U.S. Department of Transportation
Federal Highway Administration

Massachusetts Division
November 9, 2011

55 Broadway, 10th Floor
Cambridge, MA 02142
617.494-3657
617.494.3355 (fax)
www.fhwa.dot.gov/madiv

In Reply Refer To:
HDA-MA

Florence Seldin
Chairman
Chatham Board of Selectmen
549 Main St
Chatham, MA 02633

Subject: Chatham – Mitchell River Bridge Project
Section 106 – Adverse Effect Finding

Dear Selectman Seldin:

The Federal Highway Administration is transmitting the enclosed package to continue consultation under Section 106 of the National Historic Preservation Act for the subject project. The Massachusetts Department of Transportation (MassDOT) proposes to expend funds for construction under the Federal Aid Highway Program.

The subject project is currently going through other review considerations. The FHWA has determined that the project would require an Environmental Assessment to comply with the National Environmental Policy Act (NEPA), which will include information on the alternatives that have been subject to review through the continuous consultation under the Section 106 process. The EA will identify a preferred alternative that satisfies the Purpose and Need of the project. The document will further explain the reasoning behind the selection of the preferred alternative and the impacts associated with it. In addition, public involvement opportunities will be provided through the NEPA process, and in compliance with applicable federal requirements.

On October 31, 2010, the Keeper of the National Register of Historic Places determined that the existing Mitchell River Bridge is eligible for individual listing in the National Register. The FHWA has held meetings with consulting parties identified for this project and has provided information to develop and evaluate alternatives or modifications to the undertaking that could avoid, minimize or mitigate impacts to the Mitchell River Bridge. In addition, MassDOT's Cultural Resources Unit has assessed the project area for other historic and archeological properties to be evaluated under Section 106. Besides the bridge itself, no other National Register –listed or –eligible property was identified or will be impacted by the proposed project.

The proposed project will completely replace the Mitchell River Bridge, and therefore will result in an adverse effect. The enclosed information provides a detailed description of the proposed project and its effect to the NR-eligible bridge. We have reviewed the information and concur with MassDOT's assessment of the impacts to the Mitchell River Bridge.

The enclosed package also includes a draft Memorandum of Agreement (MOA) for the resolution of the proposed adverse effect. The MOA includes the State Historic Preservation Officer and the Advisory Council on Historic Preservation as signatories along with FHWA. MassDOT and the Town of Chatham will be invited signatories to this MOA. In addition, FHWA intends to extend the opportunity to sign the MOA to the Section 106 consulting parties as concurring parties to acknowledge their participation in the process. Once signed by the signatories, a fully executed MOA will be provided to the concurring parties for their signature. The refusal of any party invited to concur in the MOA does not invalidate the MOA [36 CFR 800.6(c)(3)].

We hereby provide this information for your review and comments. Please contact Damaris Santiago at (617) 494-2419 or at Damaris.Santiago@dot.gov should you have any questions.

Sincerely yours,

Pamela S. Stephenson
Division Administrator

Enclosures:
MassDOT Adverse Effect letter dated November 8, 2011
Project Plans (11x17 sheets)
Draft MOA

cc: Kevin Walsh, Director of Environmental Services, MassDOT Highway Division
Joseph Pavao, ABP Project Manager, MassDOT Highway Division
Diane Madden, Environmental Services Proj Manager, MassDOT Highway Division
Jeffrey Shrimpton, Cultural Resources Specialist, MassDOT Highway Division

Deval L. Patrick, Governor
Timothy P. Murray, Lt. Governor
Richard A. Davey, Secretary & CEO
Frank DePaola, Administrator

massDOT
Massachusetts Department of Transportation
Highway Division

November 8, 2011

RE: Chatham, Replacement of the Mitchell River Bridge (C-07-001)
MassDOT Project #603690 / MHC File #46959
Section 106 Review – Adverse Effect

Ms. Pamela Stephenson
Division Administrator
Federal Highway Administration
55 Broadway, 10th Floor
Cambridge, MA 02142

Attn: Damaris Santiago

Dear Ms. Stephenson:

The Massachusetts Department of Transportation (MassDOT) proposes to expend funds under the Federal Aid Highway Program to replace the structurally deficient Mitchell River Bridge (C-07-001) in Chatham. The Town of Chatham owns the bridge and is responsible for its maintenance. MassDOT proposes to demolish the existing bridge and to replace it for the Town with a new bridge on the same alignment under MassDOT's Accelerated Bridge Program. This project will be a federally funded undertaking and, therefore, requires review under Section 106 of the National Historic Preservation Act of 1966, as amended [36 CFR 800].

The existing Mitchell River Bridge is an electrically powered, cable-lift, simple-trunnion, single-leaf timber bascule drawbridge with eleven timber stringer approach spans supported on timber pile bents. The entire existing bridge superstructure, including that of the bascule and all eleven approach spans, was constructed of new timber elements in 1980. This 1980 superstructure was erected on a reconstructed substructure that combines reused timber piles from a previous bridge on this crossing intermixed with new (1980) timber piles, all new timber pier caps, all new wooden cross-bracing, and two new reinforced concrete abutments. The earlier bridge from which the reused timber piles were retained was a timber drawbridge that had been constructed in 1925 and then widened and modernized in 1949. This 1925/49 structure was itself a complete replacement of a much longer timber drawbridge reportedly erected in either 1858 or 1871. That mid-19th century bridge is presumed to have been the original bridge on this crossing. No part of that original bridge is known to exist today.

The Keeper of the National Register of Historic Places has determined, in a notification letter dated October 31, 2010, that the existing 30-year-old Mitchell River Bridge is eligible for individual listing in the National Register. The proposed demolition of the existing bridge is,

Ten Park Plaza, Suite 4260, Boston, MA 02116
www.mass.gov/massdot

therefore, by definition, an adverse effect under the regulations implementing Section 106 [36 CFR 800.5(a)(2)(i)]. The Federal Highway Administration (FHWA), as the lead federal agency for the undertaking, has conducted extensive consultations with interested local, statewide, and national parties to "develop and evaluate alternatives or modifications to the undertaking that could avoid, minimize or mitigate" the adverse effect to the National Register-eligible bridge, as required under the Section 106 regulations [36 CFR 800.6(a)]. MassDOT has participated in those consultations.

As part of its efforts to facilitate the Section 106 consultation process, MassDOT directed its design consultant, URS Corporation, to prepare a *Bridge Repair/Rehabilitation Feasibility Study* (*Repair/Rehabilitation Study*) [final report dated March 10, 2011], and a draft *Bridge Alternatives Evaluation and Life Cycle Cost Comparison* (*LCCC Report*) [draft dated April 28, 2011]. FHWA has provided hard copies or electronic versions of both reports, including an appendix and an addendum to the latter, to all Section 106 consulting parties. MassDOT also commissioned an independent peer review of the *LCCC Report* by HDR Incorporated, an independent architecture/engineering/consulting firm, in order to verify assumptions, methodology, and results of the URS evaluation. FHWA has provided an electronic version of HDR's report to each Section 106 consulting party.

It is MassDOT's opinion that the URS *Repair/Rehabilitation Study* conclusively documents the need for a complete replacement of the Mitchell River Bridge, based on the extensive deterioration of many structural elements including, most particularly, the timber pile bents. The deteriorated timber piles in the existing bents, according to the URS *Repair/Rehabilitation Study*, cannot feasibly be replaced without the complete removal and subsequent replacement of the bridge's entire superstructure. Nor can those piles be repaired or retrofitted in place to provide reliable, long-term, cost-effective performance in a salt-water environment. Furthermore, repair/rehabilitation of the existing bascule drawspan (with its partially obstructed 19' 4" navigation channel) cannot alleviate the substantial limitations of the existing navigation opening. At this point in what has been an extensive Section 106 consultation process, it appears to MassDOT that virtually all of the consulting parties have accepted the conclusion that a complete replacement of the existing bridge is necessary, regardless of the replacement alternative chosen, to address future maintenance, functionality, and safety concerns.

The URS draft *LCCC Report*, with its appendices and addendum, examines seven alternative designs for a replacement Mitchell River Bridge that might "avoid, minimize, or mitigate" the project's adverse effect under Section 106. Each of the seven alternatives incorporates a single-leaf bascule drawspan. The five alternatives in the original report range from an all-timber structure that reproduces the existing 19' 4"-wide navigation channel (Alternative 1) to a concrete-and-steel structure with ornamental timber details and a 25'-wide navigation channel (Alternative 5). The Report's addendum adds two more all-timber alternatives, as variations of Alternative 1: Alternative 1A proposes a timber superstructure on a timber substructure with a 25'-wide navigation channel, and Alternative 1B repeats the 25'wide channel of 1A, but adds a hollow concrete bascule pier in order to prohibit the bascule's counterweight from descending into the water when the bascule leaf rotates into the open position.

The timber bascule drawspans proposed for Alternatives 1, 1A, and 1B would each be operated by a pair of electric winches that would lift the bascule by means of a traditional system of wire ropes, pulleys, and sheave poles, all located above the bridge deck, that would be similar to but substantially larger than the existing lifting system. The steel bascule drawspans proposed for Alternatives 2-5 would follow more modern principles of bascule design. Each of these drawspans would be operated by two independent electrically powered drive trains directly coupled to the outboard ends of the trunnion shafts, with all operating equipment securely mounted below the level of the bridge deck (and thus protected from vehicular impacts).

At the conclusion of its *LCCC Report*, URS recommended Alternative 5 as the preferred alternative for the new replacement bridge, based on its favorable life-cycle costs and a projected service life of 80 to 100 years for both the superstructure and substructure under this alternative. The report conceded, however, that this recommendation was based on engineering criteria, and that Alternative 5 would be rated as "poor" in the category of context sensitivity.

Those Section 106 consulting parties who have advocated for an all-timber replacement bridge, on the other hand, have expressed strong support for Alternative 1B. Those parties appear to have recognized the practical value of including a protective bascule pier and a wider navigation channel in the design of a new bridge, rather than building an exact replica of the existing structure, with its various inadequacies. The consulting parties who have written in support of Alternative 1B include the Chatham Historical Commission, the Friends of the Mitchell River Wooden Drawbridge, Preserve Massachusetts, the National Trust for Historic Preservation, the Advisory Council on Historic Preservation, the Historic Bridge Foundation, the Indiana Historic Spans Taskforce, and James L. Cooper, PhD. All Section 106 consulting parties have previously received copies of all correspondence.

MassDOT respects both the engineering-based recommendation of URS, and the more context-sensitive approach of the timber-bridge advocates. Although Alternative 5 probably is the best alternative in strictly engineering terms, MassDOT recognizes that this alternative would not provide adequate mitigation for the adverse effect to the National Register-eligible bridge. MassDOT, therefore, no longer supports Alternative 5.

Alternative 1B, however, would place pressure-treated timber piles in the water – a practice that MassDOT cannot support, given both the higher life-cycle costs and the serious environmental concerns posed by this approach, as discussed in the draft *LCCC Report*. The timber piles also would require replacement on more frequent intervals than the steel and concrete piers, and thus would cause more frequent disturbances of the adjacent marine ecosystems. Furthermore, the timber bascule drawspan proposed for Alternative 1B would be more prone to misalignment, similar to the existing bridge, as a result of the natural expansion and contraction of wood due to moisture content and because of the flexibility of the connections in a timber structure. The HDR report also notes that current AASHTO[1] design guidelines for movable spans "would disallow" the use of the existing cable-based lifting system for the bascule, as is proposed for Alternative 1B, since that design "is not capable of resisting wind load in both directions." Based on these life-cycle, functional, and environmental concerns, MassDOT also does not support Alternative 1B as a viable design for the replacement bridge.

[1] American Association of State Highway and Transportation Officials

As a compromise between the all-timber design of Alternative 1B and the steel-and-concrete design of Alternative 5, MassDOT has chosen Alternative 3 as its preferred alternative. Alternative 3 combines a timber superstructure on each of five approach spans with a steel-framed, single-leaf bascule drawspan, with all superstructure elements supported on a steel-and-concrete substructure. The principal structural members of the approach span superstructures will be glue-laminated (glulam) timber beams; the principal structural members of the proposed new drawspan will be steel girders and steel floor beams. The decking on all six spans, including the drawspan, will be timber planks. Other timber elements of the superstructure will include the sidewalk decks, at-curb crash barriers, and bridge railings. All connections on the superstructure shall be made with steel fasteners. The substructure will be comprised of two reinforced concrete abutments, one reinforced-concrete hollow bascule pier, and five concrete-filled steel pipe piers with reinforced-concrete pier caps. The outer elevations of the bascule pier and the abutment wingwalls will be clad with stone. Conceptual plans and computer-generated renderings depicting Alternative 3 are enclosed with this submittal.

It is MassDOT's opinion that Alternative 3 will fully meet the project's purpose and need while providing a handsome, context-sensitive modern bridge that will complement its picturesque natural setting and echo the appearance of its historic predecessors on this crossing. It is also MassDOT's opinion that Alternative 3 will sufficiently mitigate the adverse effect caused by the demolition of the existing National Register-eligible bridge, meeting both the letter and the spirit of Section 106. At the same time, the steel-and-concrete substructure of Alternative 3 will offer the most advantageous life-cycle costs (the service life of the steel-and-concrete substructure is estimated to exceed 80 years, as compared to the 20-to-30-year expected life of a timber-pile substructure) without the serious environmental concerns related to the use of pressure-treated timber in the water.

Although the service lives of the timber elements of Alternative 3 will be less than the preferred standard design life of 75 years (the service life of the timber decks is not expected to exceed 20 years, that of the approach spans' timber superstructures is not expected to exceed 35 years), and the use of these timber elements will place a greater maintenance burden on the town, the Town of Chatham has signaled its willingness to accept those long-term responsibilities. The Chatham Board of Selectmen (BOS), which is responsible for the care, custody, and control of the Mitchell River Bridge on behalf of the Town, notified MassDOT, in a letter dated May 31, 2011, that the BOS has voted four-to-one to support Alternative 3 as the "most prudent balance of aesthetic, functional, and financial benefits for the Town."

MassDOT proposes to mitigate the adverse effect caused by the demolition of the existing National Register-eligible Mitchell River Bridge by carrying out all of the stipulations in the enclosed draft Memorandum of Agreement (MOA). Those stipulations include MassDOT's commitment to design and build a context-sensitive new bridge based on the parameters established by Alternative 3; afford the Section 106 consulting parties the opportunity to review and comment on the sketch plans for the replacement bridge, including its aesthetic details, as those plans are developed; and prepare archival photographic documentation of the existing bridge for distribution to the Massachusetts State Archives and the Town of Chatham. The draft MOA includes FHWA, the Massachusetts State Historic Preservation Officer, and the Advisory Council on Historic Preservation as signatories and MassDOT and the Town of Chatham as invited signatories. The MOA also

invited signatories. The MOA also provides the opportunity for all other local, statewide, and national Section 106 consulting parties to sign as concurring parties.

MassDOT's Archaeological Resources Supervisor, John Rempelakis, has reviewed this project for its potential to impact significant archaeological resources. A review of the MHC pre-contact archaeological base maps revealed no recorded sites in the immediate vicinity of the project area. The closest recorded pre-contact sites — 19-BN-267 and -268 — are located east of the Mitchell River roughly 0.25 to 0.5 mile from the project area. A review of the MHC historic archaeological base maps revealed one recorded historic site — CHA.HA.1 — located approximately 500' southeast of the project area. Project impacts will be confined to the existing bridge and the existing paved roadway approaches. Little or no archaeological potential can be ascribed to the project area based on the nature of the proposed work; the effects of past roadway, causeway, and bridge construction; roadside development (i.e. boat landing, building construction); and the presence of unfavorable environmental conditions (i.e. embankment). MassDOT, on behalf of FHWA, has notified the Wampanoag Tribe of Gay Head/Aquinnah and the Mashpee Wampanoag Indian Tribal Council regarding the proposed project and neither has responded to date.

If FHWA agrees with MassDOT's adverse effect finding for this project under Section 106, and concurs with our proposed mitigation measures, please forward this letter and the accompanying materials to the Massachusetts State Historic Preservation Officer and the Advisory Council on Historic Preservation for their review. If you should have any questions about this project, please contact Jeffrey Shrimpton (at 617-973-7497) of MassDOT's CRU staff.

Sincerely,

Stephen J. Roper
Historic Resources Supervisor
Environmental Services

Encl: Draft MOA
Conceptual Plans and Renderings

DRAFT

MEMORANDUM OF AGREEMENT
AMONG
THE FEDERAL HIGHWAY ADMINISTRATION,
THE MASSACHUSETTS STATE HISTORIC PRESERVATION OFFICER, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING THE REPLACEMENT OF THE
MITCHELL RIVER BRIDGE (C-07-001)
IN CHATHAM, MASSACHUSETTS

WHEREAS, the Federal Highway Administration (FHWA), in consultation with the Massachusetts State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation, pursuant to 36 CFR Part 800, regulations implementing Section 106 of the National Historic Preservation Act of 1966, as amended [16 U.S.C. Part 470(f)], has determined that the proposed demolition of the Mitchell River Bridge (in order to construct a new bridge on the same alignment) will have an adverse effect on that National Register-eligible structure; and

WHEREAS, FHWA, through the Massachusetts Department of Transportation (MassDOT), has defined the undertaking's area of potential effect as comprising the Mitchell River Bridge (C-07-001), which carries Bridge Street over the Mitchell River in Chatham, Massachusetts; the properties abutting the immediate approach roadways along Bridge Street; and areas along the banks of the Mitchell River that are in view of the bridge; and

WHEREAS, the Mitchell River Bridge is an electrically powered, cable-lift, simple-trunnion, single-leaf timber bascule drawbridge with eleven timber stringer approach spans supported on timber pile bents; and

WHEREAS, the bridge's existing timber superstructure, including the single bascule draw span and all eleven approach spans, was entirely constructed of new timber elements in 1980 on a substructure that reused many of the timber piles from the previous bridge (built 1925, widened 1949) on this crossing, intermixed with many new timber piles, all new wooden pier caps, all new pile bent cross-bracing, and all new reinforced concrete abutments — all built in 1980; and

WHEREAS, the Keeper of the National Register of Historic Places (National Register) has determined that the existing Mitchell River Bridge has "exceptional significance" and is eligible for listing in the National Register as "one of a continuous line of wooden drawbridges that have spanned this crossing for over 150 years" and as "the last remaining single-leaf wooden drawbridge in Massachusetts (and perhaps the United States), despite its less-than-50 years age;" and

WHEREAS, the Mitchell River Bridge is not located in any historic district that is either listed in or has been determined eligible for listing in the National Register; and

WHEREAS, MassDOT has determined that the Mitchell River Bridge is structurally deficient, functionally obsolete, and cannot prudently be rehabilitated to serve current transportation needs for an acceptable design-life; and

WHEREAS, the Town of Chatham owns and maintains the Mitchell River Bridge; and

WHEREAS, FHWA has undertaken an extensive Section 106 consultation process with numerous local, statewide, and national parties; and

WHEREAS, MassDOT has participated in the Section 106 consultation process and has been invited to sign this Memorandum of Agreement (MOA) as an invited signatory; and

WHEREAS, the Town of Chatham Board of Selectmen has participated in the Section 106 consultation process and has been invited to sign this MOA as an invited signatory; and

WHEREAS, other parties have participated in the Section 106 consultation process and have been invited to sign this MOA as concurring parties, including the Chatham Historical Commission, the Friends of the Mitchell River Wooden Drawbridge, Pease Boat Works & Marine Railway, Preservation Massachusetts, the National Trust for Historic Preservation, the Historic Bridge Foundation, the Indiana Historic Spans Taskforce, James L. Cooper, Ph. D., and George Myers; and

WHEREAS, FHWA and MassDOT have notified the Wampanoag Tribe of Gay Head/Aquinnah, the Mashpee Wampanoag Indian Tribal Council, and the Massachusetts Board of Underwater Archaeological Resources about the proposed project and have invited their comments; and

WHEREAS, in accordance with 36 CFR § 800.6(a)(1), FHWA has notified the Advisory Council on Historic Preservation (Council) of its adverse effect determination with specified documentation and the Council has chosen to participate in the consultation pursuant to 36 CFR § 800.6(a)(1)(iii); and

NOW, THEREFORE, FHWA, the SHPO, and the Council agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the adverse effect of the proposed undertaking on historic properties.

STIPULATIONS:

FHWA shall ensure that the following provisions are carried out:

I. DESIGN OF NEW REPLACEMENT BRIDGE

FHWA shall ensure that MassDOT designs and constructs a context-sensitive new bridge to replace the existing National Register-eligible Mitchell River Bridge. The proposed new bridge shall be comprised of a single-leaf bascule draw span and five approach spans. The principal structural members of the proposed new draw span shall be steel girders and steel floor beams and the principal structural members of the five approach spans shall be glue-laminated (glulam) timber beams. The decking, sidewalks, bridge railings, and at-curb barriers on all six spans shall be constructed of timber. All connections on the superstructure shall be made with steel fasteners. The substructure of the proposed new bridge shall be comprised of two reinforced concrete abutments, one reinforced concrete bascule pier, and five concrete-filled steel pipe piers with reinforced concrete pier caps. The outer elevations of the bascule pier and the wingwalls of the abutments shall be clad with stone. FHWA has provided conceptual drawings and architectural renderings of this design, known as Alternative 3, to all parties that have been involved in the Section 106 consultations for this project. Those drawings and renderings were included as enclosures with FHWA's Section 106 Adverse Effect submittal dated November 9, 2011.

II. REVIEW OF NEW REPLACEMENT BRIDGE DESIGN

FHWA and MassDOT shall convene at least one open public meeting in Chatham to discuss the sketch plans (25% design stage) and aesthetic details of the new replacement bridge as described in Stipulation 1. The sketch plans will show the dimensions and profile of the new bridge but may not show its structural or aesthetic details. FHWA and MassDOT, however, will ensure that more refined computer-generated renderings of the aesthetic details of the proposed bridge are made available to the Section 106 consulting parties and the public prior to the public meeting. FHWA will provide hard copies (11" x 17") or electronic versions of the sketch plans and renderings to all Section 106 consulting parties (as each party may prefer) at least fourteen days prior to the public meeting. Written comments regarding the sketch plans or renderings may be submitted to FHWA (Pamela S. Stephenson, Division Administrator, Federal Highway Administration, 55 Broadway, Cambridge, MA 02142) by the Section 106 consulting parties or the public. FHWA and MassDOT shall review and consider all comments received within fourteen days following the public meeting, before proceeding to final design.

III. ARCHIVAL DOCUMENTATION

A. FHWA shall ensure that MassDOT prepares archival-quality photographic documentation of the existing bridge in the form of 8" x 10" black and white prints made from 35 mm black and white negatives. Photographs shall depict aerial views of the existing bridge and its surroundings, as well as views of the bridge's elevations, bascule span and operating system, deck, abutments, and piers, and context views showing the bridge in relation to its setting. All photographs shall be identified on the back in pencil, with no affixed labels, unmounted but sleeved in archival-quality, unbuffered envelopes, the contents of each envelope identified and numbered in pencil on the envelope. The negatives shall be sleeved in appropriate archival-quality negative holders, which shall be suitably labeled. All photographs shall be keyed by number to a site plan printed on archival-quality paper. A list of photographic views printed on archival-quality paper also shall be included.

B. All photographic documentation described in Subsection A shall be completed prior to the commencement of any construction associated with the proposed bridge replacement project.

C. MassDOT shall include photocopies of selected pages from the original 1980 construction plans for the Mitchell River Bridge, including a site plan, elevations, and details. Photocopies shall be printed on archival-quality 11"x17" paper, which shall be folded in half for storage.

D. MassDOT shall include photocopies of any other existing paper documentation, copied on archival-quality paper, which FHWA, MassDOT, and any of the Section 106 consulting parties shall mutually agree to include.

E. MassDOT shall submit one original set of photographic documentation (with negatives) to the SHPO for subsequent transmittal to the Massachusetts State Archives and one original set of photos (without negatives) to the Chatham Historical Commission for

transmittal to an appropriate local repository. One set of all paper documentation described in Subsections A, C, and D shall be enclosed in an archival-quality file folder and included with each set of photographic documentation. Each set of documentation, including photographs, shall be enclosed in an archival-quality box.

F. MassDOT shall include a compact disc containing all photographic and paper documentation with each set of archival documentation.

VI. POST-REVIEW DISCOVERIES

If FHWA or MassDOT determines that the undertaking will affect a previously unidentified property that may be eligible for listing in the National Register of Historic Places, or will affect a known historic property in an unanticipated manner, FHWA and MassDOT shall make reasonable efforts to avoid, minimize or mitigate any adverse effects to such properties and determine actions that they can take to resolve any adverse effects following the procedures in 36 CFR 800.13(b). In the event that a post-review discovery involves a property or properties that may have traditional cultural and religious significance to federally recognized Indian tribes, FHWA, in coordination with MassDOT, shall consult with the appropriate Indian tribe(s) in accordance with the requirements of 36 CFR 800.13(b) and established procedures for Section 106 tribal consultation for Massachusetts. If pre-contact cultural resources are discovered or unanticipated effects on pre-contact period resources are found, FHWA, in coordination with MassDOT, will consult with the appropriate federally recognized Indian tribes in accordance with established procedures for Section 106 tribal consultation for Massachusetts.

VII. DURATION

This MOA will be null and void if its terms are not carried out within five years from the date of its execution. Prior to such time, FHWA may consult with the other signatories to reconsider the terms of the MOA and amend it in accordance with 36 CFR 800.6(c)(7).

VIII. DISPUTE RESOLUTION

Should any party to this agreement, or any party consulted under this agreement, object in writing to any actions proposed or the manner in which the terms of this MOA are implemented, FHWA shall consult with such party to resolve the objection. If FHWA determines that such objection cannot be resolved, FHWA will:

A. Forward all documentation relevant to the dispute, including FHWA's proposed resolution, to the Council. The Council shall provide FHWA with its advice on the resolution of the objection within thirty days of receiving adequate documentation. Prior to reaching a final decision on the dispute, FHWA shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the Council, signatories and concurring parties, and provide them with a copy of this written response. FHWA will then proceed according to its final decision.

B. If the Council does not provide its advice regarding the dispute within the thirty day time period, FHWA may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, FHWA shall prepare a written response that

takes into account any timely comments regarding the dispute from the signatories and concurring parties to the MOA, and provide them and the Council with a copy of such written response.

C. FHWA's responsibility to carry out all other actions subject to the terms of this MOA that are not the subject of the dispute remain unchanged.

IX. TERMINATION

If any signatory to this MOA determines that its terms will not or cannot be carried out, that party shall immediately consult with the other parties to attempt to develop an amendment per 36 CFR 800.6(c)(7). If within thirty (30) days (or another time period agreed to by all signatories) an amendment cannot be reached, any signatory may terminate the MOA upon written notification to the other signatories.

Once the MOA is terminated, FHWA must either (a) execute an MOA pursuant to 36 CFR 800.6 or (b) request, take into account, and respond to the comments of the Council under 36 CFR 800.7. FHWA shall notify the signatories as to the course of action it will pursue.

Execution of this MOA by FHWA, the SHPO, and the Council and implementation of its terms evidence that FHWA has taken into account the effects of this undertaking on historic properties and afforded the Council an opportunity to comment.

DRAFT

SIGNATORIES:

FEDERAL HIGHWAY ADMINISTRATION, MASSACHUSETTS DIVISION

By:_____ Date: _____
Pamela S. Stephenson, Division Administrator

MASSACHUSETTS STATE HISTORIC PRESERVATION OFFICER

By:_____ Date: _____
Brona Simon, State Historic Preservation Officer

ADVISORY COUNCIL ON HISTORIC PRESERVATION

By:_____ Date: _____
John M. Fowler, Executive Director

INVITED SIGNATORIES:

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION

By:_____ Date: _____
Frank DePaola, Administrator, Highway Division

TOWN OF CHATHAM

By:_____ Date: _____
Florence Seldin, President, Board of Selectmen

DRAFT

MEMORANDUM OF AGREEMENT
AMONG
THE FEDERAL HIGHWAY ADMINISTRATION,
THE MASSACHUSETTS STATE HISTORIC PRESERVATION OFFICER, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING THE REPLACEMENT OF THE
MITCHELL RIVER BRIDGE (C-07-001) IN CHATHAM, MASSACHUSETTS

CONCURRING PARTY

CHATHAM HISTORICAL COMMISSION

By:_____ Date: _____
Robert D. Oliver, Chairman

DRAFT

MEMORANDUM OF AGREEMENT
AMONG
THE FEDERAL HIGHWAY ADMINISTRATION,
THE MASSACHUSETTS STATE HISTORIC PRESERVATION OFFICER, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING THE REPLACEMENT OF THE
MITCHELL RIVER BRIDGE (C-07-001) IN CHATHAM, MASSACHUSETTS

CONCURRING PARTY

FRIENDS OF THE MITCHELL RIVER WOODEN DRAWBRIDGE

By:_____ Date: _____
Norman Pacun

CONCURRING PARTY

PEASE BOAT WORKS & MARINE RAILWAY

By:_____ Date: _____
Michael Pease, President

CONCURRING PARTY

PRESERVATION MASSACHUSETTS

By:_____ Date: _____
James W. Igoe, President

DRAFT

MEMORANDUM OF AGREEMENT
AMONG
THE FEDERAL HIGHWAY ADMINISTRATION,
THE MASSACHUSETTS STATE HISTORIC PRESERVATION OFFICER, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING THE REPLACEMENT OF THE
MITCHELL RIVER BRIDGE (C-07-001) IN CHATHAM, MASSACHUSETTS

CONCURRING PARTY

NATIONAL TRUST FOR HISTORIC PRESERVATION

By:_____ Date: _____
Elizabeth Merritt, Deputy General Council

DRAFT

MEMORANDUM OF AGREEMENT
AMONG
THE FEDERAL HIGHWAY ADMINISTRATION,
THE MASSACHUSETTS STATE HISTORIC PRESERVATION OFFICER, AND
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING THE REPLACEMENT OF THE
MITCHELL RIVER BRIDGE (C-07-001) IN CHATHAM, MASSACHUSETTS

CONCURRING PARTY

HISTORIC BRIDGE FOUNDATION

By:_____ Date: _____
Kitty Henderson, Executive Director

CONCURRING PARTY

INDIANA HISTORIC SPANS TASKFORCE

By:_____ Date: _____
Paul Brandenburg, Chairman

CONCURRING PARTY

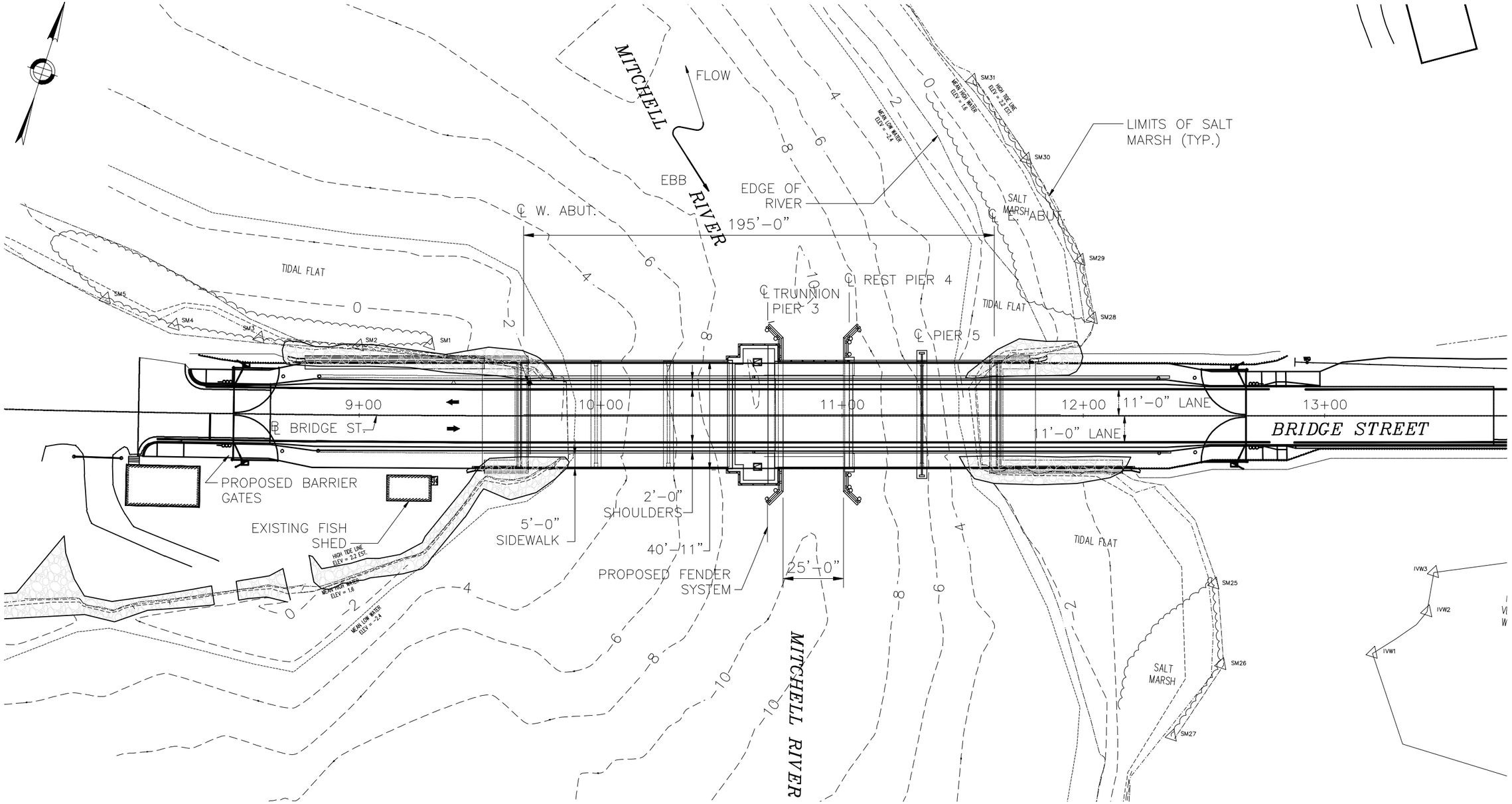
JAMES L. COOPER, PH. D.

By:_____ Date: _____
James L. Cooper, Ph. D.

CONCURRING PARTY

GEORGE MYERS

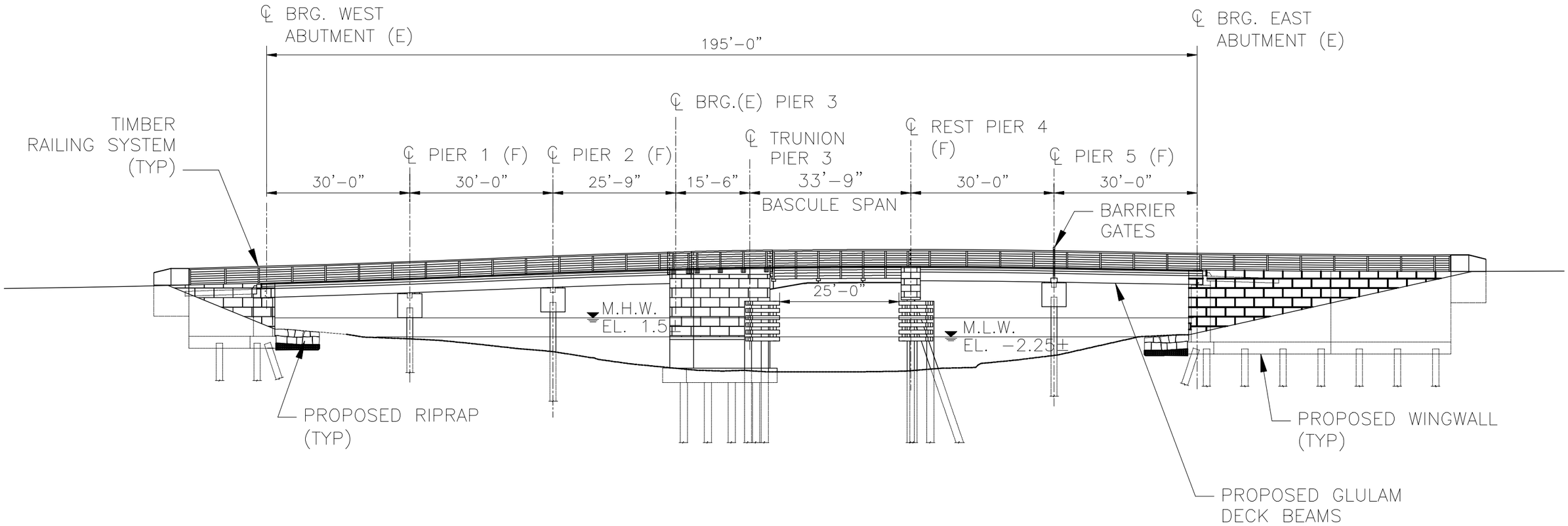
By:_____ Date: _____
George Myers



KEY PLAN

SCALE: 1"=500'

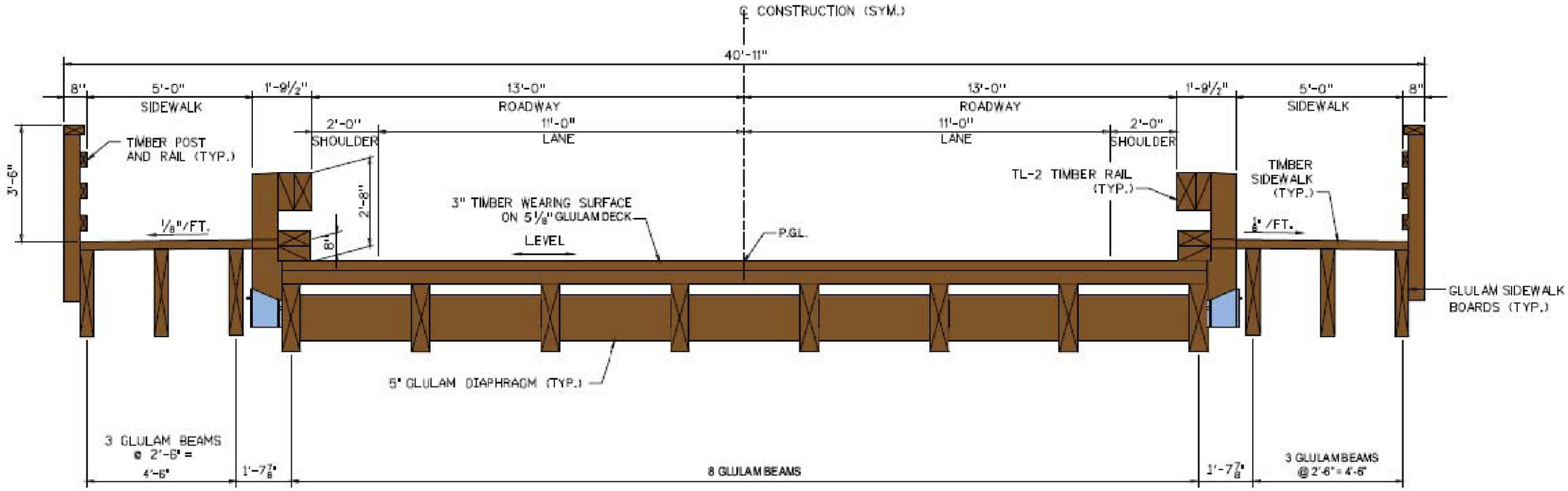
URS CORPORATION 260 FRANKLIN ST., SUITE 300 BOSTON, MA 02110–3112	Moving Massachusetts Forward. massDOT Highway MASSACHUSETTS DEPARTMENT OF TRANSPORTATION	ALTERNATIVE 3 TIMBER SUPERSTRUCTURE ON CONCRETE AND STEEL SUBSTRUCTURE WITH STEEL BASCULE LEAF ON CONCRETE BASCULE PIER	**CHATHAM** BRIDGE STREET OVER MITCHELL RIVER	FIGURE **1**



BRIDGE ELEVATION

SCALE: 1"=250'

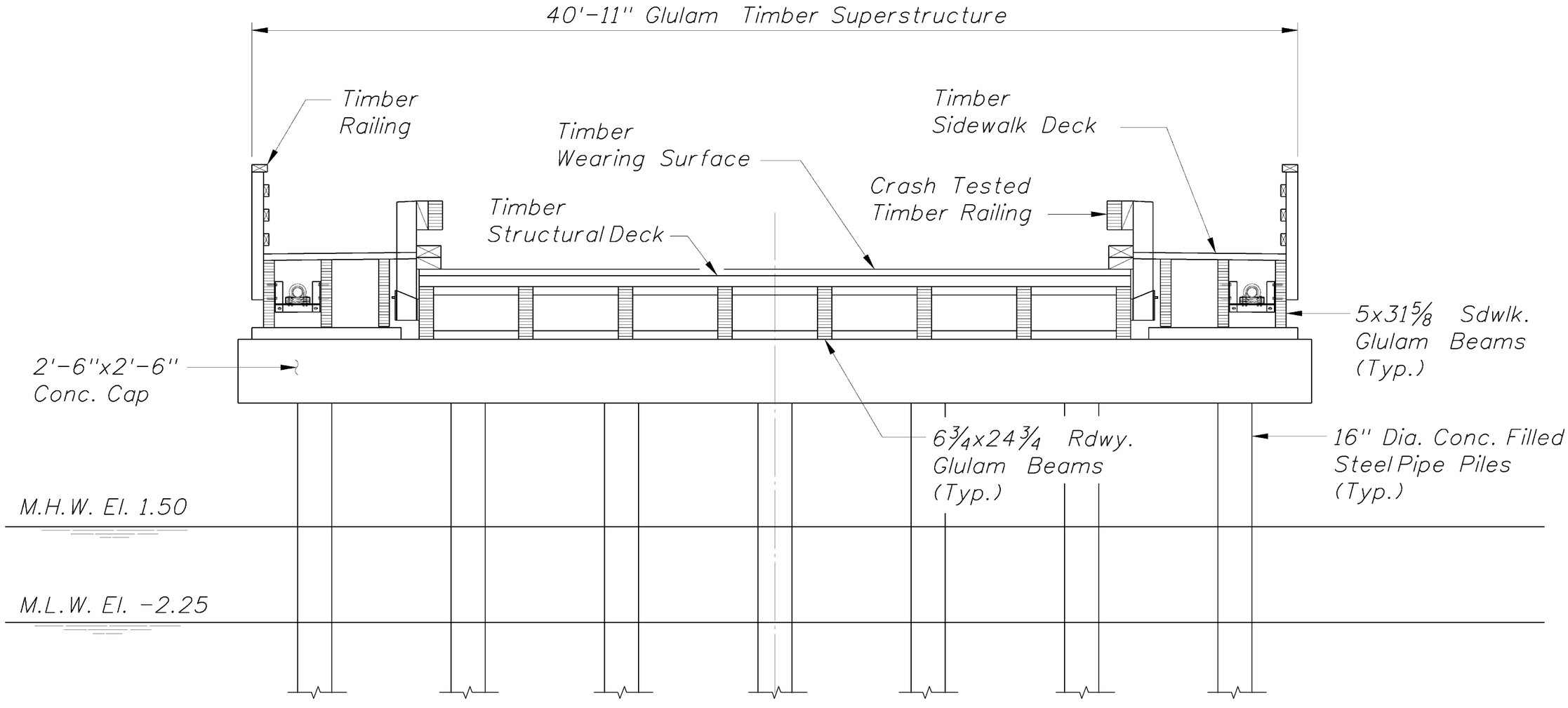
URS CORPORATION 260 FRANKLIN ST., SUITE 300 BOSTON, MA 02110–3112	Moving Massachusetts Forward. massDOT Highway MASSACHUSETTS DEPARTMENT OF TRANSPORTATION	ALTERNATIVE 3 TIMBER SUPERSTRUCTURE ON CONCRETE AND STEEL SUBSTRUCTURE WITH STEEL BASCULE LEAF ON CONCRETE BASCULE PIER	**CHATHAM** BRIDGE STREET OVER MITCHELL RIVER	FIGURE **2**



SECTION THRU APPROACH SPAN

SCALE: 1"=40'

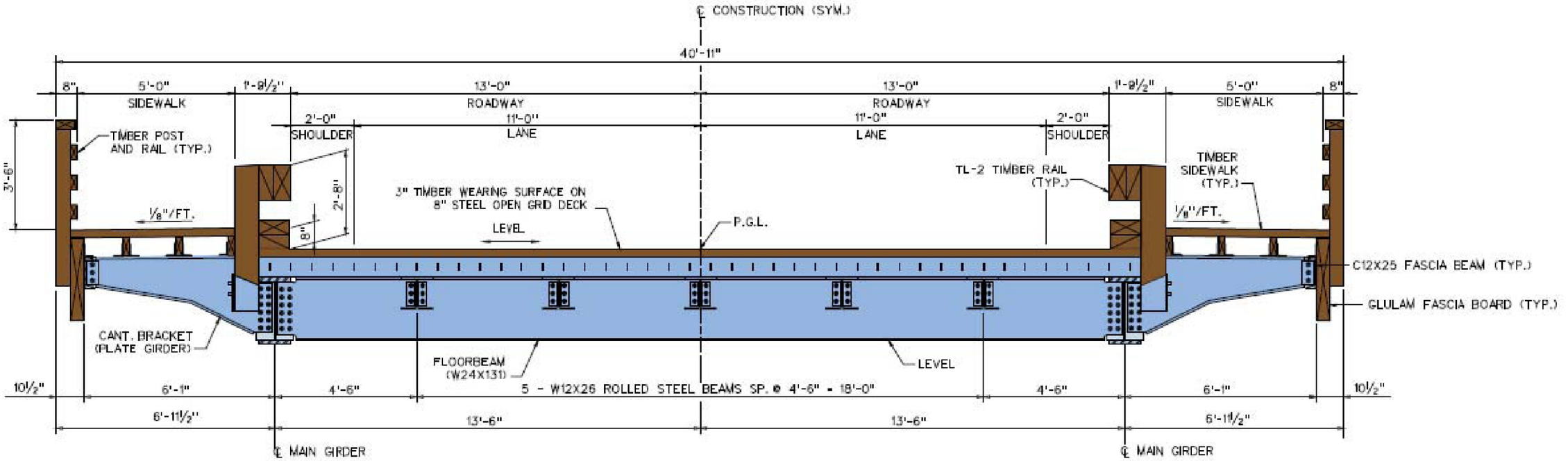
URS CORPORATION 260 FRANKLIN ST., SUITE 300 BOSTON, MA 02110-3112	Moving Massachusetts Forward. massDOT Highway MASSACHUSETTS DEPARTMENT OF TRANSPORTATION	ALTERNATIVE 3 TIMBER SUPERSTRUCTURE ON CONCRETE AND STEEL SUBSTRUCTURE WITH STEEL BASCULE LEAF ON CONCRETE BASCULE PIER	**CHATHAM** BRIDGE STREET OVER MITCHELL RIVER	FIGURE **3a**



SECTION THRU APPROACH SPAN AT CONCRETE PIER

SCALE: 1"=50'

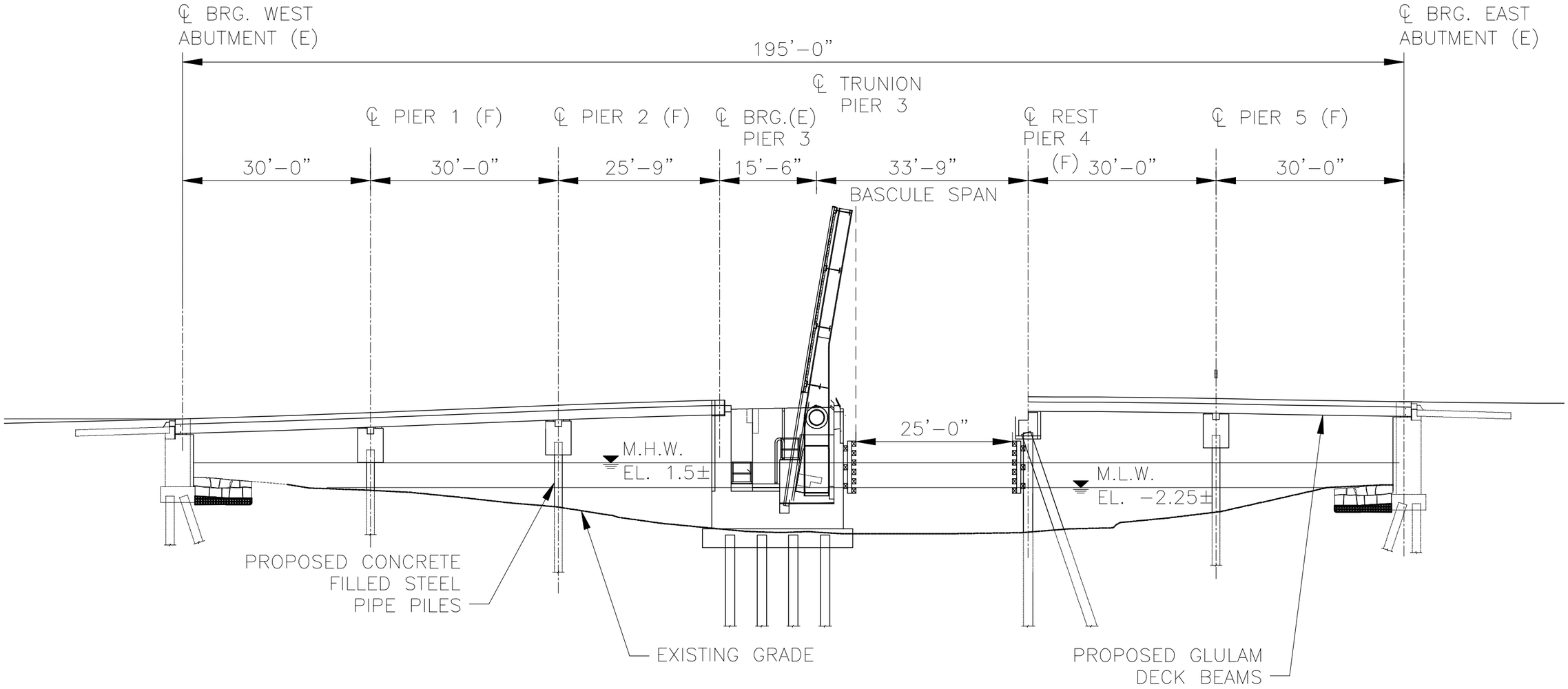
URS CORPORATION 260 FRANKLIN ST., SUITE 300 BOSTON, MA 02110-3112	Moving Massachusetts Forward. massDOT Highway MASSACHUSETTS DEPARTMENT OF TRANSPORTATION	ALTERNATIVE 3 TIMBER SUPERSTRUCTURE ON CONCRETE AND STEEL SUBSTRUCTURE WITH STEEL BASCULE LEAF ON CONCRETE BASCULE PIER	**CHATHAM** BRIDGE STREET OVER MITCHELL RIVER	FIGURE **3b**



SECTION THRU BASCULE SPAN

SCALE: 1"=40'

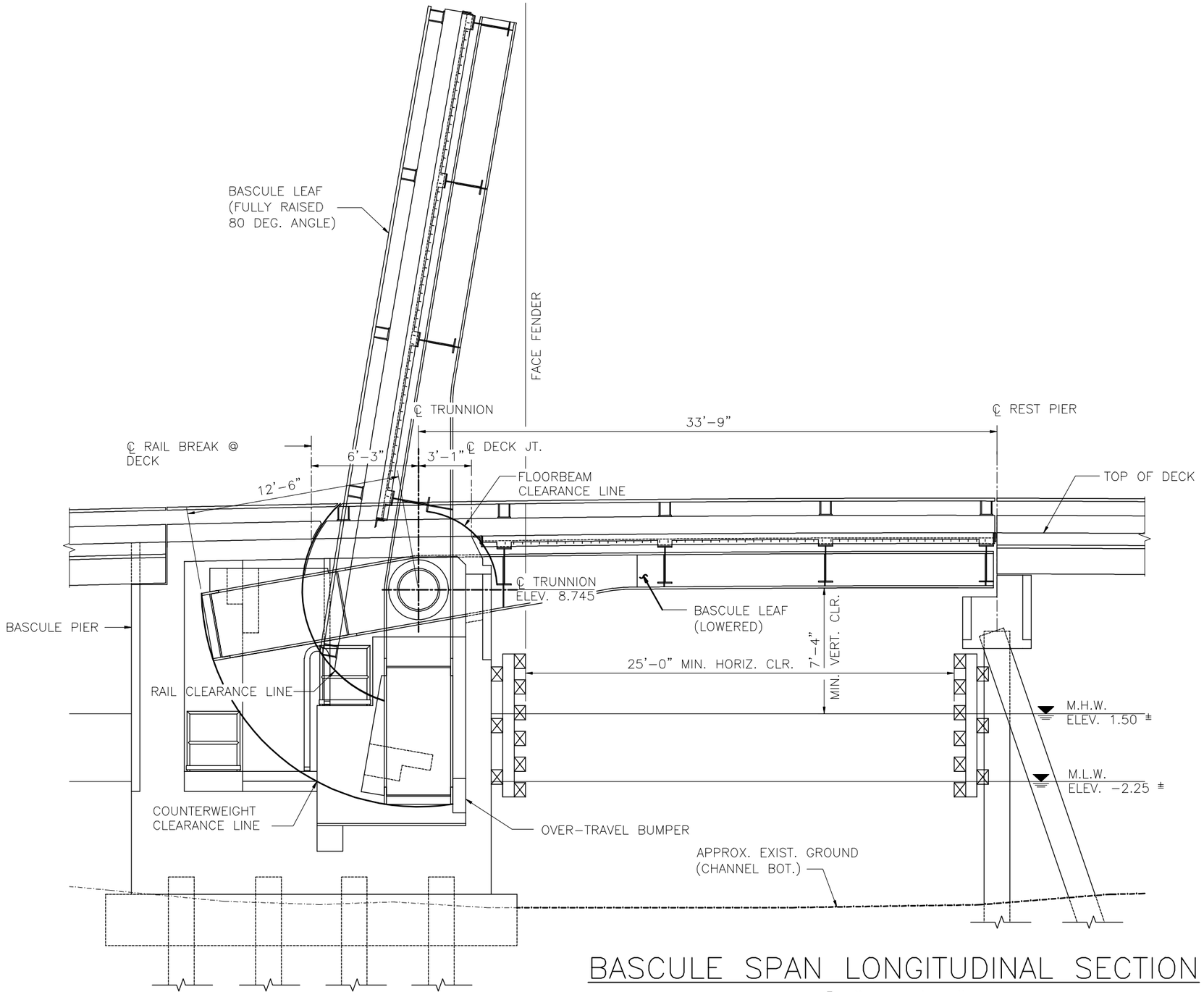
URS CORPORATION 260 FRANKLIN ST., SUITE 300 BOSTON, MA 02110-3112	Moving Massachusetts Forward. massDOT Highway MASSACHUSETTS DEPARTMENT OF TRANSPORTATION	ALTERNATIVE 3 TIMBER SUPERSTRUCTURE ON CONCRETE AND STEEL SUBSTRUCTURE WITH STEEL BASCULE LEAF ON CONCRETE BASCULE PIER	**CHATHAM** BRIDGE STREET OVER MITCHELL RIVER	FIGURE **4**



BASCULE PROFILE – OPEN POSITION

SCALE: 1"=200'

URS CORPORATION 260 FRANKLIN ST., SUITE 300 BOSTON, MA 02110–3112	MassDOT Highway MASSACHUSETTS DEPARTMENT OF TRANSPORTATION	ALTERNATIVE 3 TIMBER SUPERSTRUCTURE ON CONCRETE AND STEEL SUBSTRUCTURE WITH STEEL BASCULE LEAF ON CONCRETE BASCULE PIER	CHATHAM BRIDGE STREET OVER MITCHELL RIVER	FIGURE 5



BASCULE SPAN LONGITUDINAL SECTION

SCALE: $\frac{5}{32}$" = 1'–0"

URS CORPORATION
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Moving Massachusetts Forward. massDOT Highway

MASSACHUSETTS
DEPARTMENT OF TRANSPORTATION

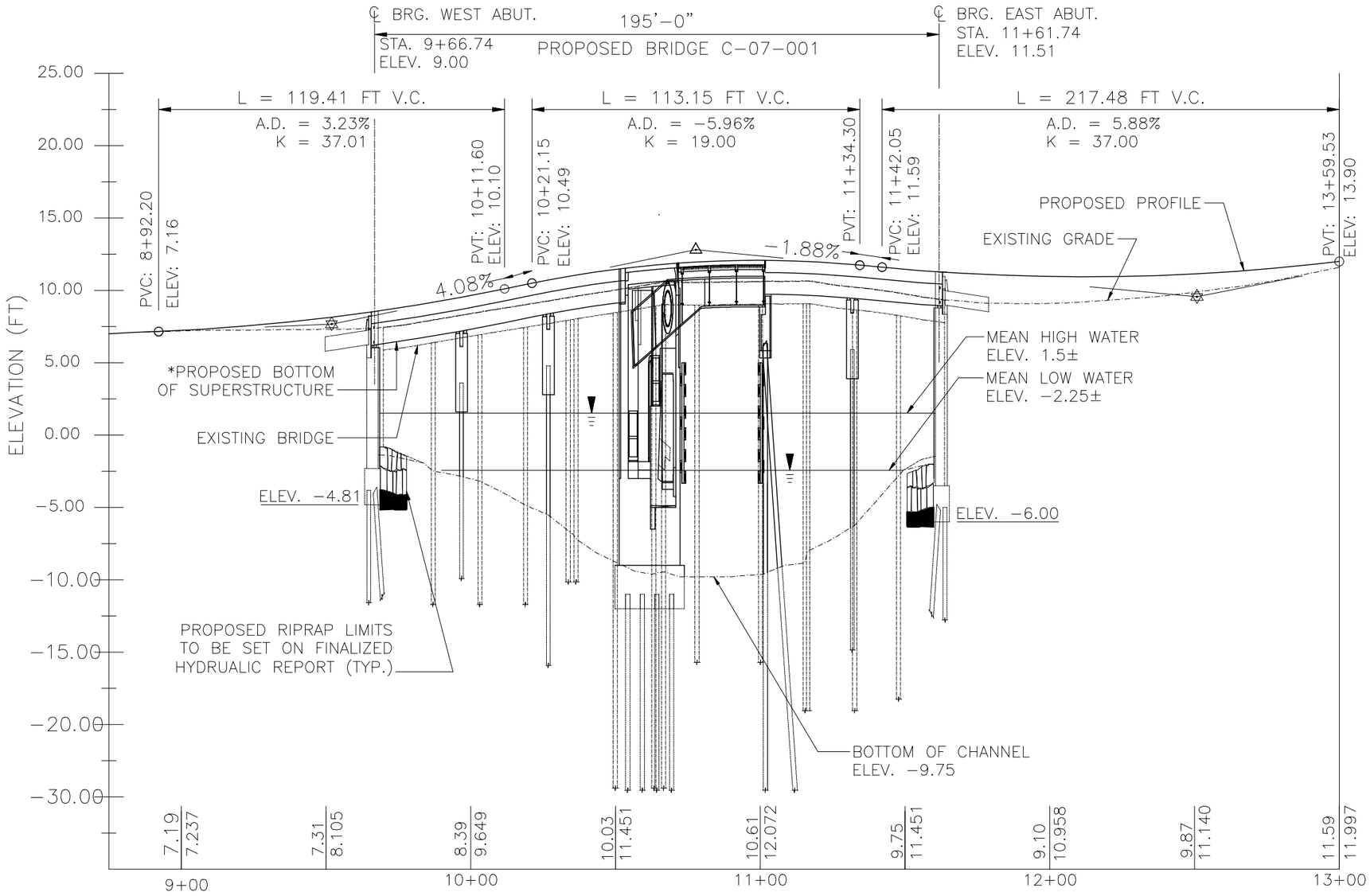
ALTERNATIVE 3

TIMBER SUPERSTRUCTURE ON CONCRETE AND STEEL SUBSTRUCTURE WITH STEEL BASCULE LEAF ON CONCRETE BASCULE PIER

CHATHAM

BRIDGE STREET
OVER MITCHELL RIVER

FIGURE
6



PROFILE ALONG BRIDGE STREET

SCALE: 1"=500' HOR.
SCALE: 1"=10' VER.

URS CORPORATION 260 FRANKLIN ST., SUITE 300 BOSTON, MA 02110-3112	Moving Massachusetts Forward. massDOT Highway MASSACHUSETTS DEPARTMENT OF TRANSPORTATION	ALTERNATIVE 3 TIMBER SUPERSTRUCTURE ON CONCRETE AND STEEL SUBSTRUCTURE WITH STEEL BASCULE LEAF ON CONCRETE BASCULE PIER	**CHATHAM** BRIDGE STREET OVER MITCHELL RIVER	FIGURE **7**

FULL ELEVATION VIEW OF
PROPOSED BRIDGE

SCALE: N.T.S.

URS CORPORATION 260 FRANKLIN ST., SUITE 300 BOSTON, MA 02110-3112	Moving Massachusetts Forward. massDOT Highway MASSACHUSETTS DEPARTMENT OF TRANSPORTATION	ALTERNATIVE 3 TIMBER SUPERSTRUCTURE ON CONCRETE AND STEEL SUBSTRUCTURE WITH STEEL BASCULE LEAF ON CONCRETE BASCULE PIER	**CHATHAM** BRIDGE STREET OVER MITCHELL RIVER	FIGURE **8**

PARTIAL ELEVATION VIEW OF
PROPOSED BRIDGE

SCALE: N.T.S.

URS CORPORATION 260 FRANKLIN ST., SUITE 300 BOSTON, MA 02110-3112	Moving Massachusetts Forward. massDOT Highway MASSACHUSETTS DEPARTMENT OF TRANSPORTATION	ALTERNATIVE 3 TIMBER SUPERSTRUCTURE ON CONCRETE AND STEEL SUBSTRUCTURE WITH STEEL BASCULE LEAF ON CONCRETE BASCULE PIER	**CHATHAM** BRIDGE STREET OVER MITCHELL RIVER	FIGURE **9**

SIDEWALK VIEW OF PROPOSED
BRIDGE LOOKING WEST

SCALE: N.T.S.

URS CORPORATION
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Moving Massachusetts Forward. massDOT Highway

MASSACHUSETTS
DEPARTMENT OF TRANSPORTATION

ALTERNATIVE 3

TIMBER SUPERSTRUCTURE ON CONCRETE AND STEEL SUBSTRUCTURE WITH STEEL BASCULE LEAF ON CONCRETE BASCULE PIER

CHATHAM

BRIDGE STREET
OVER MITCHELL RIVER

FIGURE
10