the stringers and top flange of the floorbeams.

ITEM 60 - SUBSTRUCTURE

Item 60.1 - Abutments
The east abutment has a 27" wide x 42" long x 24" deep spall with exposed rebar with surface corrosion and no loss of section at the south end of the truss and a 48" wide x 27" long spall with exposed and corroded rebar at the north end of the truss with vegetation growth. **See Photos 74 and 75.**

Item 60.1.c - Backwalls
The concrete backwalls at both abutments are in fair condition with minor scaling isolated areas of cracking. Specific deficiencies are as follows:

East Backwall
- 3' wide x 1" high x 2" deep spall between Stringers 2 and 3. **See Photo 76.**
- 2" wide x 1" high x 4.5" deep hole between Stringers 3 and 4.

Item 60.1.d - Breastwalls
The breastwall at the east abutment has failed pointing and missing mortar with random areas of scaling 2' down from the top between Stringers 1 and 2 in the concrete repair. **See Photo 77.**

Item 60.1.g - Pointing
East Abutment
The top 24" of the abutment has been covered with concrete, the remainder of the abutment is missing mortar and the pointing has failed. **See Photo 10.**

West Abutment
The pointing has failed with missing mortar between the joints. There is vegetation growth from the open joints in the masonry. **See Photos 78 and 79.**

ITEM 61 - CHANNEL AND CHANNEL PROTECTION

Item 61.1 - Channel Scour
A stream profile can be seen in **Sketch 5.**

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Sketch / Photo Log

Sketch 1 : Location Map.
Sketch 2 : General Plan. Fracture Critical Members Noted in Blue.
Sketch 3 : Elevation. Fracture Critical Members Noted in Blue.
Sketch 4 : Stream Profile.
Photo 1 : South elevation, looking north.
Photo 2 : North elevation, looking south.
Photo 3 : West approach, looking east.
Photo 4 : East approach, looking west.
Photo 5 : Typical top of deck.
Photo 6 : Channel upstream, looking north.
Photo 7 : Channel downstream, looking south.
Photo 8 : General view of underside of the bridge.
Photo 9 : West abutment (Abutment 1).
Photo 10 : East abutment (Abutment 2).
Photo 11 : Asphalt patch at the west end of the bridge (no joint found).
Photo 12 : Load rating sign, located on northeast approach.
Photo 13 : East approach barriers, looking west.
Photo 14 : Typical bridge railing, taken of north railing looking west.
Photo 15 : Typical approach guardrail, looking south.
Photo 16 : 30" from the north side, 10" wide x 4" long hole with 100% section loss to the deck, 102" to the east of Floorbeam 3.
Photo 17 : On the north side of the deck, east of Floorbeam 5 there are multiple holes.
Photo 18 : On the north side of the deck, east of Floorbeam 6 there are multiple holes.
Photo 19 : Bay 4, 2'-6" wide, 100% section loss to bottom of corrugated steel deck between Stringers 3 and 4.
Photo 20 : Midspan of Bay 4, 9"wide x 4" long hole with 100% section loss between Stringers 3 and 4.
Photo 21 : Bay 4, 2'-0" wide hole, 100% section loss to bottom of corrugated steel deck between Stringers 1 and 2.
Photo 22 : Bay 5, 2'-0" wide hole, 100% section loss to bottom of corrugated steel deck between Stringers 3 and 4.
Photo 23 : Bay 5, north overhang, three (3) 1'-0" wide holes, 100% section loss to bottom of corrugated steel deck.
Photo 24 : Bay 5, south overhang, an 8" wide hole, 100% section loss to bottom of corrugated steel deck.
Photo 25 : Bay 6, north overhang, 12" wide x 6" long hole with 100% section loss to corrugated steel deck.
Photo 26 : Bay 6, north overhang, 9" wide x 4" long hole with 100% section loss to corrugated steel deck.
Photo 27 : Bay 6, north overhang, 7" wide x 5" long hole with 100% section loss to corrugated steel deck.
Photo 28 : Bay 6, 10" wide hole, 100% section loss to corrugated steel deck between Stringers 3 and 4.
Photo 29 : Bay 7, north overhang, multiple 12" wide sections with 100% section loss to corrugated steel deck.
Photo 30 : Bay 7, south overhang, multiple 8" wide sections with 100% section loss to corrugated steel deck.
Photo 31 : Bay 7, multiple 12" wide sections with 100% section loss to corrugated steel deck (1 of 2).
Photo 32 : Bay 7, multiple 12" wide sections with 100% section loss to corrugated steel deck (2 of 2).
Photo 33 : On the north truss, at Panel Point 5, the cross bracing is deformed and rusting.
Photo 34 : On the north truss, at Panel Point 6, the cross bracing is missing.
Photo 35 : Both horizontal members and cross-braces are missing for Bay 1, on the south railing.
Photo 36 : On the south truss, at Panel Point L2 the bottom horizontal bar is unattached from the railing at one end.
Photo 37 : Two lamps on bridge that are attached to top strut. Lamps are broken.
Photo 38 : Along south truss, 4" diameter insulated gas line.

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Sketch / Photo Log (Cont'd)

Photo 39 : At the southeast approach there is a sign detailing the gas line attached to the bridge.
Photo 40 : Bay 2, Stringer 1 at Floorbeam 2 has 100% loss of section to bolt head connecting floorbeam to stringer.
Photo 41 : Bay 3, Stringer 4 at Floorbeam 3 has a 6" long by 3" wide hole with 100% loss of section to web.
Photo 42 : Bay 5, Stringer 4 at Floorbeam 5 has 75% loss of section to top flange of Stringer 4.
Photo 43 : Bay 6, Stringer 1 at Floorbeam 5 there is a bird's nest.
Photo 44 : Bay 6 , Stringer 1 between Floorbeam 5 and 6 has 75% loss of section to stringer's top flange.
Photo 45 : Bay 6, Stringer 4 between Floorbeam 5 and 6 there is 75% loss of section to stringer's top flange, 3' from Floorbeam 5.
Photo 46 : Bay 7, Stringer 4 at Floorbeam 7 there is 100% loss of section to top flange and web of Stringer 4.
Photo 47 : Bay 7, Stringer 1 between Floorbeam 6 and 7 there is 100% loss of section to stringer's top flange.
Photo 48 : Bay 7, Stringer 4 at Floorbeam 7 there is 100% loss of section to the top flange and the web of Stringer 4.
Photo 49 : 1/8" loss of section to the web along the entire length of Floorbeam 1.
Photo 50 : 100% loss of section to the top flange of Floorbeam 1 at Stringer 4.
Photo 51 : 100% loss of section and knife edging at the top flange of the west face of Floorbeam 7 between Stringer 1 and 2.
Photo 52 : 100% loss of section and knife edging at the top flange of the east face of Floorbeam 7 between Stringers 1 and 2.
Photo 53 : 100% loss of section and knife edging at the top flange of the east face of Floorbeam 7 at Stringer 4.
Photo 54 : Up to 1/4" loss of section to the top flange of Floorbeam 7 between Stringers 2 and 3.
Photo 55 : Floorbeam 8, on the south end has up to 50% section loss to the stiffener.
Photo 56 : North end of Floorbeam 8 has a 3" long by 2" wide corrosion hole in the stiffener. Laminar corrosion has
initiated on the lower half of the web adjacent to the stiffener.
Photo 57 : There is up to 2" of pack rust at Panel Point U2.
Photo 58 : The inside of both c-channels on member U2-U3 have minor to moderate areas of corrosion.
Photo 59 : There is up to 2" of pack rust between the top plate and the cover plate at Panel Point U7.
Photo 60 : There is up to 2" pack rust between the top plate and the top flange of the c-channel at Panel Point U8.
Photo 61 : Bird's nest sitting on batten plates near Panel Point U8.
Photo 62 : South truss at L9 has 1/8" section loss with active surface corrosion to the end of the interior lower chord eye bar.
Photo 63 : At the east abutment, north truss, Member L9 exhibits up to 10% section loss to the end of the exterior lower chord eye bar.
Photo 64 : On the south truss, on Diagonal U1 to L2 there is a bend in the web member.
Photo 65 : South truss, Diagonal U2 to L3 there is a bend in the web member.
Photo 66 : Strut Member U4 north to U4 south exhibits paint failure and corrosion at midspan.
Photo 67 : The north U-bolt hanger at Floorbeam 7 has broken at the top of the coupling nuts and has been replaced with a steel cable that connects the floorbeam to the diagonal eyebar member (Photo 1 of 2).
Photo 68 : The north U-bolt hanger at Floorbeam 7 has broken at the top of the coupling nuts and has been replaced with a steel cable that connects the floorbeam to the diagonal eyebar member (Photo 2 of 2).
Photo 69 : Stringer 1 bearing on east abutment has heavy debris buildup on bearing.

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Sketch / Photo Log (Cont'd)

Photo 70 : By Stringer 3 on the south side the abutment is completely covered with asphalt.
Photo 71 : Under Stringer 2 the grout has completely failed.
Photo 72 : The grout under Stringer 4 at the west abutment is cracked, but the anchor bolt is in good condition.
Photo 73 : The Stringer 1 bearing stiffener at Floorbeam 2, has up to 100% loss of section to the horizontal rivet heads on top of the floorbeam/stringer connection.
Photo 74 : The east abutment has 42" wide x 27" long x 24" deep spall with exposed and corroded rebar at south end of the truss.
Photo 75 : At the east abutment by the north end of truss there is vegetation growth.
Photo 76 : Between Stringers 2 and 3 at the east backwall there is a 3' wide by 1" high by 2" deep spall. There is scaling on the backwall.
Photo 77 : The east abutment between Stringers 1 and 2 has missing mortar and scaling at the top 2 feet of the abutment.
Photo 78 : The west abutment is missing mortar and has failed pointing. There is typical cracked pointing and vegetation growth in joints (Photo 1 of 2).
Photo 79 : The west abutment is missing mortar and has failed pointing. There is typical cracked pointing and vegetation growth in joints (Photo 2 of 2).

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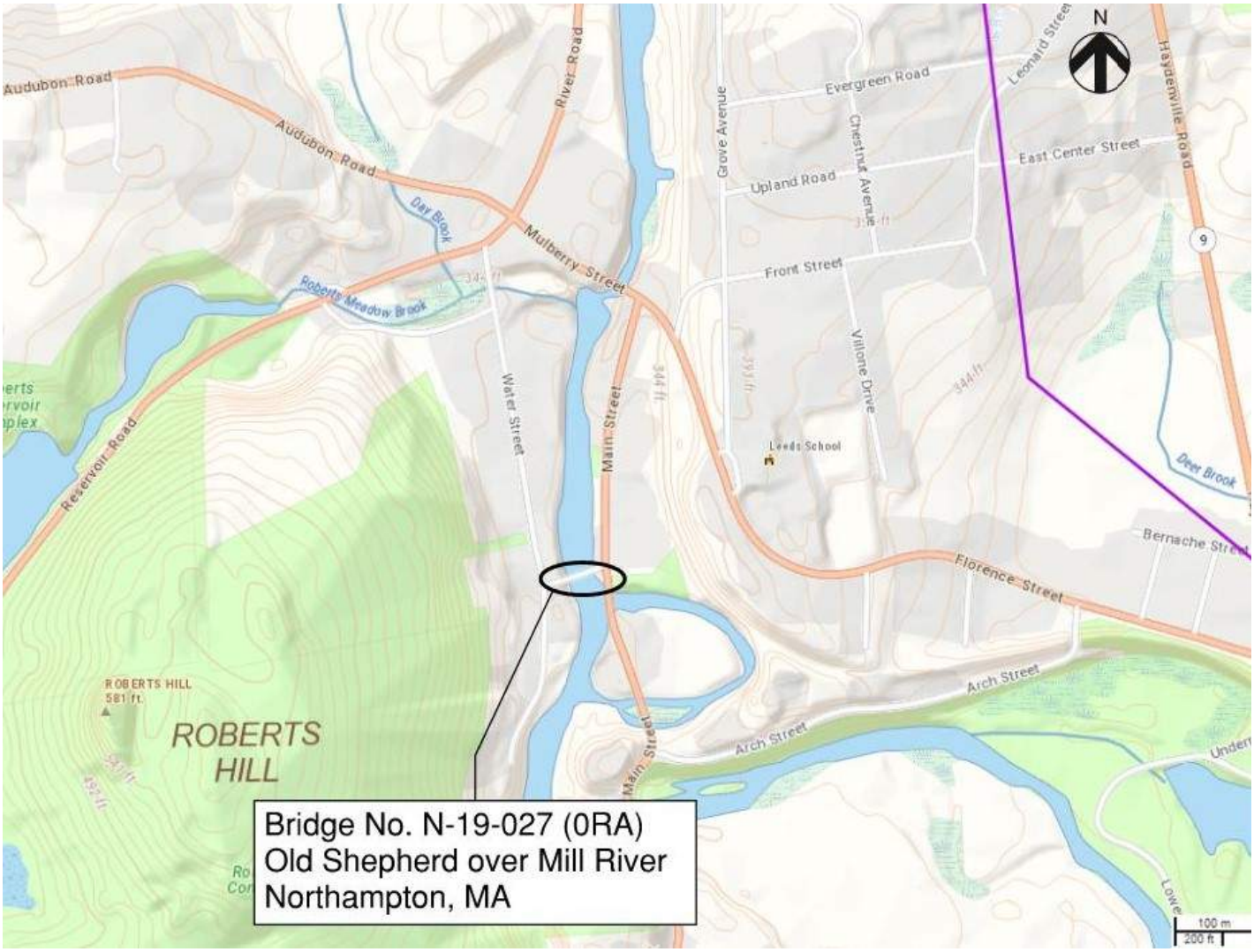
SKETCHES



Sketch 1: Location Map.

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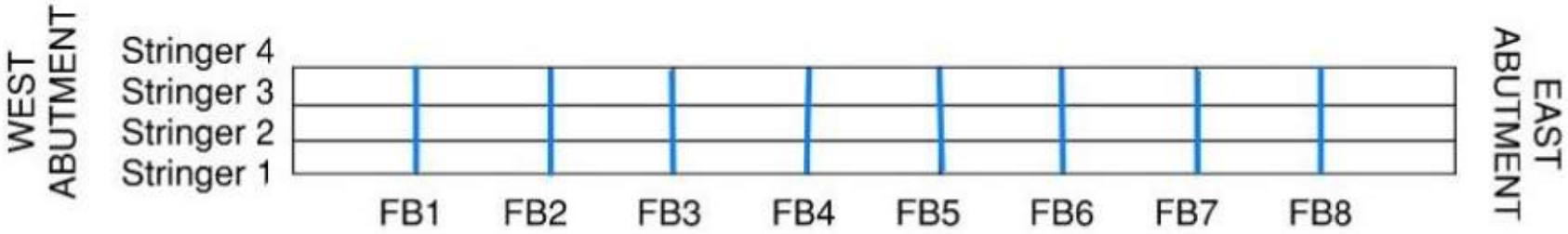

Sketch 2: General Plan. Fracture Critical Members Noted in Blue.

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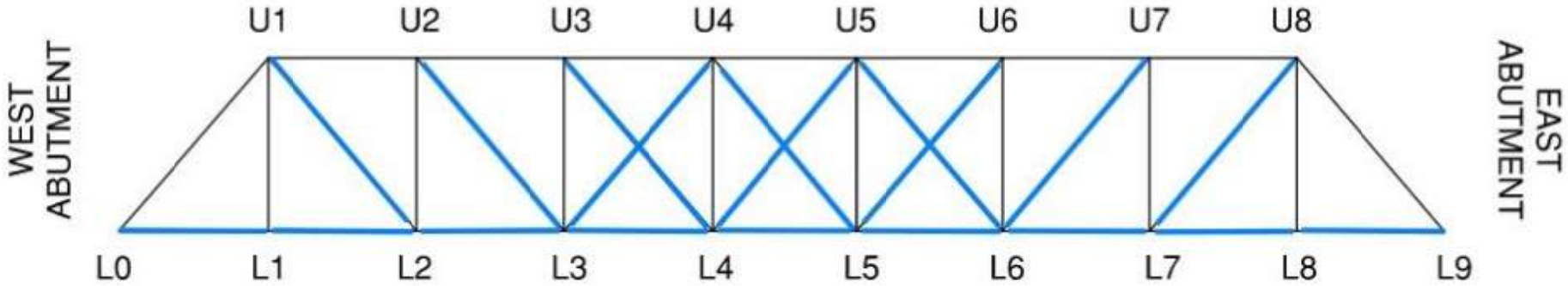
SKETCHES



Sketch 3: Elevation. Fracture Critical Members Noted in Blue.

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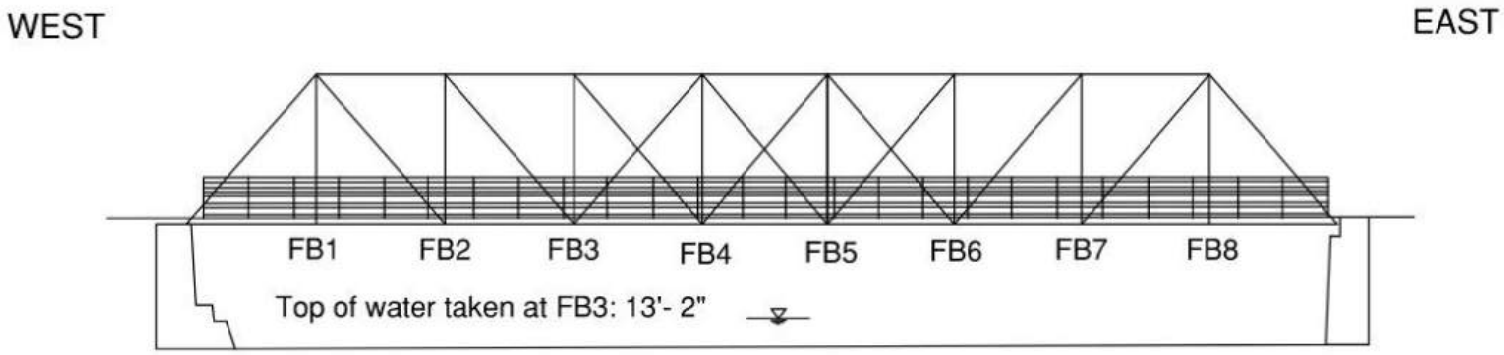

SOUTH ELEVATION

LOCATION ALONG LENGTH	WEST ABUT	FB0	FB1	FB2	FB3	FB4	FB5	FB6	FB7	EAST ABUT
	0	14'-3"	28'-5"	42'-7"	56'-9"	70'-9"	84'-11"	99'-1"	113'-3"	127'-6"
VERTICAL		16'-3"	16'-8"	16'-8"	16'-2"	15'-11"	16'-3"	17'-1"	15'-8"	

NOTE: Measurements taken from top of rail to bottom of streambed. 5'-1" from top of rail to bottom of floorbeam.

Sketch 4: Stream Profile.

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PHOTOS

Photo 1: South elevation, looking north.

Photo 2: North elevation, looking south.

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Photo 3: West approach, looking east.

Photo 4: East approach, looking west.

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PHOTOS

Photo 5: Typical top of deck.

Photo 6: Channel upstream, looking north.

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PHOTOS

Photo 7: Channel downstream, looking south.

Photo 8: General view of underside of the bridge.

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PHOTOS

Photo 9: West abutment (Abutment 1).

Photo 10: East abutment (Abutment 2).

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PHOTOS

Photo 11: Asphalt patch at the west end of the bridge (no joint found).

Photo 12: Load rating sign, located on northeast approach.

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PHOTOS

Photo 13: East approach barriers, looking west.

Photo 14: Typical bridge railing, taken of north railing looking west.

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PHOTOS

Photo 15: Typical approach guardrail, looking south.

Photo 16: 30" from the north side, 10" wide x 4" long hole with 100% section loss to the deck, 102" to the east of Floorbeam 3.

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PHOTOS

Photo 17: On the north side of the deck, east of Floorbeam 5 there are multiple holes.

Photo 18: On the north side of the deck, east of Floorbeam 6 there are multiple holes.

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PHOTOS

Photo 19: **Bay 4, 2'-6" wide, 100% section loss to bottom of corrugated steel deck between Stringers 3 and 4.**

Photo 20: **Midspan of Bay 4, 9"wide x 4" long hole with 100% section loss between Stringers 3 and 4.**

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PHOTOS

Photo 21: **Bay 4, 2'-0" wide hole, 100% section loss to bottom of corrugated steel deck between Stringers 1 and 2.**

Photo 22: **Bay 5, 2'-0" wide hole, 100% section loss to bottom of corrugated steel deck between Stringers 3 and 4.**

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PHOTOS

Photo 23: **Bay 5, north overhang, three (3) 1'-0" wide holes, 100% section loss to bottom of corrugated steel deck.**

Photo 24: **Bay 5, south overhang, an 8" wide hole, 100% section loss to bottom of corrugated steel deck.**

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PHOTOS

Photo 25: Bay 6, north overhang, 12" wide x 6" long hole with 100% section loss to corrugated steel deck.

Photo 26: Bay 6, north overhang, 9" wide x 4" long hole with 100% section loss to corrugated steel deck.

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PHOTOS

Photo 27: Bay 6, north overhang, 7" wide x 5" long hole with 100% section loss to corrugated steel deck.

Photo 28: Bay 6, 10" wide hole, 100% section loss to corrugated steel deck between Stringers 3 and 4.

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PHOTOS

Photo 29: **Bay 7, north overhang, multiple 12" wide sections with 100% section loss to corrugated steel deck.**

Photo 30: **Bay 7, south overhang, multiple 8" wide sections with 100% section loss to corrugated steel deck.**

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PHOTOS

Photo 31: Bay 7, multiple 12" wide sections with 100% section loss to corrugated steel deck (1 of 2).

Photo 32: Bay 7, multiple 12" wide sections with 100% section loss to corrugated steel deck (2 of 2).

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PHOTOS

Photo 33: On the north truss, at Panel Point 5, the cross bracing is deformed and rusting.

Photo 34: On the north truss, at Panel Point 6, the cross bracing is missing.

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PHOTOS

Photo 35: **Both horizontal members and cross-braces are missing for Bay 1, on the south railing.**

Photo 36: **On the south truss, at Panel Point L2 the bottom horizontal bar is unattached from the railing at one end.**

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PHOTOS

Photo 37: **Two lamps on bridge that are attached to top strut. Lamps are broken.**

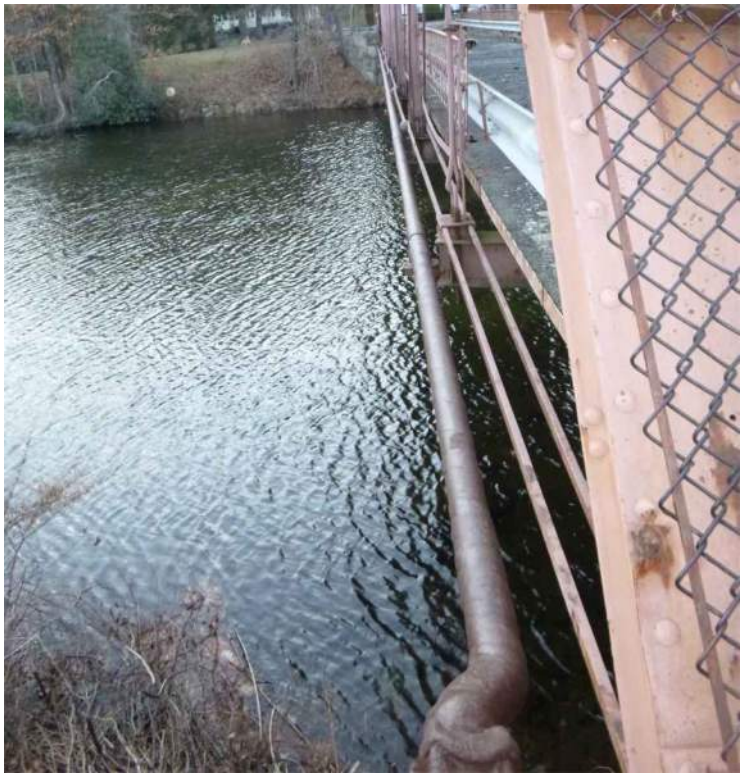

Photo 38: **Along south truss, 4" diameter insulated gas line.**

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PHOTOS

Photo 39: **At the southeast approach there is a sign detailing the gas line attached to the bridge.**

Photo 40: **Bay 2, Stringer 1 at Floorbeam 2 has 100% loss of section to bolt head connecting floorbeam to stringer.**

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PHOTOS

Photo 41: Bay 3, Stringer 4 at Floorbeam 3 has a 6" long by 3" wide hole with 100% loss of section to web.

Photo 42: Bay 5, Stringer 4 at Floorbeam 5 has 75% loss of section to top flange of Stringer 4.

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PHOTOS

Photo 43: Bay 6, Stringer 1 at Floorbeam 5 there is a bird's nest.

Photo 44: Bay 6 , Stringer 1 between Floorbeam 5 and 6 has 75% loss of section to stringer's top flange.

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PHOTOS

Photo 45: **Bay 6, Stringer 4 between Floorbeam 5 and 6 there is 75% loss of section to stringer's top flange, 3' from Floorbeam 5.**

Photo 46: **Bay 7, Stringer 4 at Floorbeam 7 there is 100% loss of section to top flange and web of Stringer 4.**

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PHOTOS

Photo 47: Bay 7, Stringer 1 between Floorbeam 6 and 7 there is 100% loss of section to stringer's top flange.

Photo 48: Bay 7, Stringer 4 at Floorbeam 7 there is 100% loss of section to the top flange and the web of Stringer 4.

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PHOTOS

Photo 49: 1/8" loss of section to the web along the entire length of Floorbeam 1.

Photo 50: 100% loss of section to the top flange of Floorbeam 1 at Stringer 4.

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PHOTOS

Photo 51: **100% loss of section and knife edging at the top flange of the west face of Floorbeam 7 between Stringer 1 and 2.**

Photo 52: **100% loss of section and knife edging at the top flange of the east face of Floorbeam 7 between Stringers 1 and 2.**

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PHOTOS

Photo 53: 100% loss of section and knife edging at the top flange of the east face of Floorbeam 7 at Stringer 4.

Photo 54: Up to 1/4" loss of section to the top flange of Floorbeam 7 between Stringers 2 and 3.

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PHOTOS

Photo 55: **Floorbeam 8, on the south end has up to 50% section loss to the stiffener.**

Photo 56: **North end of Floorbeam 8 has a 3" long by 2" wide corrosion hole in the stiffener. Laminar corrosion has initiated on the lower half of the web adjacent to the stiffener.**

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PHOTOS

Photo 57: There is up to 2" of pack rust at Panel Point U2.

Photo 58: The inside of both c-channels on member U2-U3 have minor to moderate areas of corrosion.

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PHOTOS

Photo 59: **There is up to 2" of pack rust between the top plate and the cover plate at Panel Point U7.**

Photo 60: **There is up to 2" pack rust between the top plate and the top flange of the c-channel at Panel Point U8.**

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PHOTOS

Photo 61: Bird's nest sitting on batten plates near Panel Point U8.

Photo 62: South truss at L9 has 1/8" section loss with active surface corrosion to the end of the interior lower chord eye bar.

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PHOTOS

Photo 63: At the east abutment, north truss, Member L9 exhibits up to 10% section loss to the end of the exterior lower chord eye bar.

Photo 64: On the south truss, on Diagonal U1 to L2 there is a bend in the web member.

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PHOTOS

Photo 65: South truss, Diagonal U2 to L3 there is a bend in the web member.

Photo 66: Strut Member U4 north to U4 south exhibits paint failure and corrosion at midspan.

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PHOTOS

Photo 67: The north U-bolt hanger at Floorbeam 7 has broken at the top of the coupling nuts and has been replaced with a steel cable that connects the floorbeam to the diagonal eyebar member (Photo 1 of 2).

Photo 68: The north U-bolt hanger at Floorbeam 7 has broken at the top of the coupling nuts and has been replaced with a steel cable that connects the floorbeam to the diagonal eyebar member (Photo 2 of 2).

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PHOTOS

Photo 69: **Stringer 1 bearing on east abutment has heavy debris buildup on bearing.**

Photo 70: **By Stringer 3 on the south side the abutment is completely covered with asphalt.**

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PHOTOS

Photo 71: Under Stringer 2 the grout has completely failed.

Photo 72: The grout under Stringer 4 at the west abutment is cracked, but the anchor bolt is in good condition.

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PHOTOS

Photo 73: **The Stringer 1 bearing stiffener at Floorbeam 2, has up to 100% loss of section to the horizontal rivet heads on top of the floorbeam/stringer connection.**

Photo 74: **The east abutment has 42" wide x 27" long x 24" deep spall with exposed and corroded rebar at south end of the truss.**

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PHOTOS

Photo 75: **At the east abutment by the north end of truss there is vegetation growth.**

Photo 76: **Between Stringers 2 and 3 at the east backwall there is a 3' wide by 1" high by 2" deep spall. There is scaling on the backwall.**

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PHOTOS

Photo 77: **The east abutment between Stringers 1 and 2 has missing mortar and scaling at the top 2 feet of the abutment.**

Photo 78: **The west abutment is missing mortar and has failed pointing. There is typical cracked pointing and vegetation growth in joints (Photo 1 of 2).**

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PHOTOS

Photo 79: **The west abutment is missing mortar and has failed pointing. There is typical cracked pointing and vegetation growth in joints (Photo 2 of 2).**

STRUCTURES INSPECTION FIELD REPORT

FRACTURE CRITICAL INSPECTION

2-DIST	B.I.N.	BR. DEPT. NO.
02	0RA	N-19-027

CITY/TOWN	8.-STRUCTURE NO.	11-Kilo. POINT	90-ROUTINE INSP. DATE	93a - F.C. INSP. DATE
NORTHAMPTON	N19027-0RA-MUN-CLO	000.032	Nov 29, 2021	Nov 29, 2021

07-FACILITY CARRIED	MEMORIAL NAME/LOCAL NAME	27-YR BUILT	106-YR REBUILT	*YR REHAB'D (NON 106)
HWY OLD SHEPHERD		1876	0000	0000

06-FEATURES INTERSECTED	26-FUNCTIONAL CLASS	DIST. BRIDGE INSPECTION ENGINEER M. Barrett
WATER MILL RIVER	Urban Local	

43-STRUCTURE TYPE	22-OWNER	21-MAINTAINER	TEAM LEADER S. Saelim	PROJ MGR HDR
910 : Iron or Aluminum Truss - Thru	City/ Municipal Highway A	City/ Municipal Highway A	Suthichai Saelim	

107-DECK TYPE	WEATHER	TEMP. (air)	TEAM MEMBERS
6 : Corrugated Steel	Cloudy	2°C	L. QURREH ليث القرة

WEIGHT POSTING — *Not Applicable* ☐

	H	3	3S2	Single
Actual Posting	03	03	03	03
Recommended Posting	N	N	N	N

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

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

Legibility/ Visibility

	At bridge E	At bridge W	Advance E	Advance W
Signs In Place	Y	N	N	N
Legibility/ Visibility	1/1			

PLANS (Y/N): Y

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

TAPE#:

RATING

Rating Report (Y/N): N Date: ----

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

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

REASON:

Inspection data at time of existing rating

I 58: - I 59: - I 60: - I 62: Date : 00/00/0000

FRACTURE CRITICAL MEMBER(S):

	MEMBER	CRACK (Y/N):	WELD'S CONDITION (0-9)	LOCATION OF CORROSION, SECTION LOSS (%), CRACKS, COLLISION DAMAGE, STRESS CONCENTRATION, ETC.	CONDITION PREVIOUS (0-9)	CONDITION PRESENT (0-9)	INV. RATING OF MEMBER FROM RATING ANALYSIS H-20	3	3S2	Deficiencies
A	Item 59.2 - Floorbeams	N	N	See remarks in comments section.	N	2	0	0	0	S-A
B	Item 59.5.b - Lower Chords	N	N	See remarks in comments section.		3	0	0	0	M-P
C	Item 59.5.c - Web Members	N	N	See remarks in comments section.		3	0	0	0	-
D	Item 59.6 - Pin & Hangers	N	N	See remarks in comments section.		2	0	0	0	S-A
E										

List of field tests performed:

Hands-On

	I-59	I-60
(Overall Previous Condition)	2	6
(Overall Current Condition)	2	5

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

CATEGORIES OF DEFICIENCIES:

M= Minor Deficiency - Deficiencies which are minor in nature, generally do not impact the structural integrity of the bridge and could easily be repaired. Examples include but are not limited to: Spalled concrete, Minor pot holes, Minor corrosion of steel, Minor scouring, Clogged drainage, etc.

S= Severe/Major Deficiency - Deficiencies which are more extensive in nature and need more planning and effort to repair. Examples include but are not limited to: Moderate to major deterioration in concrete, Exposed and corroded rebars, Considerable settlement, Considerable scouring or undermining, Moderate to extensive corrosion to structural steel with measurable loss of section, etc.

C-S= Critical Structural Deficiency - A deficiency in a structural element of a bridge that poses an extreme unsafe condition due to the failure or imminent failure of the element which will affect the structural integrity of the bridge.

C-H= Critical Hazard Deficiency - A deficiency in a component or element of a bridge that poses an extreme hazard or unsafe condition to the public, but does not impair the structural integrity of the bridge. Examples include but are not limited to: Loose concrete hanging down over traffic or pedestrians, A hole in a sidewalk that may cause injuries to pedestrians, Missing section of bridge railing, etc.

URGENCY OF REPAIR:

I = Immediate- [Inspector(s) immediately contact District Bridge Inspection Engineer (DBIE) to report the Deficiency and to receive further instruction from him/her].

A = ASAP- [Action/Repair should be initiated by District Maintenance Engineer or the Responsible Party (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].

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

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REMARKS

BRIDGE ORIENTATION

Bridge No. N-19-027 (0RA) is a single span through trusses bridge that carries Old Shepherd Road over the Mill River, flowing north to south in the Town of Northampton, MA. **See Sketch 1**. The superstructure is comprised of two (2) trusses with wrought iron stringers and floorbeams, supporting a corrugated steel deck with an asphalt wearing surface.

The substructure consists of two (2) stone abutments. Each abutment consists of a backwall, bridge seat, and breastwall. The east abutment has steel bearing plates that are encased in concrete at each stringer.

The bridge is oriented west to east. The trusses are designated as north and south. The truss lower chord panel points are labeled L0 to L9. The truss upper chord panel points are labeled U1 to U8, corresponding to the appropriate lower chord panel point. The floorbeams are numbered 1 to 8 from west to east. The stringers are numbered 1 to 4 from south to north. The nomenclature follows the original design plans. **See Sketches 2 and 3.**

GENERAL REMARKS

GENERAL ACCESS NOTES

The underside of the bridge was inspected using a floating scaffolding platform and an extension ladder. The abutments and the truss members were inspected using an extension ladder.

The bridge is currently closed to all traffic including pedestrian traffic. MassDOT was informed of critical findings on the day of the inspection.

IDENTIFICATION OF FRACTURE CRITICAL MEMBERS (FCM'S)

The fracture critical members for this bridge are the floorbeams, pin and hangers, bottom chords and web members. These members are non-redundant and are loaded in tension. A routine inspection was performed in conjunction with this fracture critical inspection. Refer to the routine inspection of the same date for findings of all other elements. For specific locations of the fracture critical members, refer to **Sketch 2 and 3**.

GENERAL DESCRIPTION OF FRACTURE CRITICAL INSPECTION

No Fracture Critical Procedures exist for this bridge. A hands-on fracture critical inspection was performed on all fracture critical members identified. **Refer to Sketch 2 and 3**. Fatigue sensitive details (FSD's) along each fracture critical element were identified. For descriptions of FSD's, see below and refer to **Sketch 5**.

i) 2.4 (Category E): Base metal at the net section of eyebar heads. Hands-on inspection of eyebars was performed at the following locations: bottom chord and web member pins.

ITEM 59 - SUPERSTRUCTURE

Item 59.2 - Floorbeams

Floorbeams exhibit 1/16" section loss to the top and bottom flanges as well as paint failure and corrosion to the web. The majority of floorbeams exhibit knife edging to flanges. **(DEF=S/A) There are areas where the floorbeams have section loss up to 100%.** Specific details are listed below.

Floorbeam 1:

- 1/8" loss of section to the web along the entire length of the floorbeam. **See Photo 1.**
- 100% loss of section to the top flange of the floorbeam at Stringer 4. **See Photo 2.**

Floorbeam 2:

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REMARKS

Item 59.2 - Floorbeams (Cont'd)

- The top flange of Floorbeam 2 between Stringers 1 and 2 exhibits widespread section loss of 1/8" with areas of deeper loss of 1/4".

Floorbeam 7:

- 100% loss of section and knife edging at the top flange of the west face of the floorbeam between Stringers 1 and 2. **See Photo 3.**
- 100% loss of section and knife edging at the top flange of the east face of the floorbeam between Stringers 1 and 2. **See Photo 4.**
- 100% loss of section and knife edging at the top flange of the east face of the floorbeam at Stringer 4. **See Photo 5.**
- Up to 1/4" loss of section to the top flange the floorbeam between Stringers 2 and 3. **See Photo 6.**

Floorbeam 8:

- South end of Floorbeam 8 has up to 50% section loss to the bottom of the end stiffener. **See Photo 7.** North end of Floorbeam 8 has a 3" long by 2" wide corrosion hole in the stiffener. Laminar corrosion has initiated on the lower half of the web adjacent to the stiffener. **See Photo 8.**

Item 59.5 - Trusses - General
Item 59.5.b - Lower Chords
The truss lower chords are typically in good condition with random areas of light corrosion throughout. South truss at L9 has 1/8" section loss with active surface corrosion to the end of the interior lower chord eye bar. **See Photo 9.** At the east abutment, north truss, Member L9 exhibits up to 10% section loss to the end of the exterior lower chord eye bar. **See Photo 10.**

Item 59.5.c - Web Members
The truss web members are typically in good condition with random areas of light corrosion throughout with no measurable section loss. In the south truss, Members U1-L2 at 5'-0" from L2 and U2-L3 at 5'-0" from L3 are bent. **See Photos 11 and 12.**

Item 59.6 - Pin & Hangers
The pins in the hanger assemblies are in generally satisfactory condition with minor surface corrosion and paint failure. **(DEF=S/A) The north U-bolt hanger at Floorbeam 7 has broken at the top of the coupling nuts and has been replaced with a steel cable that connects the floorbeam to the diagonal eyebar member. See Photos 11 and 12.** The remainder of the pin and hanger members are typically in good condition with random areas of light corrosion throughout.

Sketch / Photo Log
Sketch 1 : Location Map.
Sketch 2 : General Plan. Fracture Critical Members Noted in Blue.
Sketch 3 : Elevation. Fracture Critical Members Noted in Blue.
Sketch 4 : AASHTO Fatigue Category Details.
Photo 1 : 1/8" loss of section to the web along the entire length of the Floorbeam 1.
Photo 2 : 100% loss of section to the top flange of Floorbeam 1 at Stringer 4.
Photo 3 : 100% loss of section and knife edging at the top flange of the west face of Floorbeam 7 between Stinger 1 and 2.
Photo 4 : 100% loss of section and knife edging at the top flange of the east face of Floorbeam 7 between Stringers 1 and 2.
Photo 5 : 100% loss of section and knife edging at the top flange of the east face of Floorbeam 7 at Stringer 4.

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REMARKS

Sketch / Photo Log (Cont'd)

Photo 6 : Up to 1/4" loss of section to the top flange of Floorbeam 7 between Stringers 2 and 3.
Photo 7 : Floorbeam 8, on the south end has up to 50% section loss to the stiffener.
Photo 8 : North end of Floorbeam 8 has a 3" long by 2" wide corrosion hole in the stiffener. Laminar corrosion has initiated on the lower half of the web adjacent to the stiffener.
Photo 9 : South truss at L9 has 1/8" section loss with active surface corrosion to the end of the interior lower chord eye bar.
Photo 10 : At the east abutment, north truss, Member L9 exhibits up to 10% section loss to the end of the exterior lower chord eye bar.
Photo 11 : On the south truss, on Diagonal U1 to L2 there is a bend in the web member.
Photo 12 : South truss, Diagonal U2 to L3 there is a bend in the web member.
Photo 13 : The north U-bolt hanger at Floorbeam 7 has broken at the top of the coupling nuts and has been replaced with a steel cable that connects the floorbeam to the diagonal eye-bar member (Photo 1 of 2).
Photo 14 : The north U-bolt hanger at Floorbeam 7 has broken at the top of the coupling nuts and has been replaced with a steel cable that connects the floorbeam to the diagonal eye-bar member (Photo 2 of 2).

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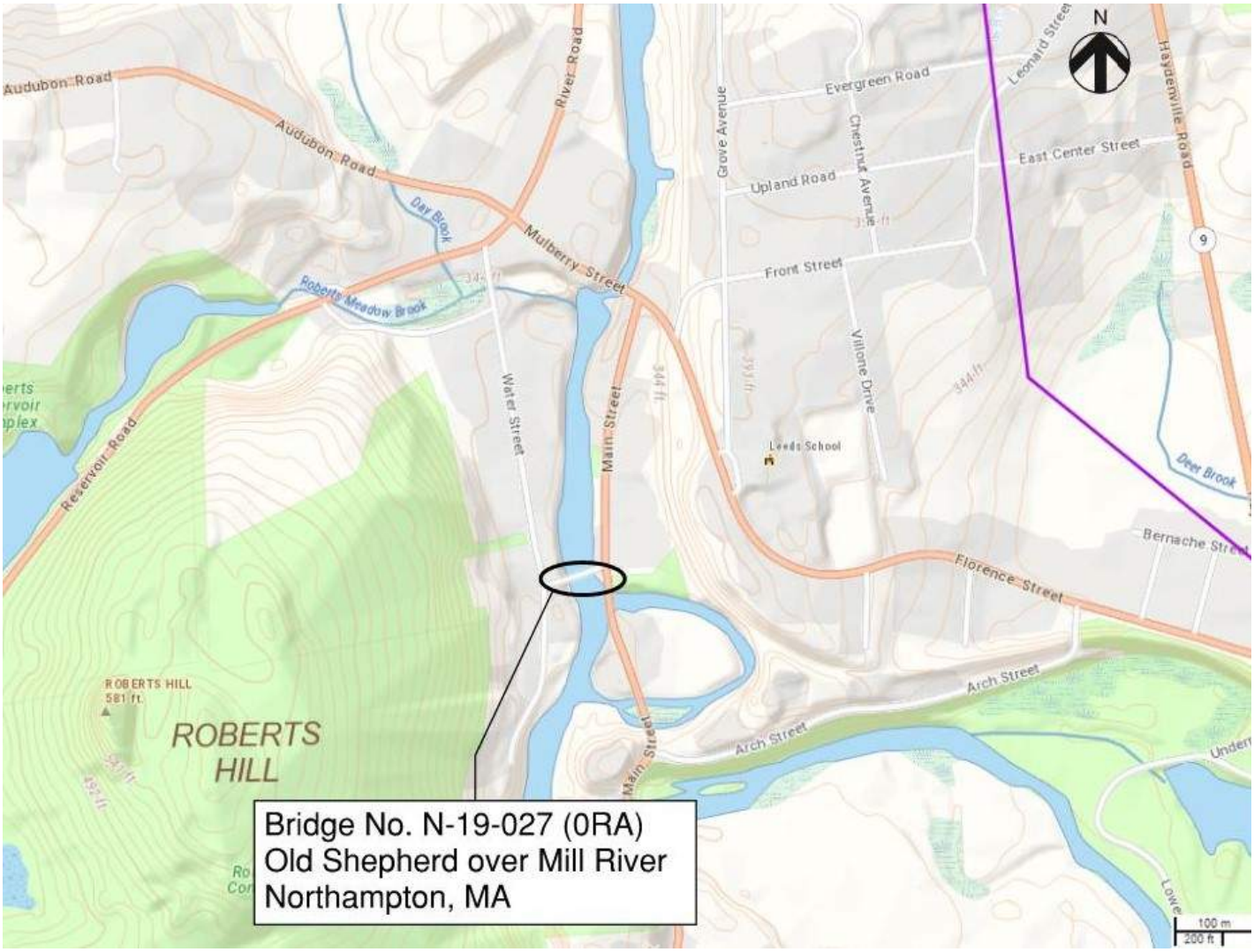
SKETCHES



Sketch 1: Location Map.

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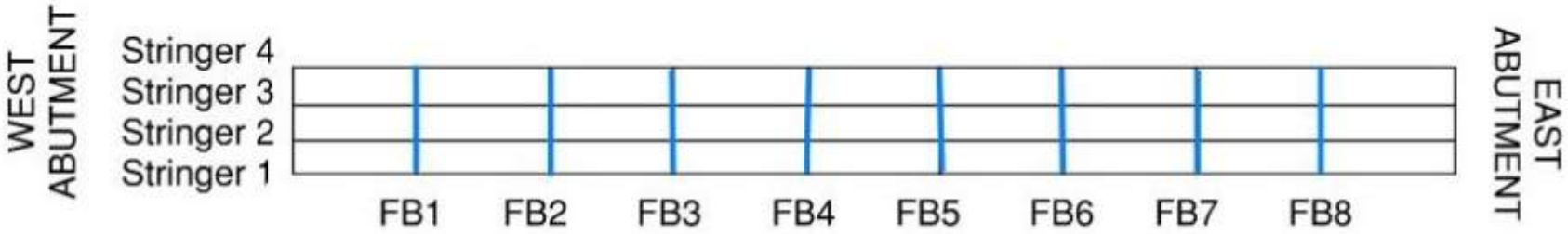
SKETCHES



Sketch 2: General Plan. Fracture Critical Members Noted in Blue.

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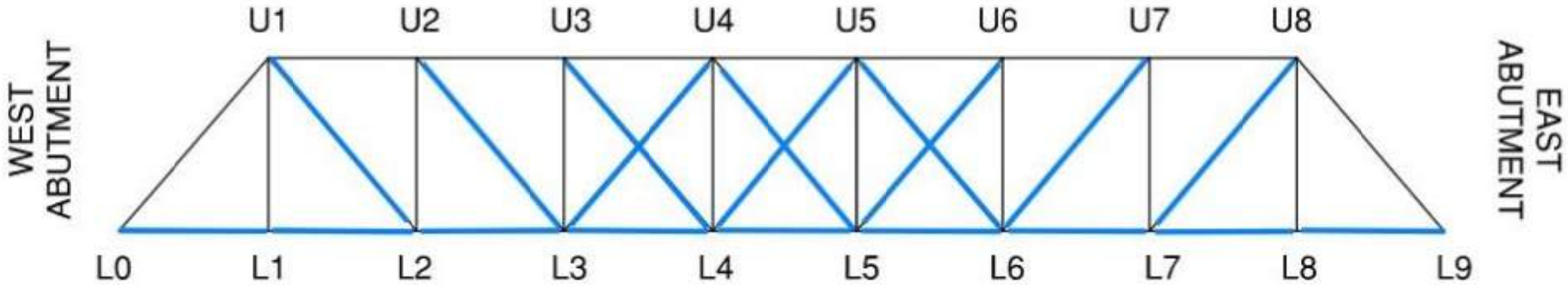
SKETCHES



Sketch 3: Elevation. Fracture Critical Members Noted in Blue.

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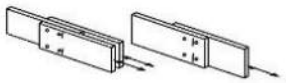
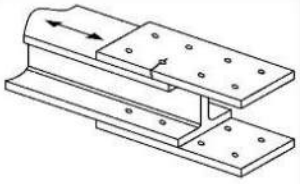
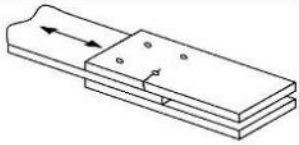
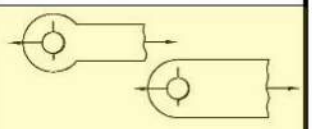
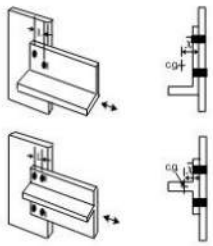
Table 6.6.1.2.3-1 (cont.)—Detail Categories for Load-Induced Fatigue

Description	Category	Constant A $(ksi)^3$	Threshold $(\Delta F)_{TH}$ ksi	Potential Crack Initiation Point	Illustrative Examples
Section 2—Connected Material in Mechanically Fastened Joints					
2.1 Base metal at the gross section of high-strength bolted joints designed as slip-critical connections with pretensioned high-strength bolts installed in holes drilled full size or subpunched and reamed to size—e.g., bolted flange and web splices and bolted stiffeners. (Note: see Condition 2.3 for bolt holes punched full size; see Condition 2.5 for bolted angle or T-section member connections to gusset or connection plates.)	B	120×10^8	16	Through the gross section near the hole	
2.2 Base metal at the net section of high-strength bolted joints designed as bearing-type connections but fabricated and installed to all requirements for slip-critical connections with pretensioned high-strength bolts installed in holes drilled full size or subpunched and reamed to size. (Note: see Condition 2.3 for bolt holes punched full size; see Condition 2.5 for bolted angle or T-section member connections to gusset or connection plates.)	B	120×10^8	16	In the net section originating at the side of the hole	
2.3 Base metal at the net or gross section of high-strength bolted joints with pretensioned bolts installed in holes punched full size (Brown et al., 2007); and base metal at the net section of other mechanically fastened joints, except for eyebars and pin plates, e.g., joints using ASTM A307 bolts or non-pretensioned high-strength bolts. (Note: see Condition 2.5 for bolted angle or T-section member connections to gusset or connection plates).	D	22×10^8	7	In the net section originating at the side of the hole or through the gross section near the hole, as applicable	
2.4 Base metal at the net section of eyebar heads or pin plates (Note: for base metal in the shank of eyebars or through the gross section of pin plates, see Condition 1.1 or 1.2, as applicable.)	E	11×10^8	4.5	In the net section originating at the side of the hole	
2.5 Base metal in angle or T-section members connected to a gusset or connection plate with high-strength bolted slip-critical connections. The fatigue stress range shall be calculated on the effective net area of the member, $A_e = UA_n$, in which $U = (1-\bar{X}/L)$ and where A_g is the gross area of the member. $\bar{X}$ is the distance from the centroid of the member to the surface of the gusset or connection plate and L is the out-to-out distance between the bolts in the connection parallel to the line of force. The effect of the moment due to the eccentricities in the connection shall be ignored in computing the stress range (McDonald and Frank, 2009). The fatigue category shall be taken as that specified for Condition 2.1. For all other types of bolted connections, replace A_g with the net area of the member, A_n, in computing the effective net area according to the preceding equation and use the appropriate fatigue category for that connection type specified for Condition 2.2 or 2.3, as applicable.	See applicable Category above	See applicable Constant above	See applicable Threshold above	Through the gross section near the hole, or in the net section originating at the side of the hole, as applicable	

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Sketch 4: AASHTO Fatigue Category Details.

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PHOTOS

Photo 1: **1/8" loss of section to the web along the entire length of the Floorbeam 1.**

Photo 2: **100% loss of section to the top flange of Floorbeam 1 at Stringer 4.**

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PHOTOS

Photo 3: **100% loss of section and knife edging at the top flange of the west face of Floorbeam 7 between Stinger 1 and 2.**

Photo 4: **100% loss of section and knife edging at the top flange of the east face of Floorbeam 7 between Stringers 1 and 2.**

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PHOTOS

Photo 5: **100% loss of section and knife edging at the top flange of the east face of Floorbeam 7 at Stringer 4.**

Photo 6: **Up to 1/4" loss of section to the top flange of Floorbeam 7 between Stringers 2 and 3.**

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PHOTOS

Photo 7: **Floorbeam 8, on the south end has up to 50% section loss to the stiffener.**

Photo 8: **North end of Floorbeam 8 has a 3" long by 2" wide corrosion hole in the stiffener. Laminar corrosion has initiated on the lower half of the web adjacent to the stiffener.**

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PHOTOS

Photo 9: **South truss at L9 has 1/8" section loss with active surface corrosion to the end of the interior lower chord eye bar.**

Photo 10: **At the east abutment, north truss, Member L9 exhibits up to 10% section loss to the end of the exterior lower chord eye bar.**

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PHOTOS

Photo 11: On the south truss, on Diagonal U1 to L2 there is a bend in the web member.

Photo 12: South truss, Diagonal U2 to L3 there is a bend in the web member.

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PHOTOS

Photo 13: **The north U-bolt hanger at Floorbeam 7 has broken at the top of the coupling nuts and has been replaced with a steel cable that connects the floorbeam to the diagonal eye-bar member (Photo 1 of 2).**

Photo 14: **The north U-bolt hanger at Floorbeam 7 has broken at the top of the coupling nuts and has been replaced with a steel cable that connects the floorbeam to the diagonal eye-bar member (Photo 2 of 2).**