

City of Waltham Massachusetts Community Preservation Act Historic, Open Space and Recreation Funding Application WCPA-1



APPLICANT INFORMATION

Name of Applicant ⁽¹⁾ City of Waltham

Name of Co-Applicant, if applicable ⁽¹⁾ _____

Contact Name Michael Chiasson / Stew LaCrosse

Mailing Address 165 Lexington Street
Waltham, MA

Daytime Phone (i.e. of Proposal Applicant) 781-314-3800

PROJECT BASICS

Address of Project (or Assessor's Parcel ID) Behind 130 River Street
The Mary T. Early Footbridge

CPA Category (check all that apply):

- Open space
- Historic preservation
- Open space recreation
- Community Housing (You must also complete Application WCPA-2)

CPA Funding Requested \$ 99,000.00

Total Cost of Proposed Project \$ 99,000.00

PROJECT DESCRIPTION

Attach answers to the following questions. Applications will be returned as incomplete if all requested information is not provided. Include supporting materials as necessary.

GOALS: What are the goals of the proposed project?

COMMUNITY NEED: Why is this project needed? Does it address needs identified in existing City plans?

COMMUNITY SUPPORT: What is the nature and level of support for this project? Include letters of support and any petitions.

TIMELINE: What is the schedule for project implantation? Include a timeline for all critical items for their

completion.

CREDENTIALS: How will the experiences of the Applicant(s) contribute to the success of this project?
Success Factors: How will the success of this project be measured? Be specific.

BUDGET: What is the total budget for this project? How will the CPA funds portion be spent? All items of expenditure must be clearly identified and justified. Detail the hard and soft costs. Identify contingencies.

OTHER FUNDING: What additional funding sources are available, committed, or under consideration? Include commitment letters if available. Identify all sources of other funding which have been sought for this project and the status of the requests.

MAINTENANCE: If ongoing maintenance is required for your project, how will it be funded? (Note that CPA Funds may not be used for maintenance, but maintenance is an important consideration for all projects.)

ADDITIONAL INFORMATION

Provide the following additional information, *as applicable*.

DOCUMENTATION: Provide written documentation that you have control over the site, such as Purchase and Sale Agreement, option, or deed.

CONSTRUCTION OR REHABILITATION: ⁽²⁾ For projects with construction or rehabilitation, provide floor plans, elevations including the existing and proposed site plan(s), and any additional drawings or photographs which visually describe the project.

ZONING: Provide evidence that the project is in compliance with the current City Zoning Ordinance as Amended, as well as all other laws and regulations. If zoning relief is required, note the parts of the proposal not in compliance with the Zoning Ordinance, and when an application will be made to the Zoning Board of Appeals.

CITY APPROVALS: Provide evidence that the appropriate City Boards and Commissions approve of the project (Waltham Historical Commission for Historic, Conservation Commission for Open Space, Park & Recreation Board for Recreation, and Waltham Housing Authority for Community Housing). As an example, a project in a City park would require that the Park & Recreation Board accept the project.

HAZARDOUS MATERIALS: Provide evidence that the proposed site is free of hazardous materials or that there is a plan for remediation in place.

PROFESSIONAL STANDARDS: Provide evidence that appropriate professional standards will be followed if construction, restoration, or rehabilitation is proposed.

LEVERAGED ADDITIONAL BENEFITS: Provide information indicating how this project can be used to achieve additional community benefits.

Notes:

(1) City Property: If the proposal is located on City-owned land, either the Applicant or Co-Applicant must be the City Board, Commission or Department that has custody of the land.

(2) Appraisals: If the requested funds are for a real estate acquisition, an independent appraisal will be required which the Applicant will be required to fund. No funding decisions will be made without an independent appraisal. Additional appraisals may be required for final approval.

FOR COMMUNITY PRESERVATION COMMITTEE USE ONLYApplication received on 3-2-2021Application received by Julie TooleDate Project presented to CPC for Submission Acceptance Process 3-2-2021Was Project accepted for Consideration? YesIf accepted for Consideration, Project Public Hearing date 3-9-2021

Following meeting Date for decision to recommend for funding _____

Was project recommended for funding to the City Council? _____

Was project funded by the City Council? _____

If project funded by the City Council, for how much? _____

Date funding Contract signed with applicant _____

APPLICATION SUBMISSION REQUIREMENTS

Proposals for Community Preservation Act funding must be submitted using the City of Waltham's Application forms WCPA-1 and WCPA-2.

If the proposal is exclusively a community housing project, applicants must submit WCPA-2. If the proposal combines community housing with any other funding category, both WCPA-2 and the WCPA-1 must be submitted. Otherwise applicants can submit just WCPA-1.

All information requested on the application forms must be included with the proposal at the time of submission or it will not be accepted for consideration. Applications may not include any handwritten information.

Applications and all supporting documentation must be submitted as hardcopy with eleven (11) copies (including one unbound for reproduction) to the official mailing address as specified in Article VI. If an Application is recommended for funding by the CPC, then an additional 17 copies must be provided for use by the City Council.

Applicants are encouraged to include any maps, diagrams, and/or photographs pertaining to the project. Letters of support for the project from community organizations or other sources may also be submitted.

Applicants will also submit an electronic version of each and every document submitted in their application if available, either on CD or USB flash drive, preferably in Portable Document Format (PDF) or other commonly used file formats (eg. .doc, .docx, .xls, .xlsx, .jpeg).

Applicants should include actual quotes for project costs whenever possible. If not available, estimates may be used, provided the basis of the estimate is fully explained.

Applicants should pursue matching or supplemental funds from state, federal and/or private sources when available.

Applicants should detail who will be responsible for project implementation and management. Their relevant experience should be included in the narrative. Please be sure that project management costs have been included in the overall project budget.

The Mary Early foot Bridge

PROJECT DESCRIPTION

Decking and Railing Replacement :

The City of Waltham Consolidated Public Works Department thru the Purchasing Department hired an Engineering Firm to perform Safety Inspection Services, and Repair / Rehabilitating Recommendations for the Mary Early Pedestrian Bridge which spans the Charles River at 130 River Street. This action was a result of both a City Council Resolution (attached), and complaints from users about unsafe decking and rails.

The CPW after reviewing the recommendations of the engineering consultant (see attached report) That the sub structure built in 2004 was structurally secure but the decking was cracking, smooth and slippery and not the best application for this use. The consultant recommended some alternative decking options. We selected IPE Decking. It is an extremely dense, tight grained wood. Generally, a deep rich brown with some pieces displaying red and amber hues. It is a very durable and naturally resistant to decay and insects. Offers up to 75+ lifespan. This decking was used on the Joseph Thompson foot Bridge in Watertown, crossing over the Charles just before Watertown Square. Railings not secure and the top rail will be replaced with the same decking material. (Spec sheet attached)

Goals : To enhance the safety and esthetics of the Mary Early foot Bridge.

Community Need : This foot bridge connects the River Street and Willow Street neighborhoods to the Calvary Street neighborhood for foot traffic, joggers, bikers, and for the residents to shop at the plaza without driving around the block.

The Path also leads to the Riverwalk connecting Waltham to Watertown to the east and Newton to the west.

Community Support : The Waltham City Council wrote a Resolution on June 24, 2019 asking that the Footbridge built in 1898, and repaired and renamed in 2004 have the decking repaired again.

Timeline : The timeline has been delayed due to the current pandemic. However, the CPW has been moving forward with the Structural Review of the bridge. The immediate safety issues were repaired last year in June. We have put this out for Quotes as we navigate the funding process.

Credentials : The engineering Firm's report and Plans are attached.

Budget : \$ 90,000.00

Contingency : \$9,000.00

Total Funds Requested : \$ 99,000.00

Other Funding : None

Maintenance : The City is responsible for the maintenance after improvements.

Documentation : See attached atlas

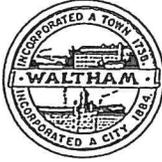
Construction or Rehabilitation : Plans attached.

Zoning : Existing Structure / Repair only

City Approvals : City Council, Mayor in addition to Building Department. Notify DCR. Con Com :
Determination

Hazardous Materials: None known.

Professional Standards: Please see links below.



Resolution

IN THE CITY COUNCIL

IN THE YEAR TWO THOUSAND NINETEEN

Whereas . . . The City of Waltham by Order No. 4041, adopted by the Waltham Board of Alderman on November 8th, 1898 and signed by Mayor Mayberry on November 19th, 1898, ordered the "laying out and taking for public purposes a public path and footbridge off Calvary Street," and

Whereas . . . In 2004 the City of Waltham rebuilt the Calvary Street Footbridge and renamed it the Mary T. Early Footbridge, and

Whereas . . . After fifteen (15) years, the recycled plastic decking on the Mary T. Early Footbridge is now cracking and in need of replacement, and

Whereas . . . By Order No. 33773, Read and Adopted on June 26, 2017, care and control of the Mary Early Foot Bridge and the adjoining city owned paths was assigned to the Consolidated Public Works Department, now therefore

Be it Resolved . . .

That the Waltham Consolidated Public Works Department should replace the recycled plastic decking on the Mary T. Early Footbridge as soon as possible.

Respectfully submitted:


Robert G. Logan, Councillor Ward 9


Joseph P. LaCava, Councillor Ward 5

Read and Adopted June 24, 2019

Attest: 
Robert J. Waddick
City Clerk

M E M O R A N D U M

To: Stew LaCrosse

From: Bob Livermore, RA
Evan Hankin, PE

Re: Mary T. Early Pedestrian Bridge
Existing Conditions Report

Date: 2/20/20

BACKGROUND

The Mary T. Early Bridge is a pedestrian bridge that spans the Charles River approximately behind the Shaw's Super Market at 130 River Street in Waltham. The bridge is approximately 279 feet long and 8'-6" wide. It is constructed of wood framing on top of pilings founded in the riverbed with a deck of composite planking and infill metal screens at the rails. The existing structure has been in place for a significant number of years and signs of deterioration have appeared that have been noticed by the public and the Waltham Public Works. There has been concern expressed for public safety and the longevity of the structure. This report, prepared at the request of the Department of Public Works, is intended to provide information regarding its safety and to recommend steps that could be taken to approve its appearance and its longevity.

SITE REVIEW

The consultant team visited the site to review and bridge structure, observe areas of deterioration and measure and record the various bridge elements. The following observations were recorded:

- The decking on the bridge, consisting of 5 1/2" x 1 1/4" composite planking, had developed cracking transversely across the planks where the original face screws had attached the planks to the joists below. In some cases this planking had cracked clear through the material causing the plank to become loose and allowing water to penetrate into the plank and onto the joist supports below. In most areas the decking had remained in place and as it was still supported by the joists below created no immediate hazard. One section of plank between two supports had become completely loose and needed to be reattached. Maintenance over time had required additional screws alongside the original screws at similar locations to stabilize the loose planks further weakening them. It appeared that the face attachment method created a weakness in the plank over time by not allowing them to move under different temperature conditions and allowing water to penetrate and freeze within the plank.

- While the original wood railing elements were seen to be robust and structurally strong in their attachment detailing some of the pieces of the framing had developed splitting and warping due to the effects of the rainwater penetration over time into existing knots and splits in the material. In general, though, in most areas the wood framing was still strong and undamaged and the galvanized metal attachment angles in very good condition.
- Perhaps the element that had seen the most deterioration was the continuous railing cap that had been attached across the top of the posts. Typically railing caps are beveled to shed water to the sides but in this case the caps were level creating opportunity for the water to collect there and allow the wood to warp, crack and weather excessively. It had created a rough and splintered surface that was too rough and dangerous to run your hand along.
- The side railing height was measured at 42". This height is considered the proper height by the building code for a "guard" intended to keep people from falling over it. This would meet safety standards for public construction although in reviewing the new pedestrian bridge recently constructed near Watertown Square we noticed that rails on this bridge were 55" tall. Perhaps this was intended to more adequately protect users from accidentally falling over or climbing on the railings.
- The consultant team visually inspected the sub-structure and pilings supporting the bridge deck and measured and recorded the spans and beam sizes. (see attached drawing A0-1). All of these elements appeared to be in good shape and properly sized for their structural roles (see the structural report attached).

SUMMARY

The consultants' review the existing conditions of the bridge did not find structural or dangerous conditions that the City should be immediately concerned about. Rather it seemed that the railings and deck elements had the appearance of being in a deteriorated condition which might create concerns about the safety of the bridge.

It is recommended as the next step that the consultants prepare alternatives for the City review that would include a new railing cap replacement and new alternative replacement decking solutions. Other specific railing locations that show damage or weathering would be identified in the report for replacement with matching materials to the original construction. The report will include cost scenarios for each alternative.



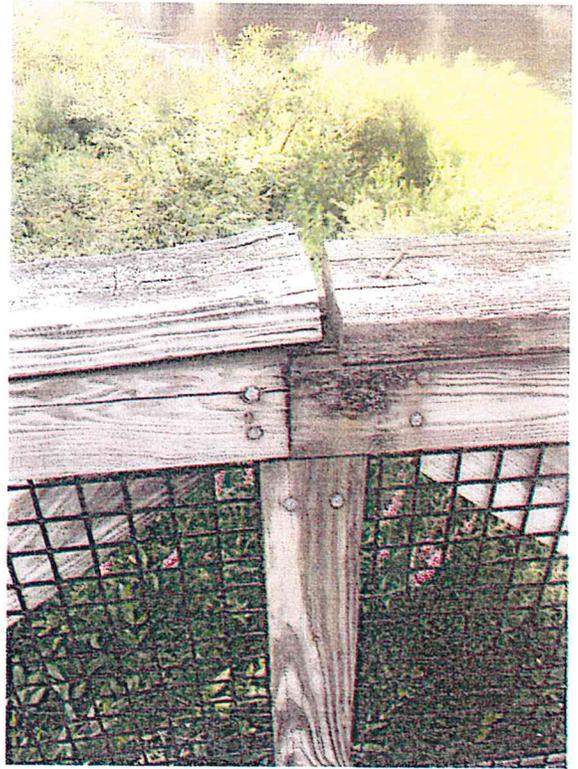




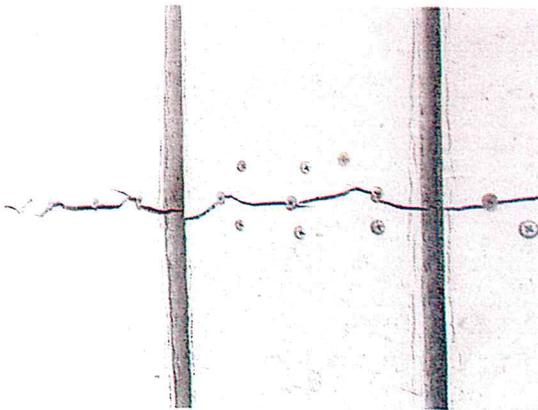
PHOTO RECORD



Railing and Decking



Railing Cap Deterioration



Planking Cracking and Repair



Spot of Railing Deterioration



View of Understructure

The Mary T. Early Foot Bridge

Renovation Project

October 1, 2020

Attached are the General Specifications for the replacement of the decking, Rail Cap and broken hand rails.

AO-1 Demo Plan

A1-1 Plan Section and Elevation

A5-1 Railing Element Replacement Schedule

300-1 Proposal Form

Budget Request for project 99,000.00

GENERAL SPECIFICATIONS

1. Project Description and Summary of the Work - The project is generally to renovate a portion of the existing Mary T. Early Bridge deck and railings including demolition of the deck and railings that are to be replaced.
2. General Conditions - The work shall include the furnishing of all labor, materials, equipment and incidentals, and the performance of all operations required to complete all work shown on the drawings and applicable specifications, without limiting to the scope.
3. Protection of Existing Building - The General Contractor shall take what ever precautions are necessary to protect existing walls, doors, frames, surfaces, utility lines, ductwork, fixtures, finishes, etc., which remain as part of the final system. The General Contractor shall clean, repair, or re-lamp, etc., these items as required for proper functioning or appearance of the final surfaces and systems.
4. Examination of the Premises - The General Contractor shall visit the site prior to submitting the bid and familiarize himself with the existing conditions. No additional compensation shall be allowed for extra work required due to lack of knowledge of the existing building conditions.
5. Scheduling and Coordination - The General Contractor shall be responsible for the scheduling, coordination and required submittals for all work on the site including that of the Subcontractors. The contractor shall furnish field progress schedules to the Architect for all phases of construction. The General Contractor shall coordinate his work with the work of the Owner and/or with his ongoing operations. The General Contractor shall access the site with labor and materials according to the provisions and requirements of the Owner.
6. Code Requirements, Permits and Inspections - All construction shall be in compliance with all applicable codes and ordinances. The General Contractor performing the work shall be responsible for securing and paying for all necessary building permits, licenses and inspections within time periods necessary to assure timely completion of the work. The General Contractor shall take action to secure such permits on a timely basis and identify the status of the permit process to the owner on a weekly basis.
7. Quality of the Workmanship - All work shall be done in a first class workmanlike manner by mechanics skilled in their respective trades. The workmanship for this contract shall be first class in every respect and shall meet the standards set forth in this specification or in the absence of such reference shall meet the highest quality standards of the industry.
8. Cutting and Patching - The General Contractor shall do all cutting and patching necessary for the installation of the work including scaffolding and staging if required. Trades that are fully experienced in the type of work required shall accomplish all finish work.
9. Submittals - The General Contractor shall submit shop drawings including fixture cuts and brochures as required to the Architect and Owner for approval. Submit the following: PDFs of shop drawings, cuts, brochures and samples of materials.
10. Project Closeout - At the conclusion of the project the General Contractor shall provide a marked up copy of the project documents indicating the full scope of changes and modifications to the project that may have occurred during the construction process.
11. Guarantee - All work under this contract shall be guaranteed for a period of one year after occupancy. Corrective work required during guarantee period shall be commenced by the contractor concerned within (5) five days of receiving notice of defects requiring correction, and completed with reasonable promptness.

SPECIFICATION FOR PRODUCTS AND SYSTEMS

SECTION 021120, Selective Demolition

Work of this section is to remove all indicated items to be removed including all attachments, back to prime substrate that are removed are to be properly and legally disposed of according to local codes and requirements.

All items that are removed are to be properly and legally disposed of according to local codes and requirements.

Clean up the site area and protect all natural site elements from damage or degradation.

SECTION 06100, Rough Carpentry

Decking and Rail Cap Replacement

The wood decking and rail caps for this project is to be IPE referred to scientifically as *Tabebuia avellanae*, *Tabebuia ipé* and *Tabebuia serratifolia* of the Family Bignoniaceae. Dimensional sizes to be used are indicated on drawings.

Provide evidence of team having installed this product on similar projects as qualification for capability of working successfully with this material.

Buy all materials from one source to insure match of adjacent pieces. Install using appropriate length stainless steel screws with flat or slightly domed heads. When cutting or fitting wood pieces all cuts shall be straight and true with overcuts or unsightly workmanship. Provide shimming as required to provide matching joints and protection from water entering the wood substrate support surfaces.

Provide a six foot sample section of installation for field approval of the architect and owner before proceeding with the final installation. The final approved sample shall become the standard for the remainder of installation.

Clean up site area at the completion of the project and remove all debris. Provide protection of all surfaces during construction to prevent damage or defacement.

Replacement of Deteriorated Railing Parts

Railing parts that are indicated to be replaced in the Railing Parts Replacement Schedule will be replaced with Premium Pressure Treated Lumber in dimensions that match the part to be replaced. Attachment shall be accomplished by using galvanized carriage bolts matching those of the existing structure attaching similar railing parts.

Provide samples of the materials to be used for this work to Architect and Owner for approval before beginning work.

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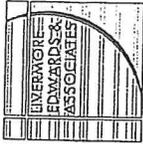
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14 Spring Street
Waltham, MA 01901
Tel: (617) 811-1410
Fax: (617) 811-1415
www.livermoreedwards.com

PROJECT:
MARY T. EARLY
FOOTBRIDGE

WALTHAM, MA

PROJECT: E-302
DRAWN BY: MK
APPROVED BY: MK
SCALE: 1/8" = 1'-0"

TITLE: 1
DATE: 02/11/09
DESIGN: 02/11/09
CHECK: 02/11/09
CONSTRUCTION: 02/11/09
DATE: 02/11/09
REVISION: 02/11/09

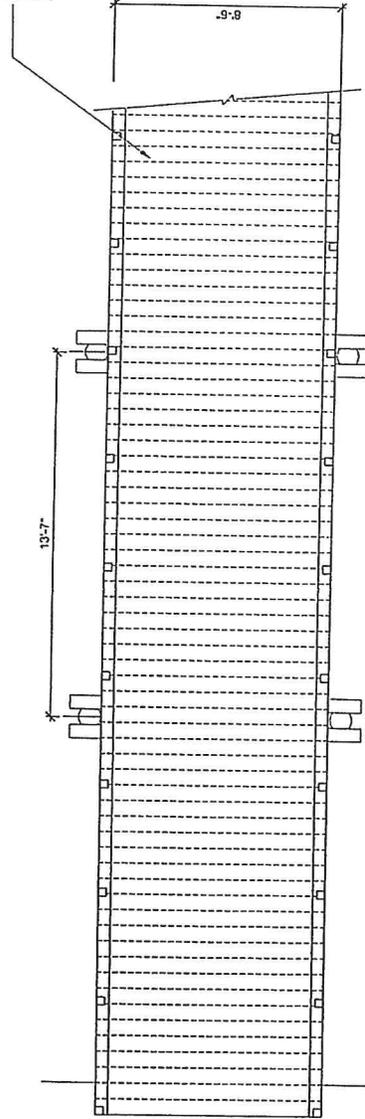
DEMO PLAN
SECTION AND
ELEVATION

A0-1

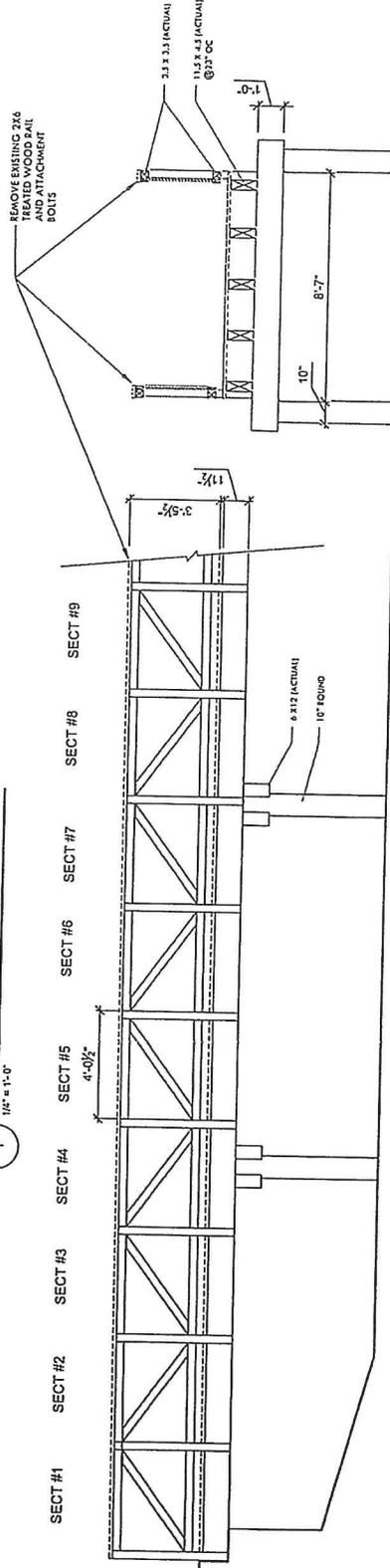
- GENERAL DEMOLITION NOTES
1. BRIDGE IS 27'-7" LONG.
 2. EXISTING BRIDGE CONSTRUCTION SHOULD BE REVIEWED BY CONTRACTORS BEFORE BID.
 3. REMOVE ALL SCREWS, BOLTS AND CONNECTORS ASSOCIATED WITH THE TYPICALS CONCRETE.
 4. EXISTING STRUCTURE IS TREATED WOOD IN SITS AND SWAYS AS INDICATED.

LEGEND:
--- ELEMENTS TO DEMOLISHED

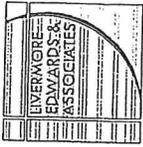
REMOVE EXISTING COMPOSITE DECKING AND ATTACHMENT SCREWS



1 DEMOLITION PLAN
1/8" = 1'-0"



2 DEMO PLAN SECTION AND ELEVATION
1/2" = 1'-0"



145 South Main Street
Waltham, MA 02453
Tel: (617) 891-1810
Fax: (617) 891-1810

PROJECT:
MARY T. EARLY
FOOTBRIDGE

WALTHAM, MA
PROJECT NO.:
DATE:
SCALE:

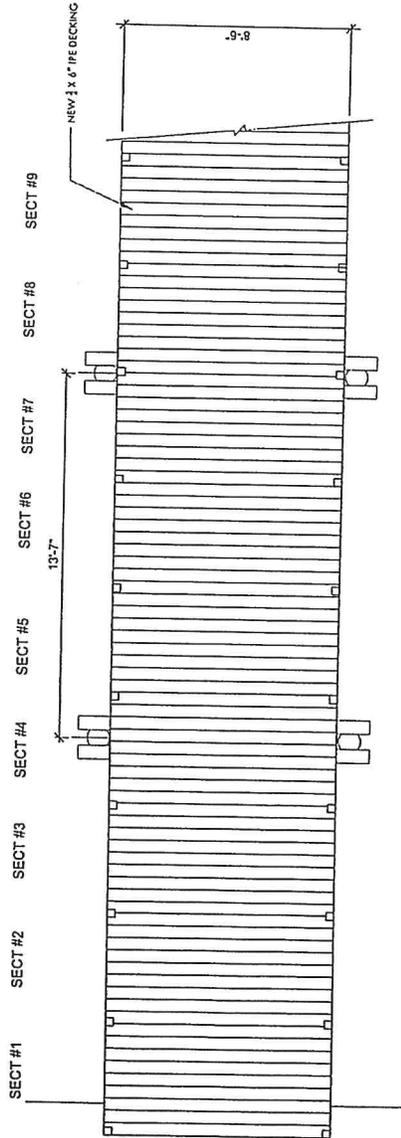
- NEW
- EXISTING
- △ PROPOSED
- TO BE REMOVED
- TO BE RECONSTRUCTED
- TO BE REPAIRED
- TO BE MAINTAINED
- TO BE DEMOLISHED
- TO BE PRESERVED
- TO BE RELOCATED
- TO BE REINSTALLED
- TO BE RECONSTRUCTED
- TO BE REPAIRED
- TO BE MAINTAINED
- TO BE DEMOLISHED
- TO BE PRESERVED
- TO BE RELOCATED
- TO BE REINSTALLED

PROPOSED PLAN
SECTION AND
ELEVATION

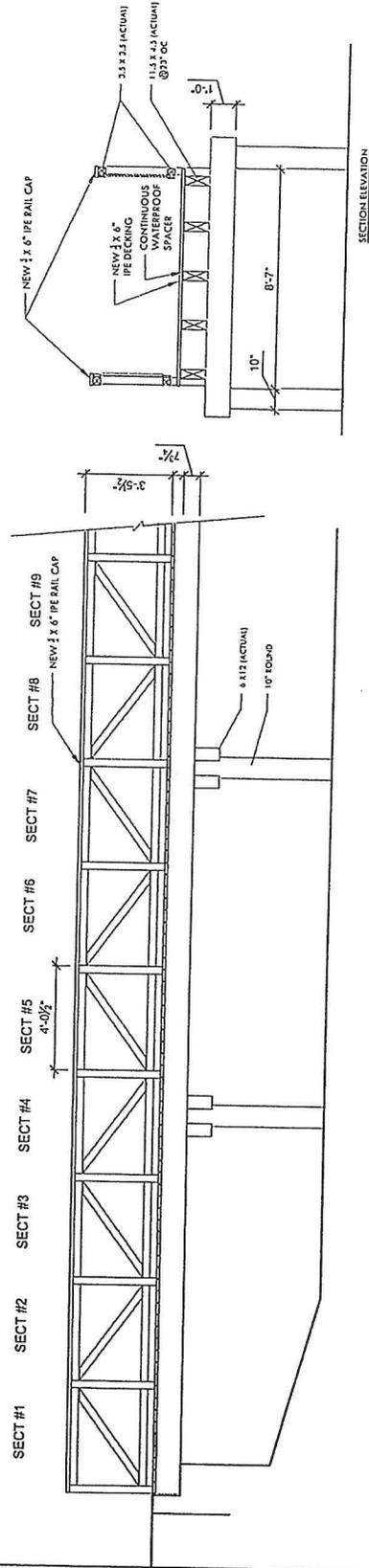
A1-1

GENERAL CONSTRUCTION NOTES

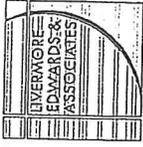
1. BRIDGES IS 277'-4"-LONG.
2. EXISTING BRIDGE CONSTRUCTION SHOULD BE REVIEWED BY CONTRACTORS BEFORE BID.
3. PROVIDE FLASHING BETWEEN NEW MATERIALS AND EXISTING STRUCTURE.
4. SEE DETAILS ON SHEET A5-1.



1 DECK INSTALLATION PLAN
1/8" = 1'-0"



2 PLAN, SECTION AND ELEVATION
1/8" = 1'-0"



14 Spring Street
WALTHAM, MA 01901
Tel: (617) 811-1100
Fax: (617) 811-1105

PROJECT:
MARY T. EARLY
FOOTBRIDGE

WALTHAM, MA

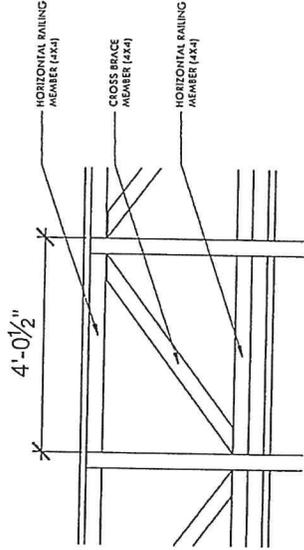
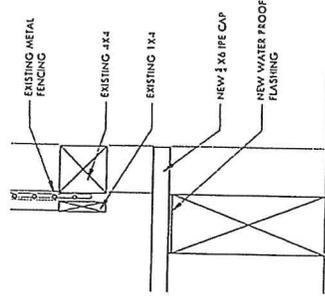
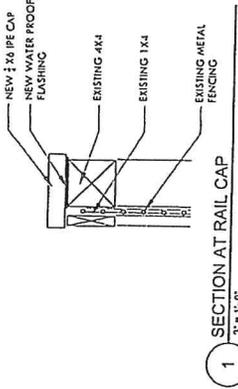
PROJECT:
DATE:
DRAWN BY:
CHECKED BY:
SCALE:

THIS DRAWING IS THE PROPERTY OF LIVERMORE EDWARDS & ASSOCIATES, INC. IT IS TO BE USED ONLY FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREON. NO PART OF THIS DRAWING IS TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF LIVERMORE EDWARDS & ASSOCIATES, INC.

DATE: 08/11/03
DRAWN BY: J. J. O'NEILL
CHECKED BY: J. J. O'NEILL
SCALE: AS SHOWN

ENLARGED
SECTIONS

A5-1



- TABLE NOTES:**
1. SECTION NUMBERS RUN HORIZ TO SOUTH
 2. THERE ARE 88 SECTIONS ON THE EAST SIDE
 3. THERE ARE 79 SECTIONS ON THE WEST SIDE
 4. REPAIRS TO WOOD MEMBERS WILL BE DONE USING HEAVY WOOD TO MATCH EXISTING.
 5. ATTACHMENTS WILL BE THROUGH EXISTING CALVANIZED CARTRIDGE BOLTS TO MATCH EXISTING.
 6. SEE RAILING REPAIR KEY THIS SHEET FOR RAILING ELEMENTS

| SECTION # | EAST RAILING | | | | | | | | | | TOTAL |
|-------------|--------------|----|----|----|----|----|----|----|----|----|-------|
| | 12 | 17 | 18 | 22 | 30 | 38 | 47 | 51 | 53 | 57 | |
| HORIZONTAL | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 8 |
| CROSS BRACE | | | | | | | | | | | 3 |

| SECTION # | WEST RAILING | | | | | | | | | | TOTAL |
|-------------|--------------|----|----|----|---|--|--|--|--|--|-------|
| | 20 | 33 | 47 | 50 | | | | | | | |
| HORIZONTAL | 1 | 1 | 1 | 1 | 3 | | | | | | |
| CROSS BRACE | | | | | 1 | | | | | | |

3 RAILING ELEMENT REPLACEMENT SCHEDULE

M E M O R A N D U M

To: Stew LaCrosse
From: Bob Livermore, RA
Evan Hankin, PE
Re: Mary T. Early Pedestrian Bridge
Design Alternatives
Date: 2/20/20

BACKGROUND

This memorandum is a follow-up of the recommendation of the Existing Conditions Review issued on February 20, 2020 concerning the Mary T. Early Pedestrian Bridge. The recommendations included the following:

- Decking Replacement
- Railing Cap Replacement
- Specific Deteriorated 4x4 Wood Element Replacement

DECKING REPLACEMENT

The consultant team reviewed several alternative decking solutions as well as making a site visit to the Joseph Thompson Pedestrian Bridge in Watertown which crosses the Charles River at Watertown Square. That pedestrian bridge has been recently completed and is constructed out of steel supports and lpe wood decking. It is an impressive structure and is reported to have cost \$1.5 Million. Other possible alternatives include extruded aluminum decking which would have a very long life and not be exposed to rot or structural deterioration and composite decking which would replace the current decking in kind (which has lasted about 15 years.)

Wood Decking – lpe (Advantage Lumber)

- Durable 1 x 6 plank wood with 100 year life expectancy.
- Natural look and feel. Different colors available.
- Harvested from managed forest from South American forests.
- Slip resistance exceeds ADA requirements.
- Material is relatively expensive to install because it so hard.
- Uses hidden stainless steel clips to attach to joists below.

Extruded Aluminum Planking (Versadeck)

- Very durable 1 x 6 extruded planks and will last more than 50 years.
- Color guarantee available for 25 years.
- Low maintenance – will not split or splinter.
- Powder coating is non-slip.
- Pieces are shipped to size from the factory and are not readily cut or shaped.
- Uses hidden aluminum clips to attach to joists below.
- Material is recyclable when useful life is up.

Composite Decking (Azek "Harvest Collection by Timbertech)

- Available locally (Harvey Industries)
- Integral color (slate gray)
- Easily workable with carpentry tools.
- 1 ½" thick x 6 planks are recommended for docks and boardwalks.
- Slip resistant surface
- Attached with face screws.
- 50 year warranty limited fade and stain.
- 100% PVC composition

COST COMPARISON

The following costs are for deck and installation only based on the trade material cost and labor required for installation. GC overhead and/or profit is not included.

| | Ipe Decking | Aluminum Plank | Composite Plank |
|---------------------------|-------------------------------|----------------------------|--|
| Model/Description | Advantage Lumber - 5/4 x 6 | VersaDeck - R40 - 1 x 6 | Timbertech - Harvest Max 1 1/2 x 6 |
| Square Foot Material Cost | \$11.60/SF | \$25/SF | \$10/SF |
| Square Foot Labor Cost | \$25/SF | \$5.5/SF | \$6.40/SF |
| Total / Square Foot Cost | \$36.60/SF | \$30.50/SF | \$16.40/SF |
| Total Deck Cost (2346 SF) | \$85,863 | \$71,553 | \$38,474 |

RAIL CAP REPLACEMENT

The recommended materials for the replacement of the rail cap (553 LF) would be treated wood 2x6 with sloped surface, Ipe wood plank (1x6) or composite decking material (1x6). The cost to install any of these items would be about \$3000.

4 X 4 WOOD ELEMENT REPLACEMENT

There are 15 existing wood elements that have been identified as deteriorated and would best replaced with treated wood matching the original. We would estimate the labor and materials to remove and replace each element would be about \$225 each for a total of \$3375.

SUMMARY

The above choices represent our understanding of repairs that would make a significant improvement over the current situation for the bridge. They are not selected to be the cheapest materials that could be used. The types of materials and the warranties that have been quoted give the reviewers an understanding of the expected longevity and wear that can be expected for the materials. Again, we note that we have not listed GC costs for overhead and profit for this work which may add 20% to the dollar numbers indicated for each alternative.

We recommend that you review this report with the samples and brochures that we have collected of the materials that are proposed. It should be possible to get manufacturer's representatives and installers to provide quotes for any of the solutions that you might choose. If you choose to go head with one or the other of the proposed solutions we can prepare documents and specifications for a competitive bid.



Level 2: Ipe Decking (LUMBER) | Ipe Decking »

FREE SHIPPING

PROFILING MACHINES & SIDING CUTTERS OVER \$2500*

1" x 6" x 6" IPE WOOD SLABS OVER 1300'

ALL ITEMS

1x6 + PLUS A BUNCH OF OTHERS! [See our Ipe Decking & Ipe Wood Products Catalog](#) | [Shop Now](#) »

Ipe Decking Information

Everything you need to know about Ipe Decking.



Discover More About Ipe Decking:

- [Ipe Decking](#) |
 - [Photos](#) |
 - [Specs](#) |
 - [Ipe Wood](#) |
 - [Install Instructions](#) |
 - [Price](#)
- You Are Here



BIM OBJECTS



SPECIFICATIONS

Ipe (pronounced EE-pay) is the finest quality wood decking material available. From the Atlantic City Boardwalk, to Las Vegas' Treasure Island Resort, to your own backyard, nothing keeps its integrity or lasts as long as Advantage Ipe Decking™. Ipe is an

[Click here for the Ipe Decking online price list.](#)


Ipe Decking Technical Info



Ipe Deck With A Pool

Ipe Decking Specs

Botanical Name: Tabebuia spp. (Lapacho group)

Common Name: [Ipe](#)

Other Common Names: Brazilian Walnut, Amapa, Cortez, Guayacan polvillo, Flor Amarillo, Greenheart, Madera negra, Tahuari, Lapacho negro

Common Trade Names: Pau Lope, Diamond Decking, Ironwood, and many others.

General Characteristics: Dark brown walnut color. Gives a green dust when cut. The texture is fine to medium. The tree may grow to 150 feet in height with trunk diameters of 6 ft. Frequently to heights of 100 ft and diameters of 2 to 3 ft. Boles are clear to 60 ft and more.

Weight: Basic specific gravity (oven dry weight/green volume) 0.85 to 0.97, air dry density 66 to 75 pounds per cubic foot. A 3/4" thick finish material weights approx. 4.5 pounds per square foot.

Moisture Content of Decking: Our Ipe Decking is specially dried for use on exterior projects. *We also sell [Ipe lumber](#) kiln dried specifically for interior use. DO NOT use kiln dried interior lumber in exterior projects as it will expand. Ipe Decking dried for exterior use will shrink inside.*

Janka side hardness: 3,060 lb for green material and 3,680 lb at 12% moisture content.

Bending Strength: 22,560 psi

Maximum Crushing strength: 10,350 psi

STRENGTH - ASTM-D143-09 tested; Three times stronger than Cedar, our Ipe Decking exceeds all existing code requirements for exterior constructions.

Forest Products Laboratory toughness average for green and dry material = 404 in.-lb (5/8" specimen.)

Drying and shrinkage (green to oven dry): Radial 6.6%, tangential 8.0%, volumetric 13.2%. Movement after manufacture is rated as small. Typical movement for a air dried decking board 6" wide board is 1/16" in between seasons.

Working Properties: Has a blunting effect on cutters, use of carbide tipped saw blades is necessary. Routs nicely. Must be predrilled for fastening.

Distribution: Throughout the continental tropical America and some of the lesser Antilles. The tree grows on a variety of sites from ridge tops to riverbanks and marsh forest. Our Ipe is responsibly harvested from managed forest. We also support extensive replanting programs. Ipe is as widespread in tropical America as Yellow Pine is in the United States.

Durability: Heartwood is very resistant to attack by decay fungi, mold, and termites. Last 75+ years. U.S. FOREST PRODUCTS LABORATORY - Class (Very Durable - 25 years) This is the highest rating available from the forest laboratory.

Uses: Exterior Decking, Benches, Adirondack furniture, Truck and Fishing vessel flooring, fine interior cabinetry and flooring, Archery Bows, Heavy marine dock construction.

TERMITE RESISTANCE - U.S. NAVAL RESEARCH LABORATORY - (15 years in ground without attack by termites)
Highest Rating.

HARDNESS - ASTM-D143-94 tested; Approximately seven times harder than Cedar, our Ipe decking stands up to the harshest conditions imaginable.

SLIP RESISTANCE - ASTM-C1028-89 tested; Our Ipe Decking exceeds the Americans with Disabilities Act requirements for Static Coefficient of friction in a wet environment

Compare Ipe Decking

Compare the available decking woods. Read the following comparison and then give us a [call](#). By any measure (hardness, strength, durability, appearance), our Ipe Decking is clearly the superior decking material across the board. But, don't take our word for it. Call to get your free sample. You'll see and feel for yourself how Advantage Ipe Decking™ speaks for itself! All Ipe decking is not the same. Our mills in Brazil cut only the finest logs for our decking production. *We stock Ipe Decking boards up to 20 feet long!!!*

Applications:

Ipe Decking

| | |
|--------------------------|---|
| Appearance: | An extremely dense, tight grained wood. Generally a deep rich brown with some pieces displaying red and amber hues. |
| Hardness: | 3600lbs |
| Bending Strength: | 22,560 psi |
| Decay Resistance: | Very durable and naturally resistant to decay and insects. Offers up to 75+ year lifespan. |

Douglas Fir

| | |
|--------------------------|--|
| Appearance: | A light reddish-brown wood with generally straight grain. |
| Hardness: | 670 lbs. |
| Bending Strength: | 12,400 psi |
| Decay Resistance: | Not naturally resistant to decay. Should be painted or stained to prevent decay. |

Pressure Treated Pine

| | |
|--------------------------|---|
| Appearance: | Very pronounced grain. Dusty yellow-green color due to chemical treatment of the wood. |
| Hardness: | 690 lbs. |
| Bending Strength: | 14,500 psi |
| Decay Resistance: | A chemical preservative, chromated copper arsenate is forced into the wood. Offering resistance to decay, but also potential health concerns. |

California Redwood

| | |
|--------------------|--|
| Appearance: | Several grades available that vary considerably in appearance and quality. Usually straight grained with a fine, even texture. Color varies from cherry-red to dark reddish-brown. |
|--------------------|--|

Hardness:
Bending Strength:

420 lbs.
 10,000 psi

Decay Resistance:

Premium grades are more durable than most woods in common use. Resistant to decay, but relatively soft and quick to weather. Treatment is recommended.

Western Cedar

Appearance:

Fresh cut, this wood appears a salmon pink color which turns a coffee brown over time. Species is generally straight grained.

Hardness:

580 lbs.

Bending Strength:

7,500 psi

Decay Resistance:

This softwood is more durable than most woods in common use. Resistant to decay, but relatively soft and quick to weather. Treatment is recommended.

Philippine Mahogany

Appearance:

Interlocked grain similar to true mahogany, but with a courser texture. Species is generally medium to dark brown.

Hardness:

760 lbs.

Bending Strength:

12,000 psi

Decay Resistance:

Only the dark red species are resistant to decay. Although more durable than cedar and redwood, it is still relatively soft compared to Ipe Decking.

Fire Rating For Ipe Decking

| Test/Classification | Rating up to |
|--|-----------------|
| Ipe Decking Flame Spread (10) Minutes | 0 |
| Ipe Decking Flame Spread (30) Minutes | 5 |
| Ipe Decking Smoke Developed Values (10) minutes | 3 |
| Ipe Decking Fuel Contribution (10) Minutes | 0 |
| NFPA Class* | A |
| UBC Class** | 1 |
| * NFPA is the National Fire Protection, NFPA no. 1 Fire Safety Code | |
| ** UBC is the Uniform Building Code, 1979 Edition, Part VIII, Fire Resistive Standard for Fire Protection. | |

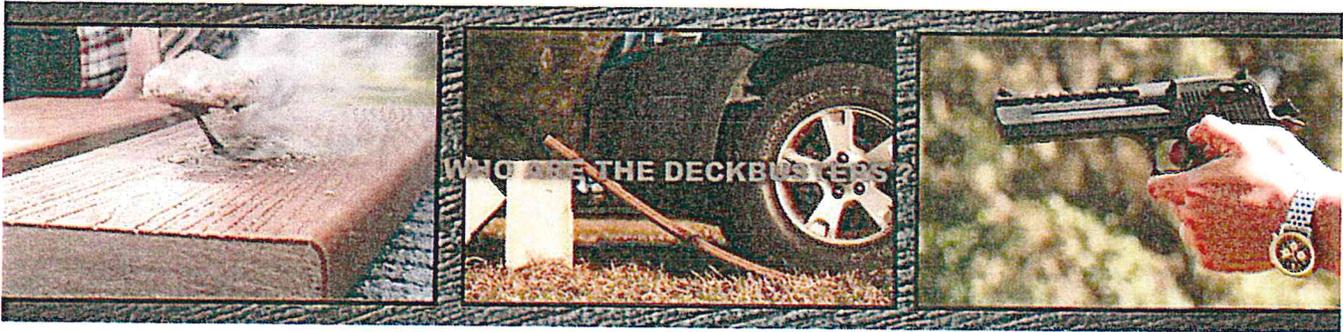
Should I "Finish" My Ipe Deck???

Finished Deck

exotic hardwood that is naturally resistant to rot and decay, is 8 times harder than California Redwood, and is guaranteed for 20 years without preservatives! Our Ipe Decking is responsibly harvested from well-managed forests to provide a truly renewable resource. Ipe has many benefits over teak and is available at a fraction of the cost. We ship our Ipe decking products direct to your home or jobsite.

Watch Extreme Ipe Decking Tests on DeckBusters™

Wondering if what you've heard about Advantage Ipe™ is true? Watch DeckBusters™ and you'll see the truth about which decking materials live up to the hype and which one's don't. If you've ever wondered what decking would look like is placed under a SUV or a blow torch, then click the banner below to find out!



The Benefits of Advantage Ipe™ Decking

Click the video below to discover the benefits you get when building your deck out of Advantage Ipe™. Strength and beauty aside, a deck made of Advantage Ipe™ will give you peace of mind for decades to come. Don't forget to see what others homeowners and contractors have to say about their Ipe Deck projects in our [Deck Video](#) gallery.

What is Ipe Wood Decking?



