REQUEST FOR PROPOSAL

RFP # 26-37

Design Engineering for the South Barton Pedestrian Bridge

City of Ann Arbor
Community Services Area
Parks and Recreation Services

Due Date: July 30, 2026 by 2:00 p.m. (local time)

Issued By:

City of Ann Arbor
Procurement Unit
301 E. Huron Street
Ann Arbor, MI 48104

TABLE OF CONTENTS

SECTION I: GENERAL INFORMATION 3

SECTION II: SCOPE OF SERVICES 10

SECTION III: MINIMUM INFORMATION REQUIRED 16

SECTION IV: ATTACHMENTS 20

APPENDIX A: SAMPLE PROFESSIONAL SERVICES AGREEMENT

SECTION I - GENERAL INFORMATION

A. OBJECTIVE

The purpose of this Request for Proposal (RFP) is to select the services of a firm or firms, to design a new pedestrian bridge in Barton Nature Area to replace the existing south bridge, and provide all the necessary professional project management and design engineering services for the project. The project will also include design of accessibility improvements to a nearby parking lot in Bandemer Park.

B. QUESTIONS AND CLARIFICATIONS / DESIGNATED CITY CONTACTS

All questions regarding this Request for Proposal (RFP) shall be submitted via e-mail. Questions will be accepted and answered in accordance with the terms and conditions of this RFP.

All questions shall be submitted on or before July 8 2026 at 10:00 a.m., and should be addressed as follows:

Scope of Work/Proposal Content questions shall be e-mailed to Hillary Hanzel, Landscape Architect Capital Project Manager - Hhanzel@a2gov.org

RFP Process and Compliance questions shall be e-mailed to Colin Spencer, Buyer - CSpencer@a2gov.org

Should any prospective offeror be in doubt as to the true meaning of any portion of this RFP, or should the prospective offeror find any ambiguity, inconsistency, or omission therein, the prospective offeror shall make a written request for an official interpretation or correction by the due date for questions above.

All interpretations, corrections, or additions to this RFP will be made only as an official addendum that will be posted to a2gov.org and MITN.info and it shall be the prospective offeror's responsibility to ensure they have received all addenda before submitting a proposal. Any addendum issued by the City shall become part of the RFP, and must be incorporated in the proposal where applicable.

C. PRE-PROPOSAL MEETING

A pre-proposal meeting will be held virtually:

WHEN: Thursday, July 2 2026 at 11:00 a.m.
WHERE: Virtual Teams Meeting

The meeting is not mandatory; however, it is highly recommended that interested offerors attend the meeting. The purpose of this meeting is to discuss the project with

prospective offerors and to answer any questions concerning RFP# 26-37. Any questions and answers furnished in the pre-proposal meeting will not be official until verified in writing through an addendum.

Those interested in participating should email Hillary Hanzel, Landscape Architect Capital Project Manager at hhanzel@a2gov.org with the subject line Pre-Proposal Meeting RSVP RFP# 26-37 to receive the login information for the virtual meeting.

D. PROPOSAL FORMAT

To be considered, each firm must submit a response to this RFP using the format provided in Section III. No other distribution of proposals is to be made by the prospective offeror. An official authorized to bind the offeror to its provisions must sign the proposal. Each proposal must remain valid for at least ninety days from the due date of this RFP.

Proposals should be prepared simply and economically providing a straightforward, concise description of the offeror's ability to meet the requirements of the RFP. No erasures are permitted. Mistakes may be crossed out and corrected and must be initialed in ink by the person signing the proposal.

E. SELECTION CRITERIA

Responses to this RFP will be evaluated using a point system as shown in Section III. A selection committee comprised of staff from the City will complete the evaluation.

The fee proposals will not be reviewed at the initial evaluation. After initial evaluation, the City will determine top proposals, and open only those fee proposals. The City will then determine which, if any, firms will be interviewed. During the interviews, the selected firms will be given the opportunity to discuss their proposal, qualifications, past experience, and their fee proposal in more detail. The City further reserves the right to interview the key personnel assigned by the selected offeror to this project. If the City chooses to interview any respondents, the interviews will be tentatively held the **week of August 17, 2026**. Offeror must be available on these dates.

All proposals submitted may be subject to clarifications and further negotiation. All agreements resulting from negotiations that differ from what is represented within the RFP or in the proposal response shall be documented and included as part of the final contract.

F. SEALED PROPOSAL SUBMISSION

All proposals are due and must be delivered to the City on or before July 30, 2026 by 2:00 p.m. (local time). Proposals submitted late or via oral, telephonic, telegraphic, electronic mail or facsimile **will not** be considered or accepted.

Each respondent must submit in a sealed envelope

- **one (1) original proposal**
- **two (2) additional proposal copies**
- **one (1) digital copy of the proposal preferably on a USB/flash drive as one file in PDF format**

Each respondent should submit in a single separate sealed envelope marked Fee Proposal

- **two (2) copies of the fee proposal**

The fee proposal and all costs should be separate from the rest of the proposal.

Proposals submitted should be clearly marked: **"RFP No. 26-37 – Design Engineering for the South Barton Pedestrian Bridge**" and list the offeror's name and address.

Proposals must be addressed and delivered to:
City of Ann Arbor
c/o Customer Service
301 East Huron Street
Ann Arbor, MI 48104

All proposals received on or before the due date will be publicly opened and recorded on the due date. No immediate decisions will be rendered.

Hand delivered bids may be dropped off in the Purchasing drop box located in the Ann Street (north) vestibule/entrance of City Hall which is open to the public Monday through Friday from 8am to 5pm (except holidays). The City will not be liable to any prospective offeror for any unforeseen circumstances, delivery, or postal delays. Postmarking on the due date will not substitute for receipt of the proposal. Offerors are responsible for submission of their proposal. Additional time will not be granted to a single prospective offeror. However, additional time may be granted to all prospective offerors at the discretion of the City.

A proposal may be disqualified if the following required forms are not included with the proposal:

- **Attachment C - City of Ann Arbor Non-Discrimination Declaration of Compliance**
- **Attachment D - City of Ann Arbor Living Wage Declaration of Compliance**
- **Attachment E - Vendor Conflict of Interest Disclosure Form of the RFP Document**

Proposals that fail to provide these forms listed above upon proposal opening may be deemed non-responsive and may not be considered for award.

Please provide the forms outlined above (Attachments C, D and E) within your narrative proposal, not within the separately sealed Fee Proposal envelope.

All proposed fees, cost or compensation for the services requested herein should be provided in the separately sealed Fee Proposal envelope only.

G. DISCLOSURES

Under the Freedom of Information Act (Public Act 442), the City is obligated to permit review of its files, if requested by others. All information in a proposal is subject to disclosure under this provision. This act also provides for a complete disclosure of contracts and attachments thereto.

H. TYPE OF CONTRACT

A sample of the Professional Services Agreement is included as Appendix A. Those who wish to submit a proposal to the City are required to review this sample agreement carefully. **The City will not entertain changes to its Professional Services Agreement.**

The City reserves the right to award the total proposal, to reject any or all proposals in whole or in part, and to waive any informality or technical defects if, in the City's sole judgment, the best interests of the City will be so served.

This RFP and the selected offeror's response thereto, shall constitute the basis of the scope of services in the contract by reference.

I. NONDISCRIMINATION

All offerors proposing to do business with the City shall satisfy the contract compliance administrative policy adopted by the City Administrator in accordance with the Section 9:158 of the Ann Arbor City Code. Breach of the obligation not to discriminate as outlined in Attachment C shall be a material breach of the contract. Contractors are required to post a copy of Ann Arbor's Non-Discrimination Ordinance attached at all work locations where its employees provide services under a contract with the City.

J. WAGE REQUIREMENTS

The Attachments provided herein outline the requirements for payment of prevailing wages or of a "living wage" to employees providing service to the City under this contract. The successful offeror must comply with all applicable requirements and provide documentary proof of compliance when requested.

K. CONFLICT OF INTEREST DISCLOSURE

The City of Ann Arbor Purchasing Policy requires that the consultant complete a Conflict of Interest Disclosure form. A contract may not be awarded to the selected offeror unless and until the Procurement Unit and the City Administrator have reviewed the Disclosure form and determined that no conflict exists under applicable federal, state, or local law or administrative regulation. Not every relationship or situation disclosed on the Disclosure Form may be a disqualifying conflict. Depending on applicable law and regulations, some contracts may awarded on the recommendation of the City Administrator after full disclosure, where such action is allowed by law, if demonstrated competitive pricing exists and/or it is determined the award is in the best interest of the City. A copy of the Conflict of Interest Disclosure Form is attached.

L. COST LIABILITY

The City of Ann Arbor assumes no responsibility or liability for costs incurred by the offeror prior to the execution of a Professional Services Agreement. The liability of the City is limited to the terms and conditions outlined in the Agreement. By submitting a proposal, offeror agrees to bear all costs incurred or related to the preparation, submission, and selection process for the proposal.

M. DEBARMENT

Submission of a proposal in response to this RFP is certification that the Respondent is not currently debarred, suspended, proposed for debarment, and declared ineligible or voluntarily excluded from participation in this transaction by any State or Federal departments or agency. Submission is also agreement that the City will be notified of any changes in this status.

N. PROPOSAL PROTEST

All protests must be in writing and filed with the Purchasing Agent within 5 business days of any notices of intent, including, but not exclusively, divisions on pre-qualification of bidders, shortlisting of bidders, or a notice of intent to award a contract. Only bidders who responded to the solicitation may file a bid protest. The offeror must clearly state the reasons for the protest. If an offeror contacts a City Service Area/Unit and indicates a desire to protest an award, the Service Area/Unit shall refer the offeror to the Purchasing Manager. The Purchasing Manager will provide the offeror with the appropriate instructions for filing the protest. The protest shall be reviewed by the City Administrator or designee, whose decision shall be final.

Any inquiries or requests regarding this procurement should be only submitted in writing to the Designated City Contacts provided herein. Attempts by the offeror to initiate contact with anyone other than the Designated City Contacts provided herein that the offeror believes can influence the procurement decision, e.g., Elected Officials, City Administrator, Selection Committee Members, Appointed Committee Members, etc., may lead to immediate elimination from further consideration.

O. SCHEDULE

The proposals submitted should define an appropriate schedule in accordance with the requirements of the Proposed Work Plan in Section III.

The following is the schedule for this RFP process.

Activity/Event	Anticipated Date
Optional Pre-Proposal Meeting	July 2, 2026, 11:00 a.m.
Written Question Deadline	July 8, 2026, 10:00 a.m.
Addenda Published (if needed)	Week of July 13, 2026
Proposal Due Date	July 30, 2026, 2 p.m. (Local Time)
Tentative Interviews (if needed)	Week of August 17, 2026
Selection/Negotiations	August/September 2026
Expected City Council Authorizations	September/October 2026

The above schedule is for information purposes only and is subject to change at the City's discretion.

P. IRS FORM W-9

The selected offeror will be required to provide the City of Ann Arbor an IRS form W-9.

Q. RESERVATION OF RIGHTS

1. The City reserves the right in its sole and absolute discretion to accept or reject any or all proposals, or alternative proposals, in whole or in part, with or without cause.
2. The City reserves the right to waive, or not waive, informalities or irregularities in of any proposal if determined by the City to be in its best interest.
3. The City reserves the right to request additional information from any or all offerors.
4. The City reserves the right to reject any proposal that it determines to be unresponsive and deficient in any of the information requested within RFP.
5. The City reserves the right to determine whether the scope of the project will be entirely as described in the RFP, a portion of the scope, or a revised scope be implemented.
6. The City reserves the right to select one or more consultants to perform services.
7. The City reserves the right to retain all proposals submitted and to use any ideas in a proposal regardless of whether that proposal is selected. Submission of a proposal indicates acceptance by the firm of the conditions contained in this RFP, unless clearly and specifically noted in the proposal submitted.
8. The City reserves the right to disqualify proposals that fail to respond to any requirements outlined in the RFP, or failure to enclose copies of the required documents outlined within RFP.

R. ENVIRONMENTAL COMMITMENT

The City of Ann Arbor recognizes its responsibility to minimize negative impacts on human health and the environment while supporting a vibrant community and economy. The City further recognizes that the products and services the City buys have inherent environmental and economic impacts and that the City should make procurement decisions that embody, promote and encourage the City's commitment to the environment.

The City strongly encourages potential vendors to bring forward tested, emerging, innovative, and environmentally preferable products and services that are best suited to the City's environmental principles. This includes products and services such as those with lower greenhouse gas emissions, high recycled content, without toxic substances, those with high reusability or recyclability, those that reduce the consumption of virgin materials, and those with low energy intensity.

As part of its environmental commitment, the City reserves the right to award a contract to the most responsive and responsible bidder, which includes bids that bring forward products or services that help advance the City's environmental commitment. In addition, the City reserves the right to request that all vendors report their annual greenhouse gas emissions, energy consumption, miles traveled, or other relevant criteria in order to help the City more fully understand the environmental impact of its procurement decisions.

SECTION II - SCOPE OF SERVICES

1. Objective

The City of Ann Arbor (City) Parks and Recreation Unit is seeking a firm, or firms, to design a replacement structure for the South Barton Bridge, an existing 304-foot-long pedestrian crossing over the Huron River located within Barton Nature Area. The existing South Barton Bridge is in poor condition and is not compliant with modern standards for a key pedestrian and cycling link within the greater regional trail network.

The new structure is anticipated to be a 14-foot wide two-span continuous steel beam bridge with a poured-in-place concrete deck and an integrated observation platform. While it is designed as a pedestrian structure, there is a desire to meet load ratings to carry maintenance vehicles. This structure will also incorporate an observation platform (approximately 6-foot by 20-foot) at the middle pier, providing a valuable public space for enjoying river views.

This project also includes designing accessibility improvements to a nearby parking lot in Bandemer Park, which will provide an accessible trailhead and access to the bridge.

2. Background

Inspection:
In late 2024, the bridge was inspected with portions of the decking removed, and the City's bridge inspection consultant identified multiple high-priority recommendations for repair or replacement of the bridge. Given the extent of the structural steel deterioration, the 2024 inspection report indicated that these issues should be addressed by a full replacement of the existing structure. The inspection report is included in Attachment A as Appendix A.

Alternatives Analysis:
The City of Ann Arbor (City) Parks and Recreation Unit engaged OHM Advisors (OHM) to conduct an alternatives analysis for the replacement of the South Barton Bridge to identify issues, explore potential solutions, and provide a recommended structure type and cost estimate. The Alternatives Analysis report is included as Attachment A.

The project team evaluated two primary bridge alternatives: a single-span 14-foot wide prefabricated truss bridge and a 14-foot wide two-span continuous steel beam bridge with a concrete deck. The recommended option is the two-span continuous steel beam bridge with a poured-in-place concrete deck.

Border to Border Trail:

This bridge is located along the Border to Border Trail, part of the statewide Iron Belle Trail, and is heavily used. The current structure with its 8-foot clear width is not adequate to comply with the American Association of State Highway and Transportation Officials (AASHTO) recommended 14-foot clear width for bicycle facilities.

3. Existing Conditions

The existing bridge and site presents the following issues:

a. Does not meet AASHTO standards for a bicycle facility.
b. Is unable to support access for vehicles to the Barton Peninsula, which is isolated by the Huron River and Amtrak Railroad.
c. Large construction equipment cannot access the north side of the river because the adjacent railroad corridor blocks direct access, so constructability considerations will be paramount.
d. The site's slopes and location along a critical river also require careful environmental protection measures and permitting to prevent erosion and preserve natural features.

.

4. Permits

The following permits are anticipated to be required and should be reviewed during detailed design.

a. Michigan Department of Environment, Great Lakes, and Energy (EGLE) Joint Permit under provisions Part 31 and Part 301 of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. If wetlands are determined to be impacted by the project, Part 303 shall also apply and a Wetland Permit will additionally be required from the City of Ann Arbor prior to application with EGLE.
b. The potential presence of state and/or federally listed mussel species will require coordination with the MDNR and U.S. Fish & Wildlife Service (USFWS). A federal permit will be required to survey for federally listed species.
c. City of Ann Arbor Soil Erosion Control
d. City of Ann Arbor Right-of-Way
e. City of Ann Arbor Floodplain

5. Constructability Considerations:

a. The replacement of the South Barton Bridge faces considerable constructability challenges, with the most notable being that large construction equipment cannot access the north side of the river because the adjacent railroad corridor blocks direct access.

b. No access across the railroad tracks will be approved for this project, so the assumption for construction is that all access will be from the south.Given the current 300-foot bridge span, temporary measures will be necessary to support access and construction on the north side of the river.
c. Based on discussions with bridge contractors, a temporary construction bridge is proposed to be constructed on the east side of the existing bridge to provide crane access into the river from the south.
d. This temporary construction bridge will likely need to be permitted as part of the design phase.

Figure 1 below depicts the proposed South Barton Bridge location and the associated access constraints to the Barton Nature Area created by the Huron River and MDOT/Amtrak railroad corridor.

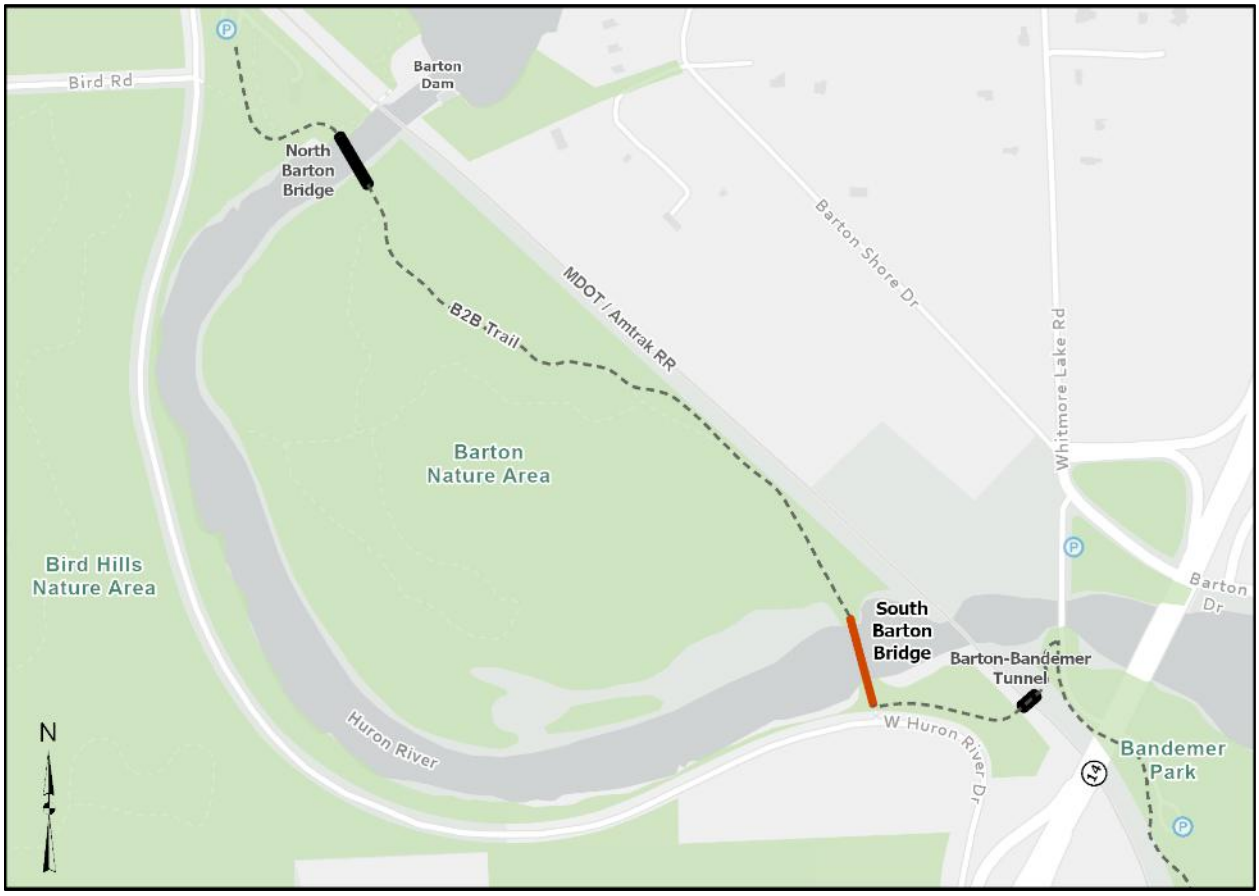


Figure 1 – Barton Nature Area Key Map

6. Funding

a. Funding for this professional services contract will be from the Park Maintenance and Capital Improvements Millage.
b. Funding for the future construction of the structure will likely include grant support, such as from the Michigan Natural Resources Trust Fund, Ralph

Wilson Trail Maintenance Fund, and local partnerships with the Huron Waterloo Pathways Initiative or the Washtenaw County Parks & Recreation Commission.

c. No federal funding is anticipated for this project.

7. Schedule

a. Construction of the bridge is anticipated to begin in the fall of 2027, to avoid the high-use summer season. The bridge construction would continue over the winter and be completed in the late spring of 2028.

b. Maintaining this timeline will require the City to begin the design process as soon as possible and target bidding the project in the late spring or early summer of 2027.

c. There will likely need to be built in coordination and review by granting organizations prior to bidding and award as well.

8. SCOPE OF WORK

a. The selected firm(s) shall design the new south pedestrian bridge in Barton Nature Area, and all related approach improvements. All improvements shall be designed in accordance with the applicable AASHTO, City of Ann Arbor, ADA, MDOT, and any other applicable and relevant standards.

b. The City is seeking proposals from qualified professional engineering consulting firms to provide the necessary design and project management services for the preparation of plans and specifications to competitively bid and construct these improvements.

In general, the following items will need to be addressed by the consulting firm, in accordance with Section III of this request:

1) The Lead Consultant shall manage all aspects of the project design up to the award of the construction contract(s) for the project. This includes but, is not limited to; managing all aspects of the project, including the work of all sub-consultants and project coordination with all affected agencies. **The Project Manager must ensure the timely and effective delivery of the project design, as well as provide oversight and detailed, thorough, and comprehensive review and recommendation for acceptance by the City of all project deliverables.** The Project Manager will be responsible for the overall review and coordination of the contract documents to ensure preparation of plans that are detailed, thorough, and accurate and meet all the requirements of the City of Ann Arbor. This task requires the services of a professional project manager(s) to ensure uninterrupted progress of the project.

2) Prepare a detailed, topographic survey of the construction influence area.The Consultant shall at a minimum, provide the following items in their proposed scope

of work; locate all trees 6” in diameter or greater and provide the genus and cultivar (if applicable) breakdown; provide a survey with 1’ contour intervals; locate all “breaklines” and other features as necessary to develop accurate contours; provide detailed spot elevations at all existing sidewalk and sidewalk ramp areas; and, provide all survey work to national map accuracy standards; locate all existing property irons and monuments within the survey limits; and, precisely locate all existing public and private utilities. All survey work shall be performed in accordance with the City of Ann Arbor Public Services Area’s Standards and its Geodetic Control Manual.

3) Review the recommended bridge concept as shown in Attachment “A” and critique the cross section and plan. Propose refinements for constructability, cost savings, or other reasons, as necessary.

4) Review the existing piers and evaluate the potential for reuse or replacement.

5) Design live loading for the bridge is anticipated to be H-20, to be confirmed by consultant team and owner during design. The Consultant shall also perform a load rating of the completed bridge structure design prior to bidding the project.

6) Perform a complete and detailed geotechnical evaluation and analysis to determine the properties of the existing soils throughout the construction influence area for the purposes of evaluating sub-structure and roadway design needs.

7) Gather and review information pertaining to existing public and private utilities and determine the precise location, both horizontally and vertically, of any existing utilities.

8) All drawings shall be prepared to City of Ann Arbor Public Services Area Drafting Standards. The City of Ann Arbor shall be provided with one complete set of plans in their native format and portable document format (.pdf) when they are completed on a “flash drive” of sufficient capacity. The Consultant shall also provide native and .pdf copies of all supporting documentation, including, but not limited to; contract documents; project specifications; load rating calculations; cost estimates; and the like.

9) Provide geometric designs for the approach paths in accordance with all AASHTO and City of Ann Arbor Standards.

10) Design accessibility improvements to existing parking lot in Bandemer Park. See concept plan in Attachment H.

11) Prepare complete, detailed, and accurate traffic control plans to construct the project including detour routes as needed for both motorized and non-motorized traffic.

12) Prepare visual aids and attend at least three meetings to coordinate the design of the project with the Park Advisory Commission and/or City Council and other formal and informal committees as needed.

13) Prepare complete, detailed, and accurate construction plans and specifications meeting the requirements of the City of Ann Arbor Public Services Area in order to satisfactorily complete the project.

14) Provide the design of retaining walls, railings, barriers, and guardrails, as necessary, to construct the planned bridge and trail alignments.

15) Coordinate all elements of the design with all affected parties, including, but not limited to; various City Service Areas and Units, private utility companies, other formal and informal committees, and the public in general. Additional formal community engagement is not anticipated at this time.

16) Provide permitting support by coordinating with permitting agencies and departments, and preparing permit application materials. If required, provide floodplain and hydraulic analysis as needed for bridge design.

17) Coordination with grant agencies and preparation of materials needed for grant compliance and approvals.

18) Coordinate with the City of Ann Arbor Public Art Commission to review opportunities to incorporate public art into the bridge design project. Coordinate with selected artists and/or artisans.

19) Schedule and chair design progress meetings to be held on a bi-monthly basis. This is to include a design kick-off meeting in which all affected parties to the design will be contacted and invited to attend. Prepare and distribute meeting minutes for all progress and coordination meetings.

20) Prepare complete, thorough, detailed, and accurate contract documents including plans, specifications, bid forms, etc. to allow the project to be advertised and bid through the City of Ann Arbor's Procurement Unit.

21) Prepare an engineer's estimate of probable costs at 15%, 50%, 75%, and 100% project milestones to ensure budget compliance.

22) Provide bidding assistance including assistance developing Construction RFP or ITB, leading a pre-proposal or pre-bid meeting, responding to offeror questions and providing revisions and addenda as needed, reviewing contractor proposals, developing a detailed bid tab, and participating in the contractor selection process.

23) Construction engineering and inspections are not included in this contract. They are anticipated to be contracted separately.

SECTION III - MINIMUM INFORMATION REQUIRED

PROPOSAL FORMAT

Offerors should organize Proposals into the following Sections:

A. Professional Qualifications
B. Past Involvement with Similar Projects
C. Proposed Work Plan
D. Fee Proposal (include in a separate sealed envelope clearly marked “Fee Proposal”)
E. Authorized Negotiator
F. Attachments

The following describes the elements that should be included in each of the proposal sections and the weighted point system that will be used for evaluation of the proposals.

A. Professional Qualifications – 20 points

1. State the full name and address of your organization and, if applicable, the branch office or other subsidiary element that will perform, or assist in performing, the work hereunder. Indicate whether it operates as an individual, partnership, or corporation. If as a corporation, include whether it is licensed to operate in the State of Michigan.

2. Include the name of executive and professional personnel by skill and qualification that will be employed in the work. Show where these personnel will be physically located during the time they are engaged in the work. Indicate which of these individuals you consider key to the successful completion of the project. Identify only individuals who will do the work on this project by name and title. Resumes and qualifications are required for all proposed project personnel, including all subcontractors. Qualifications and capabilities of any subcontractors must also be included.

3. State history of the firm, in terms of length of existence, types of services provided, etc. Identify the technical details that make the firm uniquely qualified for this work.

B. Past involvement with Similar Projects – 30 points

The written proposal must include a list of specific experience in the project area and indicate proven ability in implementing similar projects for the firm **and** the individuals to be involved in the project. A complete list of client references must be provided for similar projects recently completed. The list shall include the firm/agency name, address, telephone number, project title, and contact person.

C. Proposed Work Plan – 30 points

Provide a detailed and comprehensive description of how the offeror intends to provide the services requested in this RFP. This description shall include, but not be limited to: how the project(s) will be managed and scheduled, how and when data and materials will be delivered to the City, communication and coordination, the working relationship between the offeror and City staff, and the company's general philosophy in regards to providing the requested services.

Offerors shall be evaluated on the clarity, thoroughness, and content of their responses to the above items.

D. Fee Proposal - 20 points

Fee schedules should be submitted in a separate, sealed, envelope as part of the proposal. Fee quotations are to include the names, title, hourly rates, overhead factors, and any other relevant details. The proposal should highlight key staff and positions that would likely be involved with projects. Offerors shall be capable of justifying the details of the fee proposal relative to personnel costs, overhead, how the overhead rate is derived, material and time.

E. Authorized Negotiator

Include the name, phone number, and e-mail address of persons(s) in your organization authorized to negotiate the agreement with the City

F. Attachments

Legal Status of Offeror, Conflict of Interest Form, Living Wage Compliance Form, and the Non-Discrimination Form should be returned with the proposal. These elements should be included as attachments to the proposal submission.

PROPOSAL EVALUATION

1. The selection committee will evaluate each proposal by the above-described criteria and point system (A through C) to select a short-list of firms for further consideration. The City reserves the right to reject any proposal that it determines to be unresponsive and deficient in any of the information requested for evaluation. A proposal with all the requested information does not guarantee the proposing firm to be a candidate for an interview. The committee may contact references to verify material submitted by the offerors.

2. The committee then will schedule interviews with the selected firms if necessary. The selected firms will be given the opportunity to discuss in more detail their qualifications, past experience, proposed work plan and fee proposal.

3. The interview must include the project team members expected to complete a majority of work on the project, but no more than six members total. The interview shall consist of a presentation of up to thirty minutes (or the length provided by the committee) by the offeror, including the person who will be the project manager on this contract, followed by approximately thirty minutes of questions and answers. Audiovisual aids may be used during the oral interviews. The committee may record the oral interviews.

4. The firms interviewed will then be re-evaluated by the above criteria (A through D), and adjustments to scoring will be made as appropriate. After evaluation of the proposals, further negotiation with the selected firm may be pursued leading to the award of a contract by City Council, if suitable proposals are received.

The City reserves the right to waive the interview process and evaluate the offerors based on their proposals and fee schedules alone and open fee schedules before or prior to interviews.

The City will determine whether the final scope of the project to be negotiated will be entirely as described in this RFP, a portion of the scope, or a revised scope.

Work to be done under this contract is generally described through the detailed specifications and must be completed fully in accordance with the contract documents.

Any proposal that does not conform fully to these instructions may be rejected.

PREPARATION OF PROPOSALS

Proposals should have no plastic bindings but will not be rejected as non-responsive for being bound. Staples or binder clips are acceptable. Proposals should be printed double sided on recycled paper. Proposals should not be more than 30 sheets (60 sides), not including required attachments and resumes.

Each person signing the proposal certifies that they are a person in the offeror's firm/organization responsible for the decisions regarding the fees being offered in the Proposal and has not and will not participate in any action contrary to the terms of this provision.

ADDENDA

If it becomes necessary to revise any part of the RFP, notice of the addendum will be posted to Michigan Inter-governmental Trade Network (MITN) www.mitn.info and/or the City of Ann Arbor web site www.A2gov.org for all parties to download.

Each offeror must acknowledge in its proposal all addenda it has received. The failure of an offeror to receive or acknowledge receipt of any addenda shall not relieve the offeror

of the responsibility for complying with the terms thereof. The City will not be bound by oral responses to inquiries or written responses other than official written addenda.

SECTION IV - ATTACHMENTS

Attachment A – South Barton Bridge Alternative Analysis Report

Attachment B - Legal Status of Offeror

Attachment C – Non-Discrimination Ordinance Declaration of Compliance Form

Attachment D – Living Wage Declaration of Compliance Form

Attachment E – Vendor Conflict of Interest Disclosure Form

Attachment F – Non-Discrimination Ordinance Poster

Attachment G – Living Wage Ordinance Poster

Attachment H – Bandemer Park Parking Lot Concept

ATTACHMENT A
SOUTH BARTON BRIDGE ALTERNATIVES ANALYSIS

CITY OF ANN ARBOR

South Barton Bridge Alternative Analysis

January 2026

OHM Advancing Communities®

Contents

1. Executive Summary 1
   1.1. Objective 1
   1.2. Background 1
   1.3. Design Constraints and Alternatives 2
   1.4. Schedule 4
   1.5. Funding 4
   1.6. Summary 5
2. Project Overview 6
   2.1. Purpose 6
   2.2. Site Context 7
   2.3. Existing Conditions 7
   2.4. Barton/Bandemer Park Pedestrian Tunnel Project 8
   2.5. Project Goals 8
3. Design and Constructability Criteria 10
   3.1. Constructability Constraints 10
   3.2. Bridge Design Alternatives 11
      3.2.1. Prefabricated Steel Bridge 11
      3.2.2. Steel Beam Bridge 12
   3.3. Steel Finish 14
      3.3.1. Weathering Steel 14
      3.3.2. Painted Steel 15
   3.4. Decking Material 16
   3.5. Additional Design Features 19
   3.6. Reuse of Existing Bridge Pier 23
   3.7. Bridge Aesthetics 23
4. Bridge Alternatives 25
   4.1. Evaluated Alternatives 25
   4.2. Two-Span Continuous Steel Beam Bridge with optional Observation Platform 25
   4.3. Single Span Prefabricated Truss Bridge 27
   4.4. Recommended Bridge Design 28

5. Permitting 30
5.1. Permitting Requirements 30
5.1.1. City of Ann Arbor Soil Erosion Control 30
5.1.2. City of Ann Arbor Right-of-Way 30
5.1.3. EGLE Joint Permit 30
5.1.4. MDNR and USFWS Freshwater Mussel Survey and Relocation 30
5.2. Environmental Assessments 30
6. Construction Feasibility and Sequencing 32
6.1. Crane Access 32
6.2. Temporary Bridge Construction 32
6.3. Topography and Environmental Impact 32
6.4. Scheduling 33
7. Funding 34
7.1. Grant Opportunities 34
7.2. Private Funding 35
7.3. Public Funding 35
Appendix 36
Appendix A – 2024 & 2025 Bridge Inspection Reports
Appendix B – Conceptual Bridge Drawings
Appendix C – Cost Estimates
Appendix D – Existing Bridge Drawings

1. Executive Summary

1.1. Objective

The City of Ann Arbor (City) Parks and Recreation Unit engaged OHM Advisors (OHM) to conduct an analysis for the replacement of the South Barton Bridge, an existing 304-foot-long pedestrian crossing over the Huron River located within Barton Nature Area. The bridge, built in 1991, is a three-span weathering steel truss structure with a wood deck. It is now in poor condition, exhibiting heavy section loss (areas of reduced steel thickness or full perforations) within the bridge's essential load-carrying support structure.

Figure 1 – Existing South Barton Bridge

This bridge is the longest pedestrian bridge in the City, and replacing it has become even more important now that the Barton-Bandemer Pedestrian Tunnel is open and bringing many more pedestrians and bicyclists to the area. With the tunnel open, the bridge now forms a key link within Washtenaw County's Border-to-Border (B2B) Trail network, and the larger Michigan Iron Belle Trail.

1.2. Background

The existing South Barton Bridge was evaluated by the City's bridge inspection consultant in late 2018, which did not uncover major structural issues at that time. Based on the 2018 inspection, minor repairs were made to the bridge in 2020. At that time, the City was advised that the bridge would need reconstruction approximately 15 years after completion of the minor repairs, and only one section of the bridge would need to be replaced rather than the entire structure.

In late 2024, routine maintenance by City staff to replace deck boards uncovered additional concerns about the bridge's current structural condition. The bridge was inspected with portions of the decking removed, and the City's bridge inspection consultant identified multiple high-priority recommendations for repair or replacement of the bridge. Given the extent of the structural steel deterioration, the 2024 inspection report indicated that these issues should be addressed within two years, with re-inspection of the bridge every 12 months. Michael Baker provided budgetary estimates for replacement options including a superstructure replacement (upper portion) that was estimated at $2.6 million, and a complete structure replacement that was projected to cost $4.38 million.

Beyond the structural concerns, the bridge also falls short of current bicycle and pedestrian design standards. Specifically, its 8-foot clear width is not adequate to comply with the American Association of State Highway and Transportation Officials (AASHTO) recommended 14-foot clear width for bicycle facilities. Furthermore, the structure is unable to support access for both essential emergency and maintenance vehicles to the Barton Peninsula, which is isolated by the Huron River and Amtrak Railroad. Together, these deficiencies underscore the need for replacement to ensure safety, functionality, and compliance with modern infrastructure standards.

1.3. Design Constraints and Alternatives

The replacement of the South Barton Bridge faces considerable constructability challenges, with the most notable being that large construction equipment cannot access the north side of the river because the adjacent railroad corridor blocks direct access. Given the current 300-foot bridge span, temporary measures will be necessary to support access and construction on the north side of the river. Based on discussions with bridge contractors, a temporary construction bridge is proposed to be constructed on the east side of the existing bridge to provide crane access into the river from the south. Figure 2 below depicts the proposed South Barton Bridge location and the associated access constraints to the Barton Nature Area created by the Huron River and MDOT/Amtrak railroad corridor.

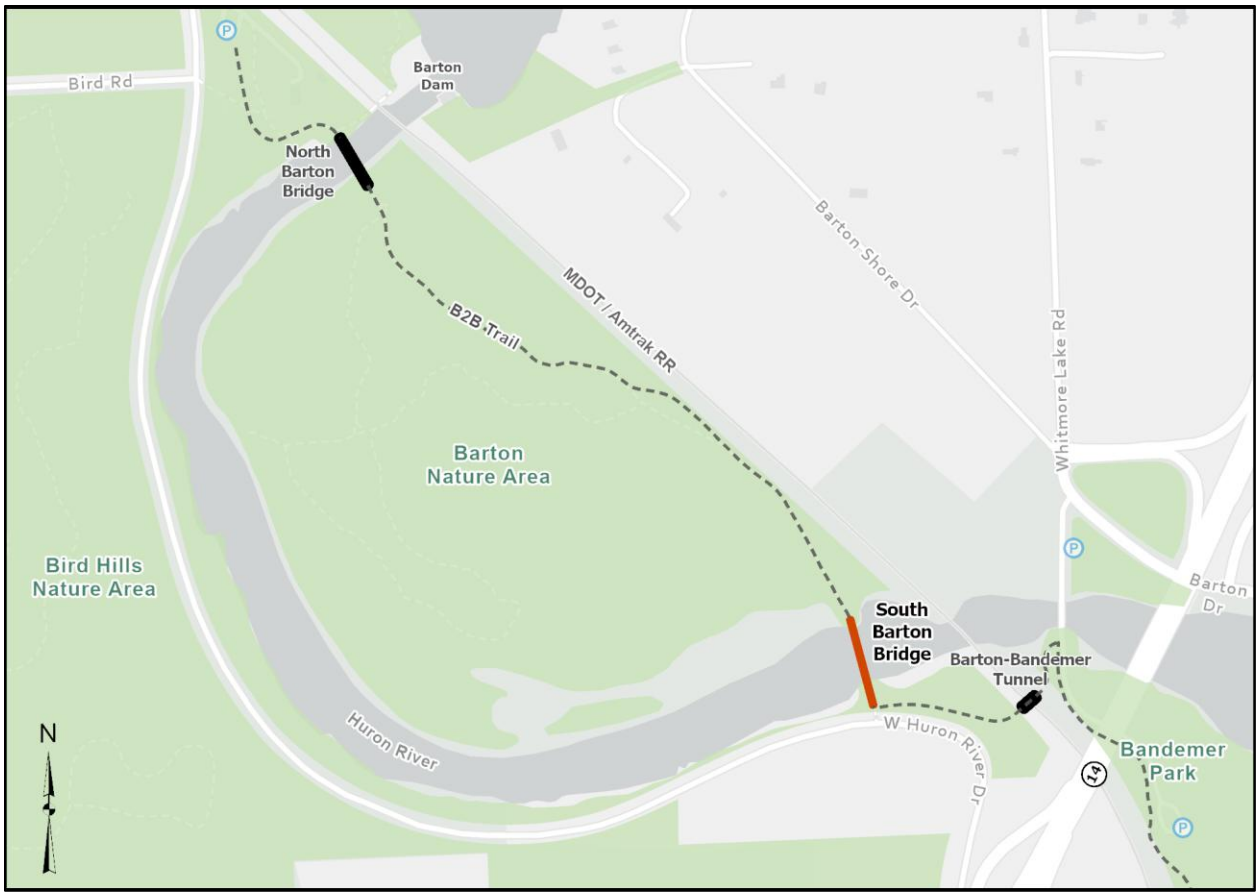


Figure 2 – Barton Nature Area Key Map

The site's slopes and location along a critical river also require careful environmental protection measures to prevent erosion and preserve natural features. Specific permitting efforts to address environmental concerns will include obtaining a Michigan Department of Environment, Great Lakes, and Energy (EGLE) Joint Permit and performing a survey to review the potential presence of state and/or federally listed freshwater mussel species within the project area in coordination with the Michigan Department of Natural Resources (MDNR) and U.S. Fish & Wildlife Service (USFWS).

Based on the project constraints, the project team evaluated two primary bridge alternatives: a single-span 14-foot wide prefabricated truss bridge and a 14-foot wide two-span continuous steel beam bridge with a concrete deck. The prefabricated option has a slightly faster construction timeline of approximately 4 months and could eliminate the middle pier in the Huron River, which is a benefit for environmental reasons and river use for activities like kayaking and sculling. However, this option has significant long-term drawbacks, including a higher inspection burden for its numerous connection points and more difficult, costly repairs to its complex truss members. It also does not allow for an observation platform over the water where community members could enjoy river views without being in the path of trail traffic, a feature the City requested based on its success in other community bridge projects. The total estimated budgetary cost for a single-span prefabricated truss bridge is $4.3 million.

The recommended option is the two-span continuous steel beam bridge with a poured-in-place concrete deck. While this design has a longer construction timeline of approximately five months, and a slightly higher estimated cost of $4.9 million, it offers greater long-term benefits for the City. The concrete deck and steel beams are more durable and require less frequent maintenance, and the simpler steel design, with fewer complex connections, makes ongoing monitoring and repairs easier, helping reduce overall lifecycle costs. This two-span structure also allows for the incorporation of a 6-foot by 20-foot observation platform at the middle pier, providing a valuable public space for enjoying river views. A rendering of the recommended two-span steel beam bridge is located below in Figure 3.

Figure 3 – Two-Span Steel Beam Bridge with Observation Platform

1.4. Schedule

Based on the critical issues identified within the Michael Baker bridge inspection, it is recommended that replacement of the bridge be prioritized within the next two years. Considering the heavy summer season use of the B2B trail network, an accelerated construction schedule would aim to begin in the fall of 2027 to avoid the high-use summer season. The bridge work would continue over the winter and be completed in the late spring of 2028. Maintaining this timeline will require the City to begin the design process in early 2026 and confirm available funding sources. The City should conduct annual inspections on the existing bridge until it is able to be replaced.

1.5. Funding

Given the high cost associated with this project, several potential funding sources were identified including federal programs like the Transportation Alternatives Program (TAP), state programs including the Michigan

Natural Resources Trust Fund, and local partnerships with the Huron Waterloo Pathways Initiative (HWPI) or the Washtenaw County Parks & Recreation Commission (WCPARC). The City could also use internal funding mechanisms such as the Parks Millage, General Funds, or issuing bonds.

1.6. Summary

The existing South Barton Bridge is in poor condition and is not compliant with modern standards for a key pedestrian and cycling link within the greater regional trail network. Recent bridge inspections determined that considerable capital investments are required immediately and failure to act could result in the closure of this key connection of the Border-to-Border trail, undermining the multi-million-dollar investment in the new Barton-Bandemer Tunnel.

The recommended alternative to pursue for detailed design and construction is a two-span steel beam structure with an integrated observation platform located along the bridge over the Huron River.

The proposed project will require a significant capital investment of an estimated $4.9 million, but creates the opportunity to improve and integrate the bridge with the recent transformative projects within Barton Nature area and Bandemer Park. A rendering of the recommended bridge alternative is depicted below in Figure 4.

The City should aim to have the replacement of the bridge complete by early 2028. To maintain this aggressive schedule, bridge design must commence in 2026 with the goal to issue bidding documents in 2027. Construction would be slated to begin in the fall of 2027.

Figure 4 – Two-Span Steel Beam Bridge with Observation Platform

2. Project Overview

2.1. Purpose

The City of Ann Arbor (City) Parks and Recreation Unit (Parks) has engaged with OHM Advisors (OHM) to conduct an alternative analysis for the South Barton Bridge, an existing pedestrian bridge over the Huron River within the 98-acre Barton Nature Area. The location of the existing bridge is shown in Figure 5. The proposed project aims to address future repair and replacement needs for the bridge, while considering access and safety for all users, including emergency vehicles, maintenance equipment, pedestrians, bicyclists, and individuals with disabilities.

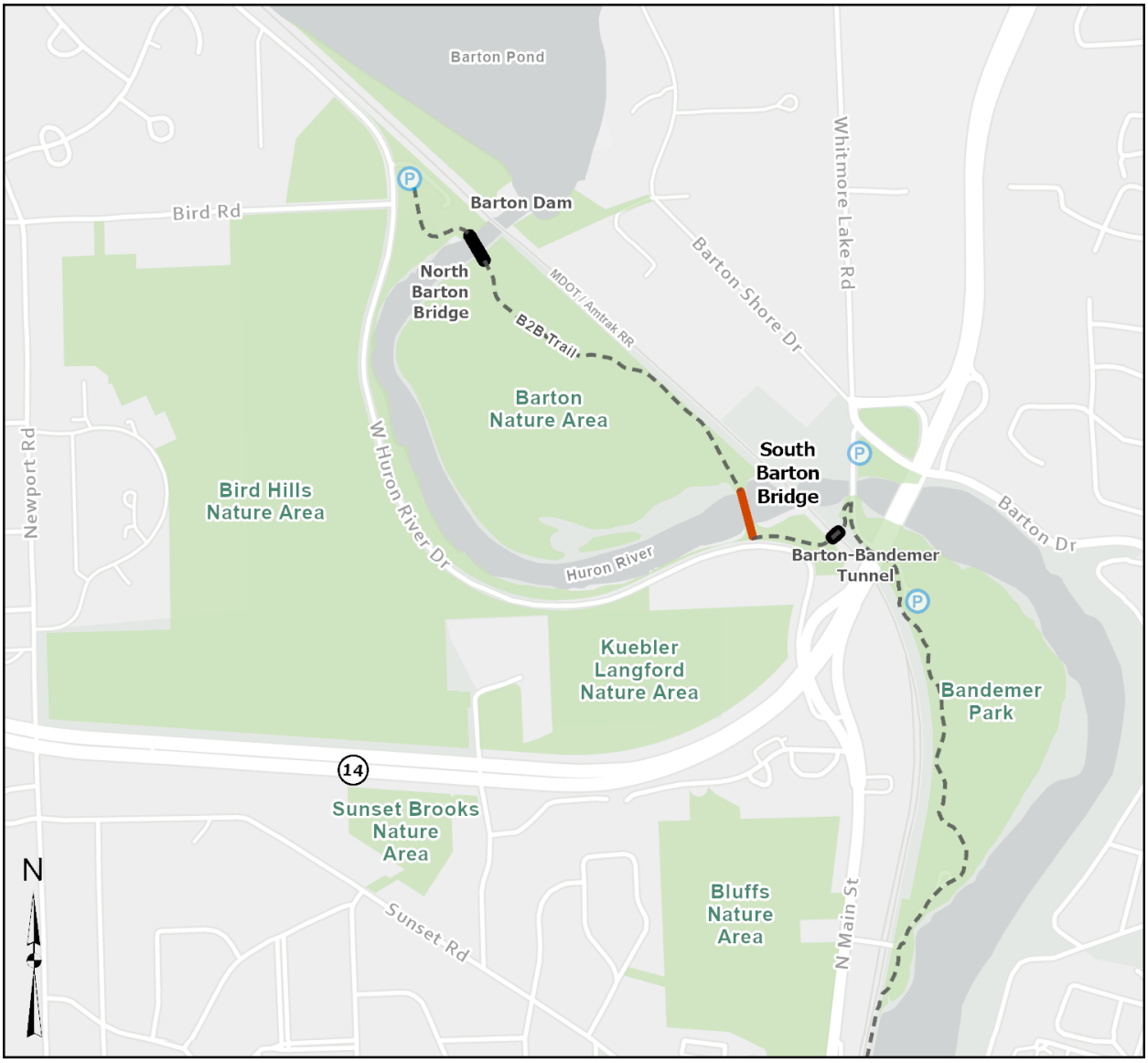


Figure 5 – Overall Location Map

The analysis also considers the recently completed construction of the Barton-Bandemer Pedestrian Tunnel approximately 500 feet east of the bridge location. The $4.8M tunnel extends beneath the Michigan Department of Transportation (MDOT) and Amtrak railroad tracks. The new tunnel is located between the Barton Nature Area and Bandemer Park and provides a non-motorized connection to the Border-to-Border Trail (B2B), which is a part of the Michigan Iron Belle trail. Additionally, in 2024, the City and Washtenaw County Park & Recreation Commission constructed a new 10-foot wide concrete trail from the South Barton Bridge to the Barton Park parking lot.

The recent completion of these two projects is anticipated to result in a considerable increase in pedestrian and cycling traffic over the South Barton Bridge due to its new link to the B2B trail and surrounding recreational opportunities.

The South Barton Bridge was evaluated by the City's bridge inspection consultant in late 2018, which did not uncover major structural issues and minor repairs were made in 2020. The City was advised that the bridge would need reconstruction an estimated 15 or more years from the minor repairs, and it was believed that only a small section of the bridge would need to be replaced rather than the entire structure. However, in late 2024 during work by City maintenance staff to replace portions of the bridge decking, the structure was found to be in poor condition. A subsequent bridge inspection in late 2024, located in Appendix A, conducted by Michael Baker International, found multiple high priority recommendations for bridge repair. Given the considerable repair recommendations, Michael Baker's repair cost estimates were provided solely for complete structure replacement and superstructure replacement. These construction cost estimates totaled $4.38 million and $2.6 million, respectively.

2.2. Site Context

The existing South Barton Bridge is located within the City's Barton Nature Area, which is a 98-acre natural area managed by Parks and Recreation along the Huron River in Ann Arbor. The Barton Nature Area is a peninsula with no vehicular access since it is bounded by the Huron River and the Amtrak / MDOT Railroad to the northeast. The Barton Dam is located on the Huron River to the north of the area. Pedestrian access to the site is provided by northern and southern bridges over the Huron River. The Barton Nature Area is a popular location for hiking, biking, and fishing.

2.3. Existing Conditions

The existing pedestrian bridge is a three-span weathering steel truss prefabricated bridge with wood decking which was built around 1991. The bridge features steel handrails and hollow steel sections, with an 8-foot clear width between handrails. The bridge rests on concrete abutments and wall piers which appear to have been installed for the current bridge. The City completed an inspection of the bridge in late 2024 and found the structure to be in poor condition. The following are issues presented by the existing structure:

- The existing steel stringers are in poor condition with heavy section loss.
- The existing bridge pier is exhibiting concrete spall and delamination. Also, its current width impacts its suitability for reuse with a wider bridge without significant modifications.

- The structure does not provide the current standard minimum clear width of 14-feet per the American Association of State Highway and Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities.
- The structure does not provide access to the Barton Nature Area for emergency vehicles.
- The south approach to the bridge needs regrading or paving to prevent dirt from being eroded and deposited on the structure.

2.4. Barton/Bandemer Park Pedestrian Tunnel Project

The Border-to-Border Trail (B2B Trail) is a paved, non-motorized, ADA-accessible pathway over 42 miles in length. The Ann Arbor Corridor previously extended approximately 5.6 miles in length from Gallup Park to the edge of the MDOT railroad east of the Barton Nature Area Trail.

With the ongoing Barton/Bandemer Park Pedestrian Tunnel Project, which is slated for completion in Fall 2025, a pathway connecting the B2B trail to the Barton Nature Area Trail will be created with the new pedestrian tunnel under the MDOT railroad. This will connect the 0.6 mile of the B2B Trail in the Barton Nature Area to the existing B2B Trail network in Bandemer Park. The existing South Barton Bridge forms part of this segment of the B2B Trail in Barton Nature Area and is anticipated to see considerably higher usage following the completion of the tunnel.

2.5. Project Goals

As part of the project, the City and WCPARC identified the following key project goals for the potential replacement of the existing bridge.

- Trail & Standards
    - Border to Border Trail (B2B): Must meet AASHTO standards with 14-foot clear width.
    - Handrails: Match the Gallup Park Bridge style with mesh inset, per B2B standard.
- Accessibility & Safety
    - Ensure safe and accessible transitions at both ends, especially at the parking lot.
    - Maintain clear sight lines above handrails, especially westward views.
    - Reduce bridge deflection; current structure has excessive movement.
- Vehicle Access & Maintenance
    - Bridge should ideally support vehicle access to Barton Peninsula for controlled burns, snow plowing (¾ ton truck with plow) and tree maintenance (1-ton dump truck with 300-gallon tank).
    - Concrete deck is preferred for durability and vehicle load support.
- User Experience & Placemaking
    - Include overlooks for pause/viewing areas, similar to the Gallup Park Bridge.
    - Design should feel park-like, pedestrian-scaled, and fit into the natural environment.
    - Incorporate aesthetic elements:
        - Stone veneer
        - Entrance columns
        - Continuity with tunnel design

Structural Options

- Evaluate bridge deck materials including:
  - Concrete (preferred)
  - Wood planks
- Consider feasibility of a concrete or steel beam bridge.

- Special Use Considerations
  - Confirm clearance requirements for rowing team under bridge.

3. Design and Constructability Criteria

3.1. Constructability Constraints

As shown previously in Figure 5, the existing South Barton Bridge crosses the Huron River in a location that is particularly constrained for site and equipment access. The primary constraint for constructability is the inability to access the north end of the bridge with large equipment. The Barton Nature Area forms a peninsula surrounded by the Huron River, which is bordered on the north by the MDOT/Amtrak Railroad corridor. Prior attempts to arrange for equipment crossings of this railroad corridor have been unsuccessful, and it is not anticipated that clearance would be granted for this project. This limits equipment access to the 6,000 pound rated load limit at the existing North Barton Bridge.

Additionally, as shown below in Figure 6, the south end of the existing bridge is located approximately 45 feet from the edge of pavement for West Huron River Drive. All project staging must be located within the area between the Huron River and West Huron River Drive, while minimizing disturbance of the new concrete trail that was recently completed within this existing corridor.

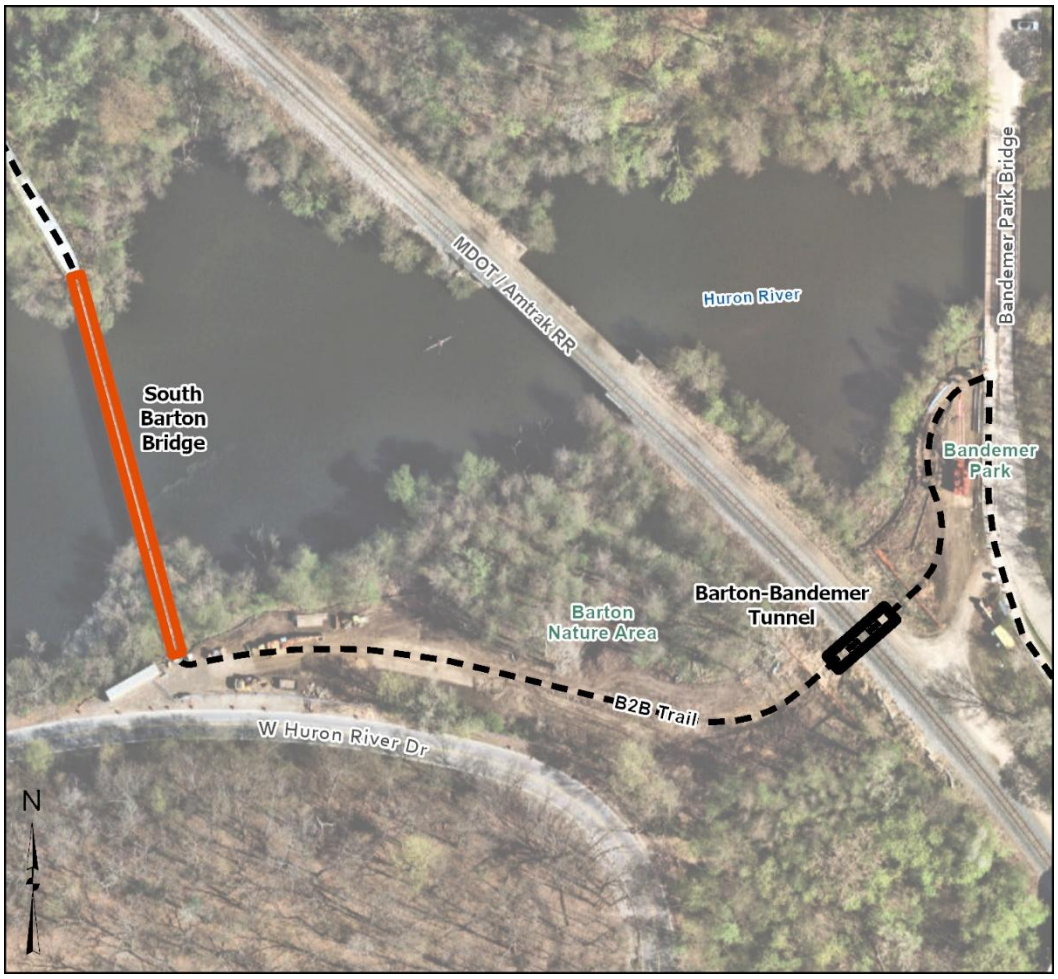


Figure 6 – South Barton Bridge Detailed Location Map

3.2. Bridge Design Alternatives

Based on the project goals and constructability constraints of the existing site, OHM primarily evaluated two bridge alternatives. These included a prefabricated truss bridge, similar to the existing bridge, and a more conventional steel beam bridge constructed on-site.

3.2.1. Prefabricated Steel Bridge

Prefabricated pedestrian bridges are manufactured off-site in controlled environments and then transported to the installation location for final placement. These bridges are commonly used in settings where quick installation and minimal disruption are priorities. They are available in various configurations, including truss, beam, and arch styles, and generally made from weathering steel, or painted/galvanized steel.

One of the main advantages of prefabricated truss bridges is their rapid installation. Since the bridge is built off-site, it can be delivered in large sections or as a complete unit, significantly reducing on-site construction time and minimizing disruption to pedestrian flow. Additionally, the controlled fabrication environment ensures high-quality welds, finishes, and structural integrity.

However, these bridges do come with challenges. Transporting large truss bridge sections can be challenging, and the lifting requirements for a constrained site can increase logistical complexity. This option would require additional lane closures on Huron River Drive and additional costs. Also, while prefabrication offers efficiency, it typically limits customization options. Site-specific constraints such as terrain, access, and foundation conditions must be carefully considered during the planning stage to ensure compatibility with the selected prefabricated structure.

A prefabricated truss bridge can be more difficult to maintain over the long term due to its inherent design. Prefabricated bridges are a complex system of interconnected components, including numerous members, joints, and fasteners. This intricate design means that every connection point is a potential area for issues like corrosion, fatigue, and loose bolts. Regular, in-depth inspections are necessary to check each of these many points, potentially making the maintenance process more labor-intensive and time-consuming.

Furthermore, a prefabricated truss bridge's rigid, custom design can complicate major repairs or modifications. If a specific truss member needs to be replaced or repaired, it may require specialized knowledge and equipment, which can be more difficult to source than for a standard steel beam. While prefabrication ensures high quality at the factory, any problems with the on-site connections where the large sections are joined can be particularly challenging to fix. This lack of flexibility for future alterations or repairs adds to the long-term maintenance complexity and cost.

An example of a prefabricated bridge is the 175-foot pedestrian bridge installed for Broadway Park West as shown in Figure 7 and Figure 10.

Figure 7 – Broadway Park West Prefabricated Bridge

3.2.2.Steel Beam Bridge

A constructed-in-place steel beam pedestrian bridge is built directly at the project site using steel beams as the primary structural elements. This method is often chosen for shorter spans or when site access and logistics make prefabrication and transport of large components impractical. The construction process involves assembling the bridge piece-by-piece, allowing for greater flexibility in adapting to site-specific conditions such as terrain or existing infrastructure.

One of the key advantages of this approach is its high degree of customization. The design and construction methods can more easily accommodate challenges and site conditions. Additionally, transporting smaller steel components to the site is generally easier and less costly than moving large, prefabricated sections, especially in urban or constrained environments.

However, constructed-in-place bridges typically require longer construction timelines and more on-site labor. Weather conditions can impact progress, and the need for longer-term staging can increase disruption to the surrounding area. Labor costs may also be higher due to the need for skilled workers to perform bridge construction on-site. Despite these challenges, this method remains a practical and adaptable solution for many pedestrian bridge projects, especially when customization and site integration are priorities.

A constructed-in-place steel beam bridge is generally easier to maintain long-term due to its simpler, more robust design. Unlike the intricate network of members and connections in a truss bridge, a steel beam bridge consists of large, solid beams. This simplicity means there are far fewer components to inspect and maintain, reducing the potential points of failure from issues like corrosion, fatigue, and loose fasteners. The smooth surfaces of the beams also make it easier to clean and apply protective coatings, streamlining routine maintenance tasks.

If a beam is damaged, its repair is a more direct and standardized process. The high degree of customization inherent in on-site construction also means the design can be optimized for accessibility and maintenance from the outset. Overall, the structural simplicity and conventional repair methods of a steel beam bridge contribute to a more manageable and less costly long-term maintenance program.

The City's Gallup Park Bridge is a concrete beam bridge; however, it is similar to steel beam bridges in how it was constructed on-site. Concrete beam bridges are cost-effective and simple to construct for shorter distances, but are not ideal for longer spans. Steel beam bridges are more suitable for longer distances, as required for the South Barton Bridge. The Gallup Park concrete beam bridge is shown below in Figure 8.

Figure 8 – Gallup Park Concrete Beam Bridge

3.3. Steel Finish

The selection of steel finishes, specifically between weathering and painted steel, is critical to the project's long-term success, as it directly impacts the bridge's durability, maintenance costs, and aesthetic appearance in the specific environmental context of the site.

If a prefabricated bridge is selected, either weathering or painted steel would be viable options for the bridge construction. However, if the more conventional steel beam option is selected, typically painted steel would be used for the beams.

3.3.1. Weathering Steel

Weathering steels are designed for use in environments where the steels will be exposed to wet and dry weather cycles. The cycles of wetting and drying the steel result in the formation of a protective patina, a film on the surface of the metal produced by oxidation over a long period of time. The presence of constant ponding water on the surface of the steels can prevent the formation of the protective patina, and result in corrosion and deterioration of the steels.

It is important that weathering steels are not used in locations and environments not suitable for the material. Weathering steels should not be used in areas where the steels may be exposed to salt contamination or where there is frequent high rainfall, high humidity, or persistent fog. Sufficient clearance between the bridge and the body of water prevents spray and condensation on the steel for prolonged periods. It is important that structures using weathering steels have proper design details to avoid trapping moisture, dirt, or debris to avoid oxidation of the structure.

There are several advantages to using weathering steels in areas that allow for the formation of the rust patina. Weathering steels may result in short and long-term cost savings and minimal maintenance as the protective patina reduces the need for painting the surface of the structure. The reduction in painting also results in reduced environmental contamination such as emissions of volatile organic compounds (VOCs) from oil paints and reduced sand blast cleaning debris. The weathering of the steel eventually results in a deep russet hue which can be aesthetically pleasing and blends in with the natural landscape.

The City Parks Unit has predominantly installed weathering steel pedestrian bridges over the past 30 years, however, locations such as both ends of the existing South Barton Bridge have seen significant deterioration earlier than anticipated at the time of design.

The North Barton Bridge, as shown in Figure 9 on the following page, is an example of a weathering steel bridge.

Figure 9 – North Barton Weathering Steel Bridge

3.3.2. Painted Steel

Painted steels are suitable for environments where weathering steels would not meet all conditions required to form a protective patina. Environments where the structure would not experience washing of the surface with rainwater and cycles of wetting and drying or where the steels would encounter salt or other corrosive pollutants would result in corrosion of weathering steel structures. The paint acts as a barrier to protect the steel from the corrosive elements in the environment.

Painted steel typically uses a three-coat paint system. New structures will have all scale, dirt, grease, or other foreign material removed before a zinc-rich primer is applied. The primed surface of the structure will then be cleaned prior to applying the epoxy intermediate coat, and the surface of the intermediate coat will be cleaned prior to applying the urethane topcoat. A minimum cure time of 24 hours is necessary between applications of the paint coats in the field. The paint coat can be damaged by impacts or vandalism and touch-up painting is commonly required. Full repainting of painted steel structures will occasionally be necessary, and the timing of when a full repainting is needed depends on the environment.

Painted steel has corrosion protection, and the color of the paint can be selected. The initial painting of the structure and subsequent repainting are necessary to maintain a long service life. While the initial

investment is higher, well-maintained beams result in a longer service life than a weathering steel truss alternative thus lowering the lifecycle cost burden of the crossing.

The Broadway Park West bridge is a painted steel bridge that was painted black. The Broadway Park West bridge is shown in Figure 7 and Figure 10.

Figure 10 – Broadway Park Painted Steel Bridge

3.4. Decking Material

3.4.1. Wooden Decking

A wood deck offers a natural aesthetic that blends well with park environments and is often favored for its visual appeal in pedestrian bridge settings. Its lighter weight can reduce structural demands and simplify installation, making it a cost-effective option for projects with limited budgets or access constraints. Additionally, individual planks can be replaced relatively easily, which can be beneficial for localized damage or wear.

However, wood decking comes with notable drawbacks, especially in a cold weather climate. It is vulnerable to moisture, rot, and insect damage, and requires regular maintenance such as sealing and staining to preserve its integrity and appearance. Freeze-thaw cycles, snow accumulation, leaf/debris accumulation, humidity, and consistent shade can accelerate deterioration, leading to warping or

splintering. Wood also has limited load-bearing capacity depending on the stringer spacing, which may restrict vehicle access for maintenance tasks like snow plowing or emergency vehicles. Its lifespan is shorter than concrete. The inspection burden of each individual plank is more labor intensive than concrete and individual planks regularly exhibit a highly variable rate of decay between individual members.

Overall, while wood decking may suit low-impact, scenic pedestrian bridges, it may not be ideal for high-use or multi-functional structures requiring durability, minimal maintenance, and potential for heavier maintenance vehicle use.

The Gallup Park (pedestrian walkways) and North Barton bridges have wooden decking, as can be seen in Figure 11 below and Figure 12 on the following page.

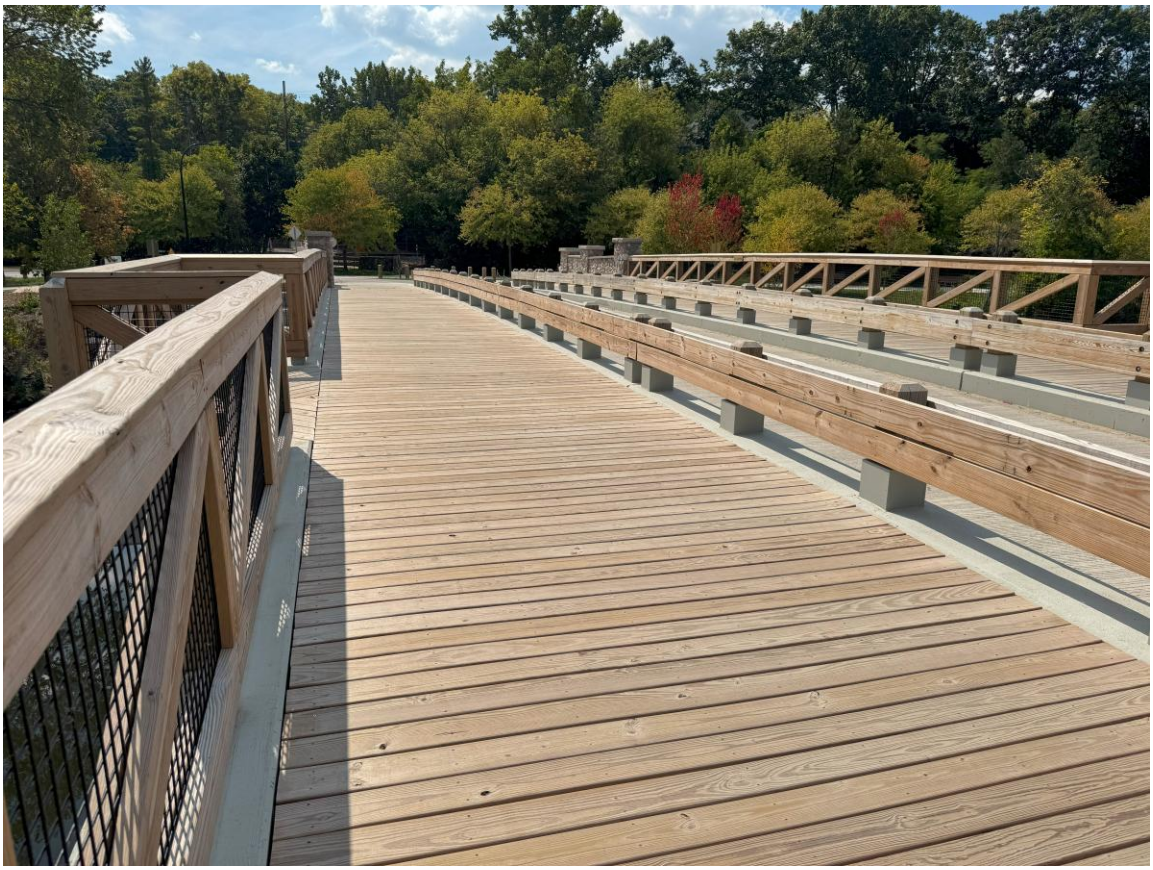


Figure 11 - Gallup Park Bridge Wooden Decking

Figure 12 - North Barton Bridge Wooden Decking

3.4.2.Concrete Decking

A concrete deck offers a durable and low-maintenance solution for pedestrian bridges, particularly in a cold weather climate with freeze-thaw cycles and snowfall. Its structural integrity supports not only pedestrian and bicycle traffic but also light maintenance vehicles such as snowplows and utility trucks, making it ideal for bridges that require year-round access. Concrete is resistant to rot, insect damage, and minor scrapes from snow removal equipment. Additionally, its smooth surface enhances accessibility for all users, including those with mobility devices, and simplifies snow removal operations.

While concrete decks tend to have a higher initial cost and require a more robust substructure due to their weight, they offer a longer lifespan with less frequent preventative maintenance or replacement. Aesthetic concerns can be addressed through design elements such as stone veneer, textured finishes, colored concrete mixes, and architectural features that help the bridge blend into its natural surroundings. Overall, concrete is a preferred option for projects prioritizing longevity, load capacity, and reduced regular maintenance. Concrete decking is also consistent with the B2B trail materials on either end of the existing South Barton Bridge, allowing for a seamless transition to the new bridge.

The Argo Park bridge shown in Figure 13 on the following page is a weathering steel bridge with concrete decking.

Figure 13 - Argo Park Bridge Concrete Decking

3.5. Additional Design Features

Several additional design features were considered for incorporation into the project based on discussion with City staff. These include the installation of an overlook within the middle of the bridge for views to the west, boardwalk transition sections on either end of the bridge to reduce overall bridge spans, and a viewpoint location at the south end of the bridge.

3.5.1. Bridge Overlook

To take advantage of the exceptional scenic river views to the west, the City requested the potential addition of an overlook or observation platform near the middle of the proposed bridge. OHM has considered the installation of a 6-foot by 20-foot extension built off the west side of the bridge, situated at the central pier. It would be a dedicated space, separate from the main pedestrian pathway, allowing people to stop and gather without obstructing through-traffic. The platform's surface would be made of the same materials as the bridge deck, likely concrete, ensuring structural and aesthetic continuity. It would be equipped with a low, sturdy railing that provides safety while maintaining clear, open views of the Huron River.

The bridge overlook would provide a dedicated space for the community to enjoy an exceptional view along the Huron River. It transforms the bridge from a utilitarian transportation connection into a

place and destination in and of itself, which invites the public to pause, rest, and engage with the natural environment. It provides a strategic location for pedestrians to pause, rest, and engage with the natural environment. From this central point, visitors could observe wildlife, watch river activities like kayaking and sculling, or simply enjoy the scenic beauty of the river. A rendering of the bridge overlook is shown in Figure 14.

The approximate cost to incorporate an overlook into a steel beam bridge is $79,000. Conceptual cost estimates with the overlook incorporated can be found in Appendix C.

Figure 14 – Bridge Overlook Rendering

3.5.2. Boardwalk Transition Sections

To address the transition from the bridge abutments to the existing pathways, boardwalks are being considered for both the north and south ends of the bridge. These boardwalks will serve to reduce the overall required bridge spans while creating smooth and functional connections for pedestrians. These would be precast concrete boardwalk sections to match the existing pathway aesthetic.

At the southern end, the boardwalk will be curved to better match the existing pathway alignment. This alignment will improve the flow of pedestrian traffic and increase the potential useable space for parking off West Huron River Drive. Renderings for what the boardwalk would look like can be seen in Figure 15 and Figure 16 on the following page.

The approximate cost for the precast concrete boardwalk approach is $425,000. The precast concrete boardwalk provides costs savings by negating the need for a more costly extension of the proposed bridge or additional retaining walls to allow an at-grade bridge approach. It also allows for a curved alignment to match the existing border-to-border trail without encroaching on the Huron River Drive right-of-way. Conceptual cost estimates with the precast boardwalk incorporated can be found in Appendix C.

Figure 15 – Curved Boardwalk Rendering from Bridge

Figure 16 –Curved Boardwalk Rendering Overview

3.5.3.Southern Overlook Plaza

In lieu of installing a boardwalk section to transition into the existing pathway at the southern end of the bridge, an at-grade transition could be considered with the addition of a viewpoint overlooking the Huron River. This area is envisioned as a "landing spot" for pedestrians, providing a place to pause, relax, and appreciate the Huron River. The element should blend into the existing pace and include benches for seating, plantings, and picnic tables. The design would focus on creating an inviting

environment that enhances the user experience and encourages people to linger. The potential location of this viewpoint area at the southern end of the proposed bridge is shown below in Figure 17.

Figure 17 – Southern Overlook Plaza Rendering

Construction of the plaza at the south end of the proposed bridge would require placement of sheeting or a large retaining wall. A conceptual layout of the viewpoint and associated retaining wall is depicted in Figure 18.

The approximate cost for the southern overlook plaza as depicted in the renderings is $534,000. Conceptual cost estimates with the southern viewpoint incorporated can be found in Appendix C.

Figure 18 – Southern Overlook Plaza and Retaining Wall Looking South

3.6. Reuse of Existing Bridge Pier

OHM reviewed the original design plans for the single pier located near the north third point of the existing bridge crossing. While the pier was designed to accommodate the current pathway width and loading, our preliminary analysis indicates it is over capacity under the proposed bridge alternatives that were evaluated. Furthermore, the latest bridge inspection report observed concrete deterioration at the waterline.

Reusing the structure would require concrete patching and, at a minimum, replacement of the top geometry. To achieve the necessary structural capacity, an additional pile would likely be required, necessitating the removal and reconstruction of the pier's concrete portion regardless. Given these factors, it is unlikely that salvaging the pier will yield significant cost savings. Replacing the structure allows the City to optimize the pier's location to provide more clearance for personal watercraft. Therefore, OHM recommends that the City budget for full replacement of the existing pier, but this should be confirmed during final bridge design.

3.7. Bridge Aesthetics

The goal of the proposed bridge will be to integrate the structure into the natural, park-like setting of the Barton Nature Area and coordinate the project with the adjacent Barton/Bandemer Tunnel Project. The design will prioritize a high-quality, durable feel that enhances, rather than dominates, the natural environment. The goal is to create a pedestrian-scale experience that feels organic and fits with the existing landscape.

To achieve this, several aesthetic and functional elements should be considered. Field stone veneer on entrance columns, would provide a strong, naturalistic visual anchor that complements the local geology and gives the

bridge a sense of permanence. The adjacent tunnel similarly has a field stone veneer on the wing walls. A precedent image from the City's Gallup Park Bridge project is shown below in Figure 19.

Figure 19 – Gallup Park Entrance Column and Railing

The railings, a critical component, are a strong candidate for a wood and wire mesh design. This style would match the B2B Trail's standards and be similar in look to the City's Gallup Bridge, and the wire mesh maintains clear sight lines to the Huron River for children. The proposed railing for consideration on this project is also shown in Figure 19.

4. Bridge Alternatives

4.1. Evaluated Alternatives

Based on input from the City and the overall project goals, two primary alternatives for the proposed bridge were evaluated by the project team. These included a two-span continuous steel beam bridge and a single span prefabricated truss bridge. Additional alternatives that were considered by the project team included the following:

- Multi-Span Prefabricated Bridge
- Concrete Beam Bridge
- Cable-Stayed Bridge

These alternatives were generally eliminated due to overall constructability and/or cost constraints.

4.2. Two-Span Continuous Steel Beam Bridge with optional Observation Platform

The first primary alternative is a two-span steel beam bridge with a concrete deck. The layout for this proposed alternative is shown in Drawing 1 of Appendix B. It includes the construction of a middle pier approximately 10 feet north of the existing pier location. A 130-foot span would be located to the south of the pier and a 100-foot span would be located on the north side. A cross section of the proposed bridge is shown below in Figure 20, and depicts the proposed three W36 wide-flange steel beams. This would be topped with a poured-in-place concrete deck with customizable railings on each side.

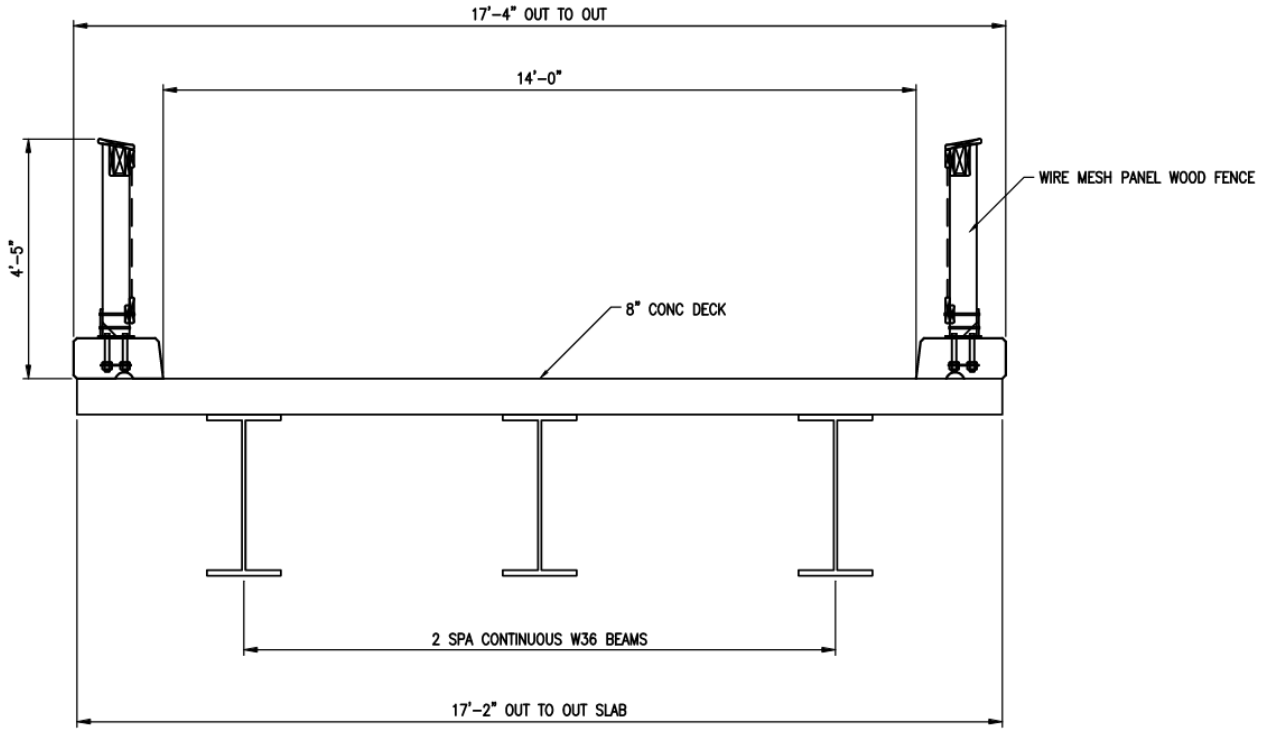


Figure 20 – Deck Section of a Two-Span Continuous Steel Beam Bridge

The southern transition to the existing pathway would be constructed with a concrete boardwalk or at-grade approach section. An approach section would not be required at the north end of the bridge as the abutment would be located in a similar location to the existing bridge abutment.

The two-span steel beam bridge with concrete deck option offers the most flexibility for the lifespan of this crossing. Benefits include customizable railing type, flexibility around the pier area to include an observation platform over the water, a narrower profile appearance and potentially longer service life of the beams and deck.

The two-span structure also creates the opportunity to build an optional observation platform directly over the river at the proposed pier. This feature would add a valuable public amenity that is not feasible with the single-span truss bridge. Furthermore, the bridge has a narrower, more streamlined profile and allows for customizable railing types, offering greater aesthetic flexibility to match the surrounding environment. A rendering of a two-span structure with an observation platform over the river is shown below in Figure 21.

Figure 21 – Rendering of Two-Span Steel Beam Bridge with Observation Platform

From a practical and logistical standpoint, the steel beam bridge is easier to manage in the long run. The nature of the structure, with fewer intricate connection points than a truss design, simplifies monitoring and repair work, which is a key factor in keeping long-term maintenance costs down. While this option requires less frequent preventative maintenance, required maintenance is usually considered contract work rather than internal crew performed routine maintenance.

The few drawbacks of this bridge design are the potentially slightly longer (one additional month) construction time and potentially increased construction costs. Given the considerable constraints associated with this site, some of the constructability concerns are negated relative to other bridge alternatives.

This option will require more time to construct than a prefabricated option by an estimated 3-5 weeks. The total length of construction is estimated to be 17-23 weeks.

The estimated budgetary price for construction of a two-span continuous steel beam bridge is $4,955,000. This includes the addition of a 6' x 20' observation platform at the middle pier and a precast concrete boardwalk approach to the southern end of the bridge. Removal of the middle observation platform results in a total project savings of approximately $79,000. The precast concrete boardwalk on the southern end of the bridge represents the most cost-effective bridge connection to the existing trail.

4.3. Single Span Prefabricated Truss Bridge

The second alternative evaluated is a single-span prefabricated bridge with a concrete deck. The layout for this proposed alternative is shown in Drawing 2 of Appendix B. This alternative would eliminate the middle pier within the Huron River with a single 200-foot span. A pier would be constructed on the north edge of the river with a 30-foot-long concrete boardwalk approach section. A cross section of the proposed prefabricated bridge is shown below in Figure 22. As depicted, the outside truss members of the prefabricated bridge can be lowered relative to the bridge surface to improve pedestrian visibility from the bridge.

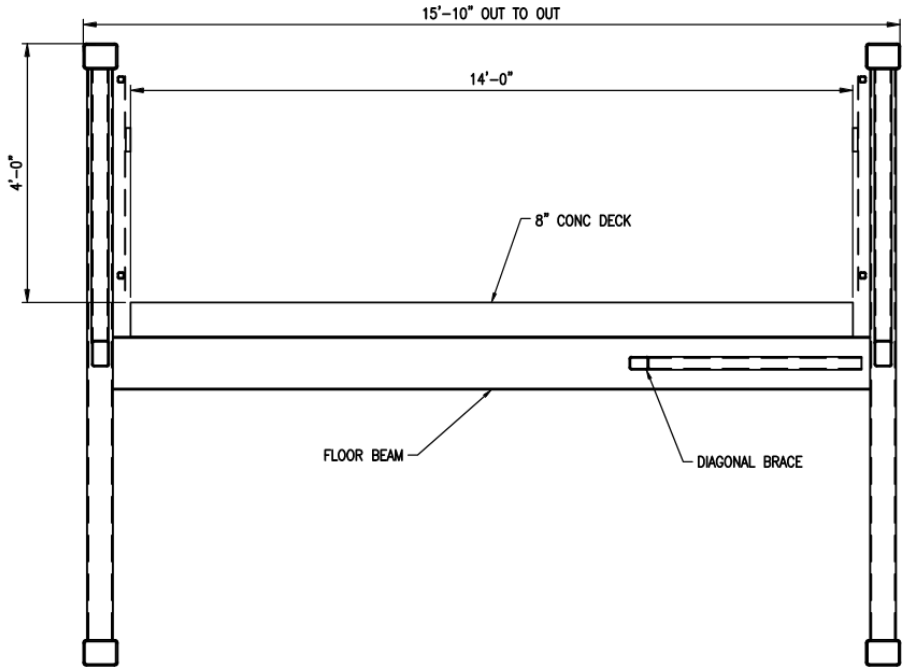


Figure 22 – Deck Section of Prefabricated Truss Bridge

The prefabricated bridge can be installed with multiple surface materials. These include timber decking, poured-in-place concrete decking, and fiberglass decking. OHM is recommending that the bridge be topped with a poured-in-place concrete deck instead of timber decking for longevity. A concrete deck alternative extends the construction time by an estimated 2 weeks relative to a timber deck.

The main benefit of this bridge design is slightly faster construction duration. The bridge is built off-site in controlled conditions, then transported to the location for assembly. The total estimate construction duration for the prefabricated bridge is 14-18 weeks. Another significant benefit is that it can eliminate the need for a central pier in the water, which moves the primary support closer to the north bank of the river. This could be beneficial for environmental reasons and for maintaining a clear waterway. Specifically, this section of the river is routinely used for kayaking and sculling, so provided a large clear width will enhance river use.

This option comes with notable disadvantages related to long-term maintenance and repairs. The truss structure itself, with its numerous connection points, requires a higher inspection burden. Engineers must regularly monitor these connections for signs of stress, fatigue, or corrosion. Major repairs to the main truss members are also described as being more difficult and involved, which could be costly and complex over the bridge's lifespan. Finally, the design does not allow for a feasible observation platform over the water, which limits the potential for placemaking opportunities that benefit the community and add to the enjoyment of the river.

The estimated budgetary price for construction of a single-span prefabricated truss bridge is $4,293,000. This cost remains close to the cost of a steel span bridge due to the considerable constructability challenges associated with either option. The cost of the single-span prefabricated truss bridge does not include an observation platform as it is unable to accommodate this amenity.

4.4. Recommended Bridge Design

The recommended option to pursue during detailed design is the traditional bridge build of steel beam and concrete deck. While the upfront investment of time and money is slightly higher than the prefabricated option, the overall flexibility of design features, lifecycle maintenance cost, and ease of repairs long-term are more favorable to the City's needs for this crossing.

This option is designed for a potentially longer service life for both the beams and the concrete deck. The concrete surface requires less frequent preventative maintenance, which, over the bridge's lifespan, translates to lower lifecycle costs and fewer disruptions. The steel beam bridge has fewer intricate connection points than the truss bridge, which simplifies long-term monitoring and repair work. This is a crucial factor in keeping future maintenance costs down and ensures that any necessary work will be less complex and involved.

The two-span steel beam design allows for the addition of a valuable community feature: a 6' x 20' observation platform at the middle pier. This flexibility, along with customizable railings and a narrower profile, allows the bridge to be a more integrated and aesthetically pleasing part of the Barton Nature Area.

The alternative single-span prefabricated truss bridge was eliminated primarily due to its long-term drawbacks. While it offers a quicker construction timeframe and potentially lower initial cost, these benefits are outweighed by the long-term disadvantages. The truss design has a higher inspection burden due to its numerous connection points, and major repairs are more difficult and costly.

The total budgetary conceptual cost estimate for the recommended bridge design is $4,955,000 as shown below in

Table 1. This cost includes the overlook platform, aesthetic treatments as shown, and integration with the newly constructed pathway along West Huron River Drive.

Table 1 – Recommended Bridge Design and Construction Costs

Item	Cost
Mobilization	$275,000
Bridge Removal and Structural	$1,238,000
Two-Span Continuous Steel Beam Bridge	$1,644,000
Integral Middle Overlook Platform	$79,000
Precast Concrete Boardwalk Approach*	$303,000
Bridge Construction Subtotal	**$3,539,000**
Construction Contingency (15%)	$531,000
Preliminary and Construction Engineering (25%)	$885,000
Total Conceptual Budget Cost	**$4,955,000**

*Optional southern overlook plaza in lieu of boardwalk increases total cost by $110,000.

5. Permitting

5.1. Permitting Requirements

The following permits are anticipated to be required and should be reviewed during detailed design.

This list is based on the assumption that no Federal funding sources will be used for this project. Utilizing Federal funding may result in additional permitting and/or clearance requirements prior to project construction.

5.1.1. City of Ann Arbor Soil Erosion Control

A City Soil Erosion Permit must be applied for by the Contractor prior to the start of construction. Design documents should include all necessary soil erosion control requirements.

5.1.2. City of Ann Arbor Right-of-Way

For work and staging within the Huron River Drive rights-of-way, a City of Ann Arbor Right-of-Way Permit will be required and should be applied for. This permit is typically only issued at the time of construction, but impacts to the right-of-way should be coordinated and reviewed the City Engineering Unit prior to bidding the project.

5.1.3. EGLE Joint Permit

Michigan Department of Environment, Great Lakes, and Energy (EGLE) Joint Permit under provisions Part 31 and Part 301 of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. If wetlands are determined to be impacted by the project, Part 303 shall also apply and a Wetland Permit will additionally be required from the City of Ann Arbor prior to application with EGLE.

5.1.4. MDNR and USFWS Freshwater Mussel Survey and Relocation

The potential presence of state and/or federally listed mussel species will require coordination with the MDNR and U.S. Fish & Wildlife Service (USFWS). A federal permit will be required to survey for federally listed species.

5.2. Environmental Assessments

In Michigan, mussel survey requirements for bridge projects impacting rivers are governed by the MDNR, EGLE, and the U.S. Fish & Wildlife Service (USFWS). This project should follow the River Protocol outlined by the State to document the potential presence or absence of state or federally-listed mussel species that may be affected by the construction.

The segment of the Huron River between Barton Dam and Argo Dam is considered a reservoir by MDNR and mussel survey plans should be provided to MDNR and/or USFWS for review in advance of the survey. MDNR and/or USFWS staff shall be notified at least 15 days prior to the time the actual survey will occur. In addition, MDNR shall be given at least 30 days to review final survey results prior to the anticipated start of the

construction activities. Activities conducted in larger rivers must have received written concurrence from the USFWS prior to conducting any project activities including, surveys, relocations, and/ or construction activities.

Mussel relocation efforts will typically be required when state or federally threatened or endangered mussel species are found at the project site and impact avoidance options have been exhausted. Relocation is also recommended for non-listed mussel species that may be negatively affected by the proposed construction activities. No mussels are to be moved without prior authorization from MDNR and/or USFWS for federally listed mussels.

Based on bridge construction starting Fall 2026, it is assumed that the mussel survey and potential relocation will be scheduled for June and July 2026 when advanced bridge designs are complete.

6. Construction Feasibility and Sequencing

Given the unique construction constraints of the proposed South Barton Bridge, OHM, the City and WCPARC met onsite with a local contractor to review constructability constraints, project sequencing, and recommendations for bridge construction. The following is a summary of major construction feasibility issues and potential project sequencing.

6.1. Crane Access

Only the southern side of the existing South Barton Bridge is accessible for construction equipment. During the original construction of this bridge, a temporary stone mat was installed to approximately the mid-point of the river to facilitate lifting the bridge into place. Modern EGLE requirements would likely prohibit the construction of similar temporary fill now. The weight requirements of all potential bridge options will require crane access out over the river.

The limitation of having crane access available only from the south side of the river poses a logistical challenge for the bridge construction. This means that all heavy lifting, including the demolition of the existing bridge and the installation of new components for the proposed two-span structure, must be managed from a single direction. Instead of having two cranes work simultaneously from both banks of the river, the contractor must rely potentially on a single, strategically placed crane to complete each phase of the project. This may require more precise lift planning, the use of specialized lifting equipment, and a more deliberate, sequential workflow.

6.2. Temporary Bridge Construction

Given the access and lifting distance constraints, it is recommended that a temporary bridge be constructed to provide essential access for heavy equipment, such as cranes, into the river. This structure would be built immediately adjacent to the existing bridge, likely on the east side.

The construction of this temporary bridge would involve creating a stable, load-bearing platform over the water. It would be comprised of steel pipe piles driven into the riverbed, with steel beams placed on top to support the deck. This deck is often made of timber mats, which provide a solid, flat surface for the cranes to operate on. This method is preferred over using barges, as it provides a more stable working platform and can avoid the need for environmentally disruptive dredging.

The purpose of this temporary structure is to allow cranes to be positioned close enough to the existing bridge to facilitate its demolition and to install the new bridge components. Once the main construction and installation work is complete, the temporary bridge would be disassembled and removed. This strategy is a crucial part of the project's logistics, ensuring that construction can proceed efficiently and safely while minimizing environmental impact on the river. The temporary works will also need to be permitted in conjunction with the main bridge construction.

6.3. Topography and Environmental Impact

The steep slopes leading down to the river on both sides of the crossing pose a challenge for equipment access and risk for erosion and sediment runoff into the Huron River. Construction activities including constructing temporary access will impact these slopes considerably. To mitigate this, contractors need to implement erosion

and sediment control measures, such as silt fencing, erosion control blankets, and sediment traps. Temporary and permanent stabilization of the slopes after construction, potentially using native vegetation, will be required to prevent long-term degradation.

The presence of mature trees near the construction site adds another layer of complexity. Design drawings would need to establish clear tree protection zones to prevent damage to root systems and canopies from heavy equipment. This could involve fencing off areas and using specialized materials to create temporary pathways that do not compact the soil around the roots. The project team needs to carefully balance the need for construction access with the preservation of existing trees, especially those that contribute to the aesthetic value of the area. The overall goal would be to minimize tree removal and to protect the long-term health of the surrounding canopy. Any necessary tree removal would likely be followed by a replanting plan to restore the green character of the area after construction is complete.

6.4. Scheduling

Based on the critical issues identified within the most recent bridge inspection, it is recommended that replacement of the bridge be prioritized within the next two years. It is recommended that bridge construction occur outside of the summer season to minimize overall impacts to the B2B Trail, which recently reopened with the completion of the Barton/Bandemer Tunnel Project.

A proposed timeline for offseason construction starting in the Fall of 2027 is shown below in Table 2, which avoids the high-use summer season. The work would primary occur over the colder season, with limited productivity during the middle of winter, and then be completed by late Spring 2028. Maintaining this aggressive timeline will require the City to confirm available funding sources and meet intermediate deadlines. Until the bridge is replaced, the City should ensure the existing bridge is inspected annually as recommended in the most recent bridge inspection report.

Table 2 – Proposed 2028 Construction Schedule

Task	Deadline
Commence Project Design	May, 2026
30% Design Complete	July, 2026
Mussell Survey	July, 2026
60% Design Complete	October, 2026
90% Design Complete	February, 2027
Bidding	April, 2027
City Council Approval	June, 2027
Begin Construction	October, 2027
Construction Complete	May, 2028

7. Funding

Given the considerable cost of the proposed bridge, the City requested evaluation of potential funding sources for the proposed bridge. There are several potential funding opportunities for a pedestrian bridge project, at the federal, state, and local levels. The project's location along the B2B Trail and Iron Belle Trail makes it a potential candidate for a variety of grants.

7.1. Grant Opportunities

A grant from the Ralph C. Wilson, Jr. Foundation is a potential funding source since Ann Arbor is located in the foundation's designated Southeast Michigan region. The foundation's mission includes funding projects that improve the quality of life in its target regions. A pedestrian bridge project aligns their core area of active lifestyles, and their investments in this area aim to connect people and communities to each other, to nature, and to recreation. The South Barton Bridge fits within this focus, as it enhances walkability, bikeability, and outdoor recreational activities within the region. The open period for the primary grants has closed, although this project could be considered an extension of the ongoing Barton/Bandemer tunnel project. However, they also offer grants for up to $400,000 for the maintenance of developed trails and greenways, and the replacement effort may be considered as a maintenance activity.

Additionally, WCPARC has a Connecting Communities grant program specifically for non-motorized trail projects, which could be a strong match for this project. Connecting Communities is a competitive grant program that provides supplemental funding for the development// of non-motorized trails or similar projects. The program is open to all municipalities and public entities in Washtenaw County and can provide up to $600,000 in funding for planning and construction projects.

The Michigan Natural Resources Trust Fund (MNRTF) Development Grant is a competitive funding source specifically designed to support the creation or rehabilitation of public outdoor recreation facilities, making it a candidate for the replacement of the South Barton Bridge. Since the MNRTF prioritizes projects that enhance public access to natural features and expand trail connectivity, a bridge project scores well if it links existing park systems, provides safe passage over a waterway for non-motorized users, or creates new recreation opportunities. For a successful bridge replacement application, the Michigan Department of Natural Resources (DNR) looks for projects that integrate Universal Design to ensure the crossing is accessible to all users, regardless of ability. Since the bridge replacement forms a vital link in a regional trail network, the City can apply for up to $300,000 in grant funding to offset a portion of construction costs. The grant requires a minimum 25% local funding match.

Finally, the Transportation Alternatives Program (TAP) is a strong potential funding source for a pedestrian bridge project in the City. The grant is a competitive federal program, but for projects in Southeast Michigan, it is administered by the Southeast Michigan Council of Governments (SEMCOG). TAP is specifically designed to fund "alternative transportation" projects that enhance the intermodal transportation system and provide safe options for pedestrians and bicyclists. Pedestrian bridges, shared-use paths, and other non-motorized infrastructure are explicitly listed as eligible projects. A TAP grant requires a minimum 20% local cash match of the eligible project cost and projects that offer a higher local match may be more competitive.

7.2. Private Funding

The Huron Waterloo Pathways Initiative (HWPI) is one of the most relevant and promising local sources of potential funding for this project. HWPI's mission is to "facilitate the development and promote enjoyment of regional trails connecting people, communities, and nature." They are a 501(c)(3) nonprofit that focuses on creating non-motorized recreational pathways throughout Washtenaw County and its surrounding communities. The organization's main effort is to build out the B2B Trail, and the South Barton Bridge that improves crossing over the Huron River would be considered a critical component of this network.

Instead of being a grant-giving body that accepts applications in a traditional sense, HWPI primarily operates through a public-private partnership model. They raise funds from private donors and grants and then work directly with public entities like the City and WCPARC to fund and execute projects. Therefore, the approach would be for the City to partner with HWPI to secure a portion of the project funding through HWPI's fundraising efforts.

7.3. Public Funding

The City has access to several traditional funding mechanisms to finance the proposed pedestrian bridge, drawing from its own internal financial resources. These options, which are distinct from external grants and private partnerships, provide the City with direct control over project funding and execution.

First, the city can utilize its Parks Millage funds. The City has a dedicated millage for park maintenance and capital improvements, which provide a consistent revenue stream. These funds are specifically earmarked for projects that enhance the City's park system, including pathways, trails, and boardwalks.

Secondly, the City has the option of issuing bonds. This is a common way for municipalities to finance large-scale capital projects with a long lifespan. By issuing municipal bonds, the City effectively borrows money from investors, which it then pays back with interest over a set period. These bonds are typically backed by the City's full faith and credit, meaning the repayment is secured by its ability to collect property taxes. This method allows the City to undertake a significant project immediately and spread the cost out over many years, so that current and future users of the bridge share the financial burden.

Finally, the City can use its General Funds. This is the primary operating fund for the City, and its revenues can be used for a wide range of municipal services and capital outlays, including Parks and Recreation. While general funds are typically used for day-to-day operations, a portion can be allocated to a one-time capital project like a bridge if the City Council deems it a high-priority investment that serves the community's overall needs.

Given the recent partnership with WCPARC and cost sharing on the Barton/Bandemer Tunnel, the proposed bridge replacement work could also be partially paid directly by WCPARC outside of their Connecting Communities Grant Program.

Appendix

Appendix A – 2024 & 2025 Bridge Inspection Reports

FINAL REPORT
2024 BRIDGE INSPECTION

STRUCTURE:	Barton Nature Area Pedestrian Bridge - South
COUNTY:	Washtenaw
STRUCTURE NUMBER:	BNA-P2

PREPARED FOR:

The City of Ann Arbor

PREPARED BY:

Michael Baker International
Dearborn, MI

Michael Baker
INTERNATIONAL

DATE INSPECTED:	November 7, 2024
DATE PREPARED:	December 13, 2024
INSPECTION TEAM:	Lauren Woods, PE, QTL John Schmitz, ATL

Table of Contents

I. Physical Description of Structure 3

II. Field Inspection and Physical Evaluation 3

Deck and Railings 3

Stringers 4
Steel 4
Timber 4

Steel Trusses, Floor Beams and Lateral Bracing 4

Abutments 5

Piers 5

Approaches 5

III. Bridge Compliance with Current Standards 5

IV. Load Capacity 5

V. Recommendations 6

VI. Summary of Repair Costs 6

Attachments

Appendix A – Photographs
Appendix B – Cost Estimate
Appendix C – Section Loss Measurements

I. Physical Description of Structure

The existing structure carrying the Barton Nature Trail over the Huron River is located in the City of Ann Arbor, Michigan. The structure is located just north of West Huron River Drive and acts as the south trailhead of the Barton Nature Area Trail. The City of Ann Arbor's Barton Nature Area is located just north of the bridge, and the City's Hilltop Nature Area is located at the south end of the bridge (see map at right for location). For the purposes of this report, the north end is considered the Barton Nature Area end of the structure.

The three-span structure was constructed in about 1991 and consists of three (3) weathering steel truss superstructure spans with wood decking. The overall structure length is 304'-10 ½" between the abutment backwalls. The south span (Span #1) crosses the south bank of the river with a span length of 84'-4 ½". Span #2 (center span) crosses the Huron River between two piers and has a span of 110'-3 ¾". The north span (Span #3) crosses the Huron River and the north riverbank and has a span of 110'-2 ¼". The bridge railings consist of one (1) horizontal, 2" diameter, steel handrail and six (6) horizontal, 1 ½" square hollow steel sections (HSS). The clear width between the handrails is 8'-0".

The structure was repaired in 2020. The south end of the bridge that had been buried in sediment was excavated. The steel truss, floor beams, stringers, and lateral bracing were all heavily deteriorated. Steel plates were welded to the bottom chord of the truss to rebuild the section. The first four south bays of stringers and floor beams had completely deteriorated and timber stringers on concrete foundations were added to support the deck below these four bays.

The existing substructure units consist of concrete abutments and concrete wall piers (construction details unknown).

II. Field Inspection and Physical Evaluation

The bridge was inspected on November 7, 2024. The overall condition of the structure is poor.

Deck and Railings

The decking consists of transverse wood planks measuring approximately 2 ½" thick by 11 ¼" wide, with some planks measuring 2 ½" by 8" (nominal 3" thick). Some of the planks have been replaced with 1 ½" thick planks (nominal 2" thick), with a 1" spacer block placed between the top of stringer and the new plank to align the top surface of all planks. The planks are connected to a steel angle connected to the center stringer and to edge angles attached to each of the trusses. Some of these connections have failed or are no longer in place, and a few of the planks deflect when subjected to loads (pedestrians, bikes, etc.). The underside of the timber decking is wet in the end spans.

The top surface of many of the planks shows signs of overall wear and aging, including cracks, checks, splits, and soft areas, which indicate signs of rotting ***(Photos 10 through 16)***. The south end of the south span decking has a ¼" of dirt and debris that has been transported by water from the parking area along Huron River Drive ***(Photos 17 and 18)***. In this area the planks are soft and spongy. Away from this area, the planks are in fair condition. Overall, the deck is in fair condition.

The bridge railings consist of one (1) horizontal, 2" diameter, steel handrail and six (6) horizontal, 1 ½" square hollow steel sections (HSS). Vegetation has started to grow near both ends of the structure on the railings and trusses. Moss and lichen are present in these areas. The railings are in good condition.

Stringers

Steel

The stringers consist of three (3) parallel HSS's measuring 4"x 3". After discussion with the City of Ann Arbor, 15 feet of boards were removed from the north end of the structure. This allowed further hands-on inspection of the stringers to take measurements of section loss on the tops of the members. Overall, the members are in poor condition with heavy section loss ***(Photos 5, 6, and 9)***. The west member showed the most section loss with multiple holes along the top of the stringer. The middle and east members also had significant section loss along the exposed length ***(Photos 7 and 8)***. It is assumed a similar condition is present across the full length of the members for each span. A detailed diagram with measurements of section loss is located in Appendix C. The bottom and sides of the stringers show light to moderate surface corrosion.

In the south span, the steel stringers have completely deteriorated within 20 ft of the south abutment. Beyond that point, the stringers in the south span are heavily corroded and in poor condition with 100% section loss noted along the top of the members ***(Photos 22 through 24)***. At the south end of the south span, the floorbeams have experienced significant section loss ***(Photos 19 through 21)***. The floor beams and stringers in this area are very close to the ground surface below the superstructure. This is due in part to the erosion of material from the parking area at the south end of the structure that has also covered the wood deck planks, as noted above.

Timber

During the 2020 repair project, the first four (4) bays of the steel stringers (from the South Abutment to Floorbeam 4S) were replaced with nominal 4"x6" timber members. These timber stringers are supported by nominal 4"x6" stub columns on 12" diameter concrete footings. The timber stringers are in good condition ***(Photo 27)***.

Steel Trusses, Floor Beams and Lateral Bracing

The trusses consist of various HSS sections for the top and bottom chords, and vertical and diagonal members. The floor beams and lateral bracing below the deck level also consist of HSS sections. Most of these members have light to moderate levels of surface corrosion. There is 100% section loss in the cross member between floor beam 4S and 5S, 2.5"x2" in size ***(Photo 49)***. The splices of the truss members also show light surface corrosion and minor distortion at the north span splice in the east truss. One bolt is missing in the top chord connection in the east truss in the center span ***(Photo 51)***. The lateral bracing below the plank decking, between the trusses and floor beams, is completely missing in the southern-most four (4) bays of the south span ***(Photos 19 through 21)***.

Due to the vegetation growth alongside and on the structure and railings, there is lichen growing on the surface of the truss members near the abutments. The presence of this may cause water to be trapped on the surface of the uncoated members leading to accelerated corrosion.

The truss bearings at both abutments have dirt and debris. Vegetation is growing on the top of the abutments at the truss bearing locations ***(Photos 39 and 40)***.

The truss members overall are in fair condition.

Abutments

The abutments are reinforced concrete of unknown construction. There is soil and leaf debris on top of the beam seat of both abutments ***(Photos 40 through 42)***. The ground surface in front of the abutments is very close to the truss bearing elevation, especially at the south abutment. This configuration may allow dirt and debris to come in direct contact with the truss members. The slope in front of the north abutment shows signs of erosion but appears to be stable ***(Photo 30)***. Both abutments are in good condition.

Piers

The piers are reinforced concrete walls of unknown construction. The piers are in fair condition. There is a large concrete spall at the east end of the Pier 2S at the water line, with exposed rebar ***(Photo 31)***. There is an area approximately 4'x3' that is spalled with exposed rebar with 1'x1' delamination above. There is a hairline crack on the north face of the pier approximately 6 feet in length ***(Photo 43)***. There is 1 square foot of spalling at the waterline on the south face of the pier. There is 1 square foot of honey combing on the north face of Pier 2S ***(Photo 32).*** No deficiencies were noted on Pier 1S.

Approaches

The approach at the north end of structure is concrete, while the approach at the south end is gravel/dirt. At the north approach there is newly installed fencing along both sides of the path. At the south approach, the gravel and dirt from the approach continues onto and covers the end of the deck planking ***(Photos 3 and 17)***. Storm water from Huron River Drive and the parking lot drains onto the south end of the structure.

III. Bridge Compliance with Current Standards

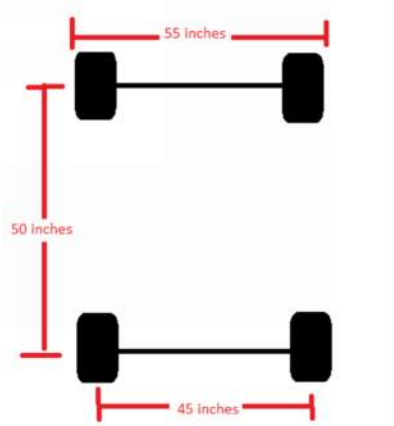
The existing structure is compliant with MDOT and AASHTO standards under LFD methodology.

The existing structure does not meet the current standards for minimum clear width. Per the AASHTO Guide for the Development of Bicycle Facilities, the minimum clear width should be 14 feet.

IV. Load Capacity

The vehicle load limit indicated on the shop drawings and posted on the truss superstructure is 4,000 pounds. The 2022 bridge inspection report indicated the uniform live loading indicated on shop drawings is 85 PSF or 20 PSF plus the vehicle load. The timber stringers that replaced the steel stringers and floor beams in the south span were designed for the 85 PSF live load.

The stringers, floor beams, and decking were load rated in 2020. The condition of the structure has worsened since the last load rating. The deteriorated south end was rehabilitated to account for the section loss in the steel stringers and floorbeams. The north end was evaluated for section loss. The worst case of section loss was evaluated for the load rating analysis of the structure. In the updated load rating analysis, a 3k vehicle load was evaluated using the axle and wheel spacing shown in the schematic below. 80 percent of the 3k weight was placed on the rear axle. The current condition of the structure does not warrant a load posting for the structure. The bridge can adequately support pedestrian load or 3-kip vehicle.



Plan view of 3k vehicle dimensions used in 2024 load capacity analysis (provided by Ann Arbor Parks Department)

V. Recommendations

The inspection of the South Barton Pedestrian Structure found the structure to be in poor condition, with some items in need of repair. Recommendations listed below are prioritized with low, medium, high priority:

- Replace the stringers that have significant section loss on the top flange (High – 2 Years)
- Regrade or pave the south approach so that gravel and dirt are not eroded and deposited on the structure (High – 5 Years)
- Repair concrete spall and delamination damage on Pier 2S (Medium – 5 Years)
- Replace selective deck planks across the entire structure and attach all decking to all stringers and end angles at trusses (Medium - 5 Years)

The Parks staff should regularly remove debris from the top of the abutment walls as well as brush and trees within 15 ft of the structure to keep the structure dry. The recommended repairs will last at least 10-20 years until future maintenance is needed.

The structure should be inspected every 12 months due to the poor condition of the superstructure at the south end of the south span.

VI. Summary of Repair Costs

A breakdown of the cost of the recommended repairs is shown in Appendix B.

A cost estimate was completed for a complete bridge replacement. The estimated cost to fully replace the structure, which includes the demolition and construction of the structure, placing riprap, replacing the approaches, and detouring pedestrians is $4,381,000 in year 2025 dollars including CE and PE costs. The estimate cost to replace the superstructure, which includes substructure patching, placement of riprap, and detour of pedestrians is $2,600,000 in year 2025 dollars including CE and PE costs. Any major work should be scheduled after the parking lot is regraded to drain away from the bridge.

Appendix A – Photographs

Photo 1 – East Elevation (Looking West)

Photo 2 – North End Approach (Looking North)

Photo 3 – South End of Structure (Looking North)

Photo 4 – Boards Removed for Inspection at North End (Looking North)

Photo 5 – Beam 1W Typical Section Loss and Heavy Pitting (Looking South)

Photo 6 – Deficiencies in Steel Member 1W (Looking West)

Photo 7 – Typical Beam 2W (Looking South)

Photo 8 – Typical Beam 3W (Looking South)

Photo 9 – Beam 1W Section Loss with Water in Beam (Looking West)

Photo 10 – Deck Deficiencies in Rotting Wood (Looking South)

Photo 11 – Splintered / Delaminated Wood, 4 Boards (Looking South)

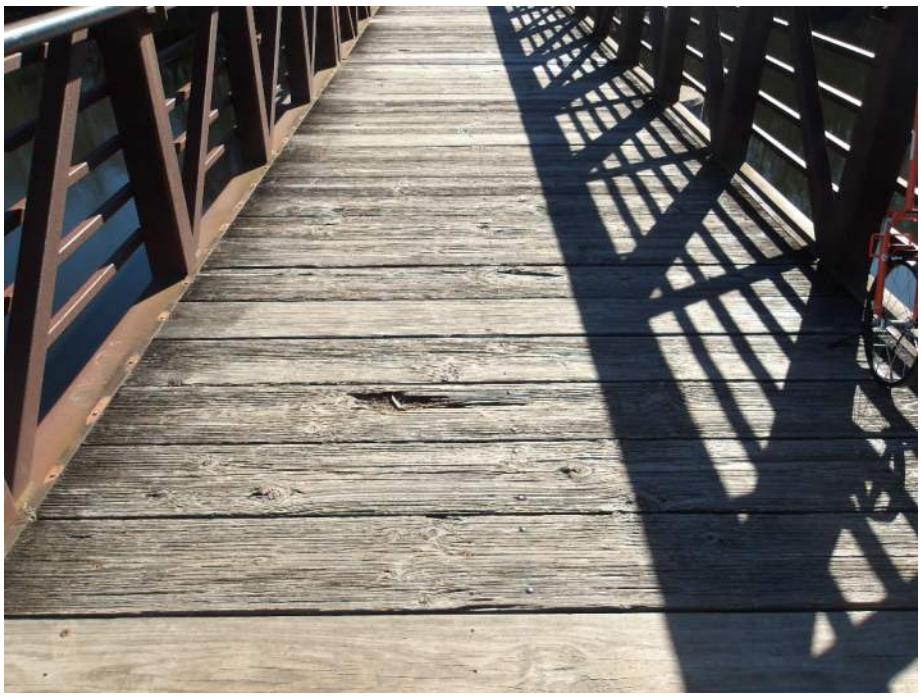


Photo 12 – Deck Deficiencies at Pier 2S (Looking South)

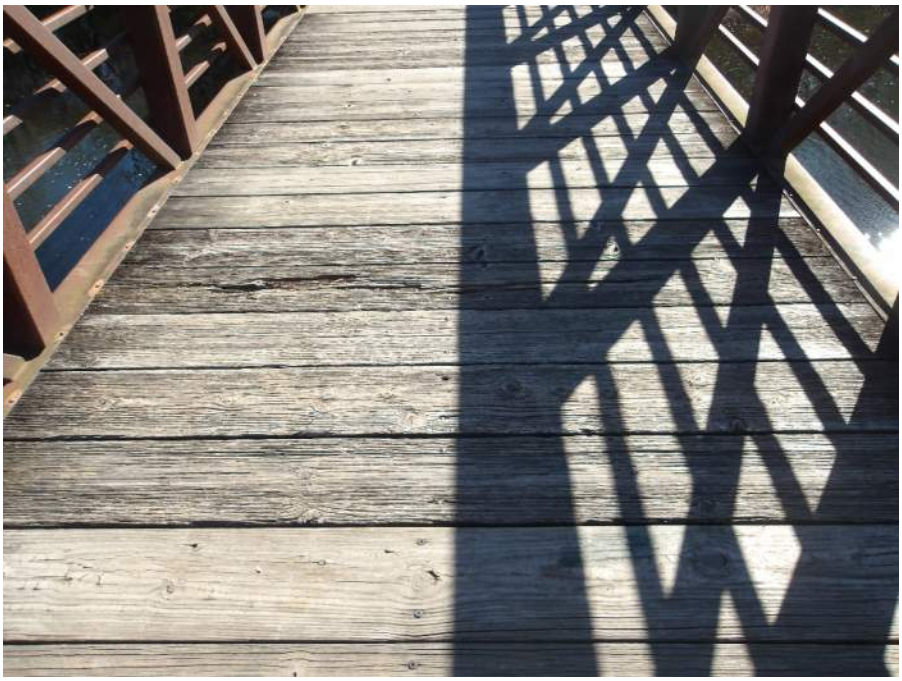


Photo 13 – Splintered / Delaminated Wood, 17 Boards (Looking South)

Photo 14 – Rotted Surface with Growth (Looking South)

Photo 15 – Rotted Surface with Missing Rivets (Looking South)

Photo 16 – Heavy Growth and Rot (Looking South)

Photo 17 – Heavy Debris on Shoulders and Last 10ft of South End. Three Uneven Boards on West Barrier (Looking South)

Photo 18 – ¼” Deep Dirt and Debris (Looking East)

Photo 19 – 100% Section Loss, Floorbeam 1S (Looking Southwest)

Photo 20 – 100% Section Loss, Floorbeam 2S (Looking Southwest)

Photo 21 – 100% Section Loss at Bottom of Flange for 2/3 Length, Floorbeam 3S (Looking Southwest)

Photo 22 – 8”x2” area of 100% Section Loss, Top of Stringer 3W (Looking Southwest)

Photo 23 – 6”x0.5” area of 100% Section Loss, Top of Stringer 2W (Looking West)

Photo 24 – 100% Section Loss 2” Long, Stringer 2W (Looking West)

Photo 25 – Deformation in Floorbeam 8S, ½" Offset (Looking West)

Photo 26 – Erosion Occurring under Span 1 in Southeast Quadrant Near Pier 1S (Looking Southwest)

Photo 27 – Deck Underside between Floorbeams 4S and 5S (Looking South)

Photo 28 – Span 2 Underside from Pier 2S (Looking South)

Photo 29 – Elevation Pier 1S North Face (Looking South)

Photo 30 – Slope Erosion at North Embankment (Looking North)

Photo 31 – Spall on Pier 2S (Looking West)

Photo 32 – Honeycombing on Pier 2S north face, 1sqft (Looking South)

Photo 33 – Pier 1S West Pier Cap (Looking West)

Photo 34 – Pier 1S East Pier Cap (Looking East)

Photo 35 – Pier 2S West Pier Cap (Looking West)

Photo 36 – Pier 2S East Pier Cap (Looking East)

Photo 37 – Replaced Boards at North Abutment (Looking South)

Photo 38 – Structure Nameplate (Looking North)

Photo 39 – Southeast Bearing (Looking Southwest)

Photo 40 – Buried Southwest Bearing (Looking South)

Photo 41 – Northwest Bearing (Looking North)

Photo 42 – Northeast Bearing (Looking North)

Photo 43 – Hairline crack on north face of Pier 2S (Looking South)

Photo 44 –Pier 1S south face (Looking North)

Photo 45 – Pier 2S north face (Looking South)

Photo 46 – Pier 2S south face (Looking North)

Photo 47 – North Abutment and tops of stringers (Looking North)

Photo 48 – 100% Section loss in cross frame (Looking Southwest)

Photo 49 – South Abutment (Looking Southwest)

Photo 50 – Deck underside Span 3 (Looking North)

Photo 51 – Missing bolt in top of truss (Looking East)

Appendix B – Cost Estimate

2024

BRIDGE COST ESTIMATE WORKSHEET

- CPM, REHAB, REPLACE -

REV. 01/31/2023

DATE: 2/4/2025

OWNER: The City of Ann Arbor FISCAL YEAR: 2025 ENGINEER: Baker and Associates

REGION: University

TSC: Brighton PR: #N/A MP: #N/A

	LENGTH	Out to Out WIDTH	Curb to Curb WIDTH
	304.9	8.6	8.0

STRUCTURE ID: BNA-P2

BRIDGE ID: #N/A

LOCATION: #N/A over #N/A

PRIMARY WORK ACTIVITY: Bridge Replacement - 14' Width

OTHER WORK:

DECK AREA:	2,622	SFT
CLEAR ROADWAY:	2,439	SFT

STR. TYPE: Structural Steel Truss

WORK ACTIVITY		MDOT Bridge Design Guides	QUANTITY	UNIT	UNIT COST	TOTAL
NEW BRIDGE		(increase deck area based on design standards and hydraulic requirements)				
Single or Multiple Spans, Grade Separation		(add demo, approach, MOT)		SFT	$415.00 /SFT	
Single Span, Over Water	Length < 100ft	(add demo, approach, MOT)		SFT	$500.00 /SFT	
Multiple Spans, Over Water	Length > 100ft	(add demo, approach, MOT)	4,573.5	SFT	$450.00 /SFT	$2,058,075.00
Precast Culvert	Length < 40ft	(add demo, approach, MOT)		SFT	$540.00 /SFT	
NEW SUPERSTRUCTURE						
New Superstructure, Grade Separation		(incl. remove exist deck/super; add MOT & approach)		SFT	$295.00 /SFT	
New Superstructure, Over Water		(incl. remove exist deck/super; add MOT & approach)		SFT	$300.00 /SFT	
WIDENING						
Structure Widening, ft		(incl. deck/super/sub widening, add approach transition)		SFT	$630.00 /SFT	
NEW DECK						
New Bridge Deck & Barrier		(incl. remove exist deck/railing, add approach, MOT)		SFT	$150.00 /SFT	
DEMOLITION						
Entire Structure, Grade Separation				SFT	$75.00 /SFT	
Entire Structure, Over Water			2,622.1	SFT	$95.00 /SFT	$249,103.30
DECK REPAIR / TREATMENTS						
Bridge Railing Replacement		(incl. removal and replacement)		FT	$750.00 /FT	
Concrete Brush Block / Curb Patch		(incl. hand chipping and formwork)		FT	$29.00 /FT	
Concrete Barrier Patch		(incl. hand chipping and formwork)		SFT	$85.00 /SFT	
Concrete Deck Patch		(incl. hand chipping)		SFT	$68.00 /SFT	
Deep Overlay		(incl. joint repl & hydro)		SFT	$46.00 /SFT	
Epoxy Overlay		(incl. warranty)		SYD	$48.00 /SYD	
Expansion Joint Gland Replacement		(remove and replace elastomeric gland)		FT	$125.00 /FT	
Expansion Joint Replacement		(incl. removal)		FT	$860.00 /FT	
Full Depth Patch				SFT	$140.00 /SFT	
Healer / Sealer		(penetrates cracks in bridge deck)		SYD	$30.00 /SYD	
HMA Overlay with WP membrane				SYD	$60.00 /SYD	
Overlay Removal		(Epoxy: $22/syd | Latex: $26/syd | HMA: $7/syd)		SYD	$22.00 /SYD	
Reseal Bridge Joints				FT	$28.00 /FT	
Shallow Overlay		(incl. joint repl & hydro)		SFT	$46.00 /SFT	
SUPERSTRUCTURE REPAIR						
Bearing Realignment / Replacement		(incl. temporary supports)		EA	$6,450.00 EA	
Heat Straightening		(incl. clean and coat)		EA	$57,000.00 EA	
Pack Rust Repair		(greater than 3/8" separation)		FT	$1,150.00 /FT	
Paint - Complete		(incl. clean & coat)		SFT	$22.00 /SFT	
Paint - Partial / Spot / Zone		(incl. clean & coat - $20k minimum)		SFT	$35.00 /SFT	
PCI Beam End Blockout		(incl. temporary supports)		EA	$7,200.00 EA	
Pin & Hanger Replacement		(incl. temporary supports)		EA	$17,000.00 EA	
Structural Steel Repair		(based on 6ft repair length)		EA	$4,000.00 EA	
Other		Repair Railings		LSUM	$20,000.00 /LSUM	
SUBSTRUCTURE REPAIR						
Substructure Patching		(measured x 2) replace if repair area > 30%		CFT	$360.00 /CFT	
Substructure Replacement		(incl. temporary supports, excavation)		CFT	$375.00 /CFT	
Substructure Horizontal Surface Sealer				SYD	$75.00 /SYD	
Other		Repair Abutment		EA	$20,000.00 /EA	
MISCELLANEOUS						
Articulating Concrete Block System (ACB)				SYD	$320.00 /SYD	
Concrete Surface Coating				SYD	$47.00 /SYD	
Culvert Cleanout				FT	$125.00 /FT	
Epoxy Crack Injection		(structural crack repair)		FT	$70.00 /FT	
Metal Mesh Panels		(48" width, max 6'-6" length)		SFT	$28.00 /SFT	
Pressure Relief Joint		(use when approach concrete roadway exceeds 1,000ft)		FT	$110.00 /FT	
Riprap		(assume 10ft distance around perimeter of substructure)	122.2	SYD	$275.00 /SYD	$33,611.11
Silane Treatment		(penetrating sealer for concrete surfaces)		SFT	$7.00 /SFT	
Slope Protection Repairs				SYD	$150.00 /SYD	
Other				EA	$20,000.00 /LSUM	
					STRUCTURE CONSTRUCTION BUDGET	$2,340,789
ROAD WORK						
Approach Pavement, 12" RC		(incl. removal; add curb, gutter, guardrail) 20' ea. end	38.2	SYD	$230.00 /SYD	$8,791.11
Approach Curb & Gutter		(incl. removal) 40' ea. quadrant		FT	$57.00 /FT	
Guardrail Anchorage to Bridge		(each quadrant)		EA	$2,540.00 /EA	
Guardrail		(incl. removal) < 200ft beyond reference line		FT	$41.00 /FT	
Guardrail Terminal		(each quadrant)		EA	$3,900.00 /EA	
Roadway Approach Work		(beyond approach pavement)		LSUM	LSUM	
Other		Repave Approaches		LSUM	$10,000.00 LSUM	
TRAFFIC CONTROL	*Unit Cost to be determined by Region or TSC Traffic & Safety*					
Part Width Construction				LSUM	LSUM	
Crossovers				EA	/EA	
Temporary Traffic Signals				set	/set	
RR Flagging				LSUM	LSUM	
Detour (Pedestrian)			1.0	LSUM	$5,000.00 LSUM	$5,000.00
					RELATED ROAD/TRAFFIC CONSTRUCTION BUDGET	$13,791
CONTINGENCY	(10% - 20%) (use higher contingency for small projects)		20	%	$2,355,000.00	$471,000
MOBILIZATION	(estimate at 10%)		10	%	$2,826,000.00	$283,000
INFLATION	(assume 4% per year, beginning in 2025)		4	%	$3,109,000.00	$124,000

(Does not include PE or CE)

TOTAL CONSTRUCTION BUDGET $3,233,000

(Refer to programming guidelines in Bridge Cost Estimating Worksheet-Key for CE,PE & PE-S)

16 % CE	CON BUDGET	$3,750,000
20 % PE	PE BUDGET	$4,000
20 % PE	PE-S BUDGET	$627,000

2024

BRIDGE COST ESTIMATE WORKSHEET

- CPM, REHAB, REPLACE -

REV. 01/31/2023

OWNER: The City of Ann Arbor
REGION: University
TSC: Brighton
FISCAL YEAR: 2025
PR: #N/A MP: #N/A
LOCATION: #N/A over #N/A
PRIMARY WORK ACTIVITY: Superstructure Replacement - 14' Width
OTHER WORK:

DATE: 2/4/2025
ENGINEER: Baker and Associates
STRUCTURE ID: BNA-P2
BRIDGE ID: #N/A
STR. TYPE: Structural Steel Truss

	LENGTH	Out to Out WIDTH	Curb to Curb WIDTH
	304.9	8.6	8.0
DECK AREA:		2,622	SFT
CLEAR ROADWAY:		2,439	SFT

WORK ACTIVITY		MDOT Bridge Design Guides	QUANTITY	UNIT	UNIT COST	TOTAL
NEW BRIDGE		(increase deck area based on design standards and hydraulic requirements)				
Single or Multiple Spans, Grade Separation		(add demo, approach, MOT)		SFT	$415.00 /SFT	
Single Span, Over Water	Length < 100ft	(add demo, approach, MOT)		SFT	$500.00 /SFT	
Multiple Spans, Over Water	Length > 100ft	(add demo, approach, MOT)		SFT	$450.00 /SFT	
Precast Culvert	Length < 40ft	(add demo, approach, MOT)		SFT	$540.00 /SFT	
NEW SUPERSTRUCTURE						
New Superstructure, Grade Separation		(incl. remove exist deck/super; add MOT & approach)		SFT	$295.00 /SFT	
New Superstructure, Over Water		(incl. remove exist deck/super; add MOT & approach)	4,573.5	SFT	$300.00 /SFT	$1,372,050.00
WIDENING						
Structure Widening, ft		(incl. deck/super/sub widening, add approach transition)		SFT	$630.00 /SFT	
NEW DECK						
New Bridge Deck & Barrier		(incl. remove exist deck/railing, add approach, MOT)		SFT	$150.00 /SFT	
DEMOLITION						
Entire Structure, Grade Separation				SFT	$75.00 /SFT	
Entire Structure, Over Water				SFT	$95.00 /SFT	
DECK REPAIR / TREATMENTS						
Bridge Railing Replacement		(incl. removal and replacement)		FT	$750.00 /FT	
Concrete Brush Block / Curb Patch		(incl. hand chipping and formwork)		FT	$29.00 /FT	
Concrete Barrier Patch		(incl. hand chipping and formwork)		SFT	$85.00 /SFT	
Concrete Deck Patch		(incl. hand chipping)		SFT	$68.00 /SFT	
Deep Overlay		(incl. joint repl & hydro)		SFT	$46.00 /SFT	
Epoxy Overlay		(incl. warranty)		SYD	$48.00 /SYD	
Expansion Joint Gland Replacement		(remove and replace elastomeric gland)		FT	$125.00 /FT	
Expansion Joint Replacement		(incl. removal)		FT	$860.00 /FT	
Full Depth Patch				SFT	$140.00 /SFT	
Healer / Sealer		(penetrates cracks in bridge deck)		SYD	$30.00 /SYD	
HMA Overlay with WP membrane				SYD	$60.00 /SYD	
Overlay Removal		(Epoxy: $22/syd | Latex: $26/syd | HMA: $7/syd)		SYD	$22.00 /SYD	
Reseal Bridge Joints				FT	$28.00 /FT	
Shallow Overlay		(incl. joint repl & hydro)		SFT	$46.00 /SFT	
SUPERSTRUCTURE REPAIR						
Bearing Realignment / Replacement		(incl. temporary supports)		EA	$6,450.00 EA	
Heat Straightening		(incl. clean and coat)		EA	$57,000.00 EA	
Pack Rust Repair		(greater than 3/8" separation)		FT	$1,150.00 /FT	
Paint - Complete		(incl. clean & coat)		SFT	$22.00 /SFT	
Paint - Partial / Spot / Zone		(incl. clean & coat - $20k minimum)		SFT	$35.00 /SFT	
PCI Beam End Blockout		(incl. temporary supports)		EA	$7,200.00 EA	
Pin & Hanger Replacement		(incl. temporary supports)		EA	$17,000.00 EA	
Structural Steel Repair		(based on 6ft repair length)		EA	$4,000.00 EA	
Other		Repair Railings		LSUM	$20,000.00 /LSUM	
SUBSTRUCTURE REPAIR						
Substructure Patching		(measured x 2) replace if repair area > 30%	13.0	CFT	$360.00 /CFT	$4,680.00
Substructure Replacement		(incl. temporary supports, excavation)		CFT	$375.00 /CFT	
Substructure Horizontal Surface Sealer				SYD	$75.00 /SYD	
Other		Repair Abutment		EA	$20,000.00 /EA	
MISCELLANEOUS						
Articulating Concrete Block System (ACB)				SYD	$320.00 /SYD	
Concrete Surface Coating				SYD	$47.00 /SYD	
Culvert Cleanout				FT	$125.00 /FT	
Epoxy Crack Injection		(structural crack repair)		FT	$70.00 /FT	
Metal Mesh Panels		(48" width, max 6'-6" length)		SFT	$28.00 /SFT	
Pressure Relief Joint		(use when approach concrete roadway exceeds 1,000ft)		FT	$110.00 /FT	
Riprap		(assume 10ft distance around perimeter of substructure)	22.2	SYD	$275.00 /SYD	$6,111.11
Silane Treatment		(penetrating sealer for concrete surfaces)		SFT	$7.00 /SFT	
Slope Protection Repairs				SYD	$150.00 /SYD	
Other				EA	$20,000.00 /LSUM	
					STRUCTURE CONSTRUCTION BUDGET	$1,382,841
ROAD WORK						
Approach Pavement, 12" RC		(incl. removal; add curb, gutter, guardrail) 20' ea. end	38.2	SYD	$230.00 /SYD	$8,791.11
Approach Curb & Gutter		(incl. removal) 40' ea. quadrant		FT	$57.00 /FT	
Guardrail Anchorage to Bridge		(each quadrant)		EA	$2,540.00 /EA	
Guardrail		(incl. removal) < 200ft beyond reference line		FT	$41.00 /FT	
Guardrail Terminal		(each quadrant)		EA	$3,900.00 /EA	
Roadway Approach Work		(beyond approach pavement)		LSUM	LSUM	
Other		Repave Approaches		LSUM	$10,000.00 LSUM	
TRAFFIC CONTROL	*Unit Cost to be determined by Region or TSC Traffic & Safety*					
Part Width Construction				LSUM	LSUM	
Crossovers				EA	/EA	
Temporary Traffic Signals				set	/set	
RR Flagging				LSUM	LSUM	
Detour (Pedestrian)			1.0	LSUM	$5,000.00 LSUM	$5,000.00
					RELATED ROAD/TRAFFIC CONSTRUCTION BUDGET	$13,791
CONTINGENCY	(10% - 20%) (use higher contingency for small projects)		20	%	$1,397,000.00	$279,000
MOBILIZATION	(estimate at 10%)		10	%	$1,676,000.00	$168,000
INFLATION	(assume 4% per year, beginning in 2025)		4	%	$1,844,000.00	$74,000

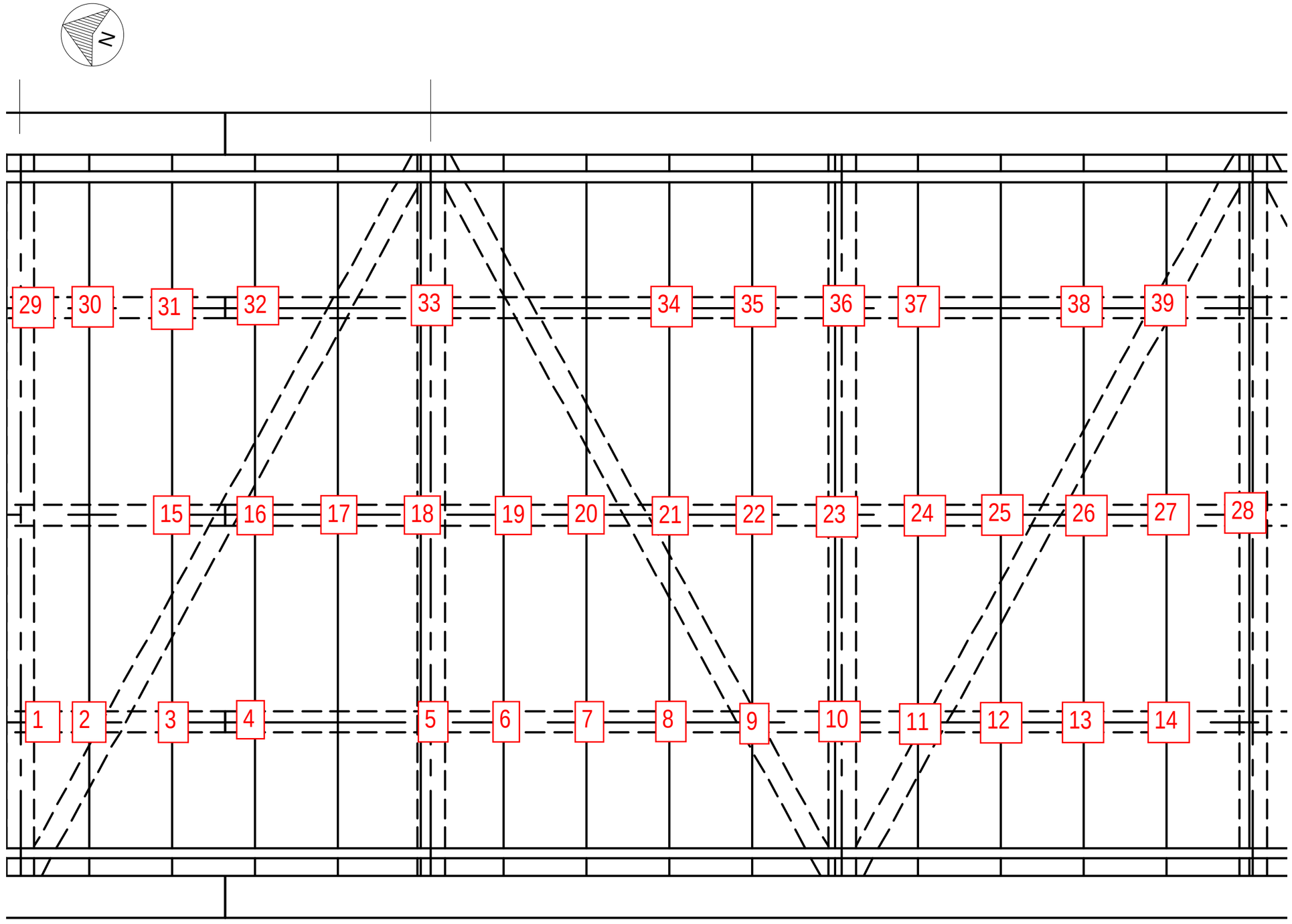
(Does not include PE or CE)

TOTAL CONSTRUCTION BUDGET $1,918,000

(Refer to programming guidelines in Bridge Cost Estimating Worksheet-Key for CE,PE & PE-S)

16 % CE	CON BUDGET	$2,225,000
20 % PE	PE BUDGET	$4,000
20 % PE	PE-S BUDGET	$371,000

Appendix C – Section Loss Measurements


N
29
30
31
32
33
34
35
36
37
38
39
15
16
17
18
19
20
21
22
23
24
25
26
27
28
1
2
3
4
5
6
7
8
9
10
11
12
13
14

PROJECT : *Ann Arbor Bridge Inspections*

TASK : *BNA-P2 Barton Pedestrian Bridge - South* PROJECT NO : *203573*

SUBJECT : *Section Loss Measurements*

CALCULATED BY : *LAW* DATE : *12/11/2024* CHECKED BY : *MBC* DATE : *12/13/2024*

Michael Baker INTERNATIONAL

DESCRIPTION:

Section loss measurements taken on the top flange of the stringers when timber decking within 15 feet of the north end of the structure.

Deficiency Number	Member	Distance from North End (ft)	Plan Dimensions (inxin)	Description
1	1W	0.33	3x3	1/16" pitting depth
2	1W	1.08	3x3	1/32" pitting depth
3	1W	2.08	1x1	100% section loss
4	1W	2.83	4x2	100% section loss, beam filled with water.
5	1W	4.75	3x5	1/16" pitting depth
6	1W	6.08	3x4	1/32" pitting depth
7	1W	6.75	3.5x3	3/32" pitting depth
8	1W	7.58	3x2	100% section loss
9	1W	8.42	6x3	1/16" pitting depth
10	1W	9.75	6x3	3/16" pitting depth
11	1W	10.58	6x3	1/16" pitting depth
12	1W	11.58	3x2	100% section loss
13	1W	12.58	5x3	1/16" pitting depth
14	1W	13.58	4x3	100% section loss
15	2W	1.92	9x5	1/16" pitting depth
16	2W	2.92	8x5	3/32" pitting depth
17	2W	3.92	6x5	Light rusting and pitting up to 1/16" deep
18	2W	4.92	6x5	Pitting up to 1/16"
19	2W	5.92	7x5	Pitting up to 1/16"
20	2W	7.08	7x5	Pitting up to 1/16"
21	2W	8.08	9x4	1/16" pitting depth
22	2W	9.08	8x5	Pitting ranging from 1/16" to 3/32" deep
23	2W	10.25	8x5	Light corrosion with flaking and pitting, 1/16" deep
24	2W	11.17	8x5	1/16" pitting depth
25	2W	12.17	7x5	Pitting up to 1/16"
26	2W	13.17	7x5	Pitting up to 1/16"
27	2W	14.17	7x5	Minor corrosion with flaking and 1/16" pitting depth
28	2W	15.00	7x5	1/32" minor corrosion
29	3W	0.33	3x4	1/16" pitting depth
30	3W	1.00	2x2	1/8" pitting depth
31	3W	1.92	3x2.5	3/32" pitting depth
32	3W	2.83	5x3	3/16" pitting depth
33	3W	4.83	5x3	1/4" pitting depth
34	3W	7.75	7x3	1/8" pitting depth
35	3W	8.67	7x3	1/8" pitting depth
36	3W	9.75	4x3	3/32" pitting depth
37	3W	10.67	5.5x3	1/8" pitting depth
38	3W	12.67	4x3	1/16" pitting depth
39	3W	13.58	5x3	3/32" pitting depth

FINAL REPORT
2025 BRIDGE INSPECTION

STRUCTURE:	Barton Nature Area Pedestrian Bridge - South
COUNTY:	Washtenaw
STRUCTURE NUMBER:	BNA-P2

PREPARED FOR:

The City of Ann Arbor

PREPARED BY:

Michael Baker International
Dearborn, MI

Michael Baker
INTERNATIONAL

DATE INSPECTED:	December 23, 2025
DATE PREPARED:	December 29, 2025
INSPECTION TEAM:	Mitchel Cook, PE, QTL Lauren Woods, PE, ATL

Table of Contents

I. Physical Description of Structure 3

II. Field Inspection and Physical Evaluation 3

Deck and Railings 3

Stringers 4
Steel 4
Timber 4

Steel Trusses, Floor Beams and Lateral Bracing 4

Abutments 5

Piers 5

Approaches 5

III. Bridge Compliance with Current Standards 5

IV. Load Capacity 5

V. Recommendations 6

VI. Summary of Repair Costs 6

Attachments
Appendix A – Photographs
Appendix B – Cost Estimate

I. Physical Description of Structure

The existing structure carrying the Barton Nature Trail over the Huron River is located in the City of Ann Arbor, Michigan. The structure is located just north of West Huron River Drive and acts as the south trailhead of the Barton Nature Area Trail. The City of Ann Arbor's Barton Nature Area is located just north of the bridge, and the City's Hilltop Nature Area is located at the south end of the bridge. For the purposes of this report, the north end is considered the Barton Nature Area end of the structure.

The three-span structure was constructed in about 1991 and consists of three (3) weathering steel truss superstructure spans with wood decking. The overall structure length is 304'-10 ½" between the abutment backwalls. The south span (Span #1) crosses the south bank of the river with a span length of 84'-4 ½". Span #2 (center span) crosses the Huron River between two piers and has a span of 110'-3 ¾". The north span (Span #3) crosses the Huron River and the north riverbank and has a span of 110'-2 ¼". The bridge railings consist of one (1) horizontal, 2" diameter, steel handrail and six (6) horizontal, 1 ½" square hollow steel sections (HSS). The clear width between the handrails is 8'-0".

The structure was repaired in 2020. The south end of the bridge that had been buried in sediment was excavated. The steel truss, floor beams, stringers, and lateral bracing were all heavily deteriorated. Steel plates were welded to the bottom chord of the truss to rebuild the section. The first four south bays of stringers and floor beams had completely deteriorated and timber stringers on concrete foundations were added to support the deck below these four bays.

The existing substructure units consist of concrete abutments and concrete wall piers (construction details unknown).

II. Field Inspection and Physical Evaluation

The bridge was inspected on December 23, 2025. The overall condition of the structure is poor.

Deck and Railings

The decking consists of transverse wood planks measuring approximately 2 ½" thick by 11 ¼" wide, with some planks measuring 2 ½" by 8" (nominal 3" thick). Some of the planks have been replaced with 1 ½" thick planks (nominal 2" thick), with a 1" spacer block placed between the top of stringer and the new plank to align the top surface of all planks. The planks are connected to a steel angle connected to the center stringer and to edge angles attached to each of the trusses. Some of these connections have failed or are no longer in place, and a few of the planks deflect when subjected to loads (pedestrians, bikes, etc.). The underside of the timber decking is wet in the end spans.

The top surface of many of the planks shows signs of overall wear and aging, including cracks, checks, splits. New boards have been placed throughout the structure as needed ***(Photo 10)***. Overall, the deck is in fair condition.

The bridge railings consist of one (1) horizontal, 2" diameter, steel handrail and six (6) horizontal, 1 ½" square hollow steel sections (HSS***) (Photos 11, 12 and 13)***. Vegetation has started to grow near both ends of the structure on the railings and trusses. Moss and lichen are present in these areas. The railings are in good condition.

Stringers

Steel

The stringers consist of three (3) parallel HSS's measuring 4"x 3". During the 2024 inspection, 15 feet of boards were removed from the north end of the structure. This allowed further hands-on inspection of the stringers to take measurements of section loss on the tops of the members. During this inspection, the same section of timber was unable to be removed due to concerns from the city of reinstalling the new timber boards. Instead, three sections of timber across the spans was removed for inspection of the stringers. Each section of removed timber boards was approximately 5' to 6' in length. The northern-most section was approximately 12.5' north of Pier 2S, the central location was approximately at mid-span of the center span, and the southern-most section was adjacent and to the north of Pier 1S. Overall, the members are in fair condition with 1/16" to 1/8" pitting across the tops seen in the northern-most and central sections where timber boards were removed. Previously, it was assumed a similar condition present on the north end stringers was consistent across the length of the structure, however the sections inspected this time showed less section loss along the tops of the stringers. The bottom and sides of the stringers show light to moderate surface corrosion. In future inspections, the stringer sections inspected in 2024 and 2025 should be re-inspected for any progression of the noted section loss.

In the south span, the steel stringers have completely deteriorated within 20 ft of the south abutment. At the south end of the south span, the floorbeams have experienced significant section loss. The floor beams and stringers in this area are very close to the ground surface below the superstructure. This is due to previous erosion of material from the parking area at the south end of the structure prior to the approach reconstruction. No further accumulation of material should occur with the new approach. The south end of the south span was repaired with the placement of timber stringers detailed below. Since the timber stringers are now taking the load the steel stringers were originally taking in the first 20 ft from the south abutment, there is no need to re-evaluate the stringer capacity with the current section loss.

Timber

During the 2020 repair project, the first four (4) bays of the steel stringers (from the South Abutment to Floorbeam 4S) were replaced with nominal 4"x6" timber members. These timber stringers are supported by nominal 4"x6" stub columns on 12" diameter concrete footings. The timber stringers are in good condition ***(Photo 17)***.

Steel Trusses, Floor Beams and Lateral Bracing

The trusses consist of various HSS sections for the top and bottom chords, and vertical and diagonal members. The floor beams and lateral bracing below the deck level also consist of HSS sections. Most of these members have light to moderate levels of surface corrosion. There is 100% section loss in the cross member between floor beam 4S and 5S, 8"x2" in size ***(Photo 30)***. The splices of the truss members also show light surface corrosion, minor distortion at the north span splice in the east truss, and midspan of span 2 on the west truss ***(Photos 34 and 35)***. One bolt is missing in the top chord connection in the east truss in the center span ***(Photo 33)***. The lateral bracing below the plank decking, between the trusses and floor beams, is completely missing in the southern-most four (4) bays of the south span.

Due to the vegetation growth alongside and on the structure and railings, there is lichen growing on the surface of the truss members near the abutments. The presence of this may cause water to be trapped on the surface of the uncoated members leading to accelerated corrosion.

The truss bearings at both abutments have dirt and debris. Vegetation is growing on the top of the abutments at the truss bearing locations.

The truss members overall are in fair condition.

Abutments

The abutments are reinforced concrete of unknown construction ***(Photos 31 and 32)***. There is soil and leaf debris on top of the beam seat of both abutments**.** The ground surface in front of the abutments is very close to the truss bearing elevation, especially at the south abutment. This configuration may allow dirt and debris to come in direct contact with the truss members. The slope in front of the north abutment shows signs of erosion but appears to be stable. Both abutments are in good condition.

Piers

The piers are reinforced concrete walls of unknown construction ***(Photos 26 through 29)***. The piers are in fair condition. There is a large concrete spall at the east end of Pier 2S at the water line, with exposed rebar. There is an area approximately 4'x3' that is spalled with exposed rebar with 1'x1' delamination above. There is a hairline crack on the north face of the pier approximately 6 feet in length. There is 1 square foot of spalling at the waterline on the south face of the pier. There is 1 square foot of honey combing on the north face of Pier 2S**.** No deficiencies were noted on Pier 1S. Minor erosion has begun adjacent to the south face of Pier 1S and running along the east side of Span 1 ***(Photo 16)***.

Approaches

The approaches at the north and south ends of the structure are concrete. At the north approach fencing was installed along both sides of the path in 2024 ***(Photos 3 and 4)***. At the south approach, a new concrete path and drainage were constructed in 2025 ***(Photo 6)***.

III. Bridge Compliance with Current Standards

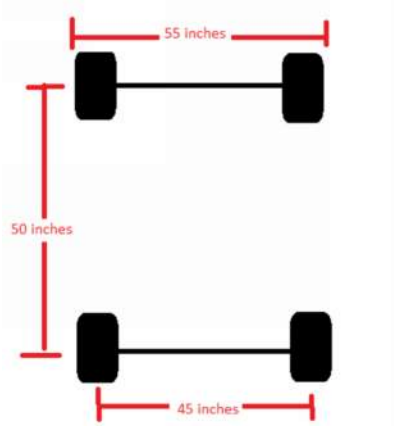
The existing structure is compliant with MDOT and AASHTO standards under LFD methodology.

The existing structure does not meet the current standards for minimum clear width. Per the AASHTO Guide for the Development of Bicycle Facilities, the minimum clear width should be 14 feet.

IV. Load Capacity

The vehicle load limit indicated on the shop drawings and posted on the truss superstructure is 4,000 pounds. The 2022 bridge inspection report indicated the uniform live loading indicated on shop drawings is 85 PSF or 20 PSF plus the vehicle load. The timber stringers that replaced the steel stringers and floor beams in the south span were designed for the 85 PSF live load.

The stringers, floor beams, and decking were load rated in 2024. The condition of the structure has not changed. The current condition of the structure does not warrant a load posting for the structure. The bridge can adequately support pedestrian load or the 3-kip vehicle shown in the schematic on the next page.



Plan view of 3k vehicle dimensions used in 2024 load capacity analysis (provided by Ann Arbor Parks Department)

V. Recommendations

The inspection of the South Barton Pedestrian Structure found the structure to be in poor condition, with some items in need of repair. Recommendations listed below are prioritized with low, medium, high priority:

- Replace the stringers that have significant section loss on the top flange (High – 2 Years)
- Repair concrete spall and delamination damage on Pier 2S (Medium – 5 Years)
- Replace selective deck planks across the entire structure and attach all decking to all stringers and end angles at trusses (Medium - 5 Years)

The Parks staff should regularly remove debris from the top of the abutment walls as well as brush and trees within 15 ft of the structure to keep the structure dry. The recommended repairs will last at least 10-20 years until future maintenance is needed.

The structure should be inspected every 12 months due to the poor condition of the 15’ section at the north end of the superstructure.

VI. Summary of Repair Costs

A breakdown of the cost of the recommended repairs is shown in Appendix B.

A cost estimate was completed for a complete bridge replacement. The estimated cost to fully replace the structure, which includes the demolition and construction of the structure, placing riprap, and detouring pedestrians is $4,656,000 in year 2026 dollars including CE and PE costs. The estimated cost to replace the superstructure, which includes substructure patching, placement of riprap, and detour of pedestrians is $2,709,000 in year 2026 dollars including CE and PE costs.

Appendix A – Photographs

Photo 1 – East Elevation (Looking Northwest)

Photo 2 – West Elevation (Looking Northeast)

Photo 3 – North End Approach (Looking North)

Photo 4 – North End of Structure (Looking South)

Photo 5 – South End of Structure (Looking North)

Photo 6 – New South Approach (Looking South)

Photo 7 – Stringer Condition at Midspan of Span 3 (Looking South)

Photo 8 – Stringer Condition in Span 3 near Pier 2S (Looking South)

Photo 9 – Stringer Condition in Span 2 near Pier 1S (Looking South)

Photo 10 – Typical Deck with New Boards Placed (Looking South)

Photo 11 – Typical Corrosion on Truss Members (Looking East)

Photo 12 – Typical Condition of East Railing (Looking Southeast)

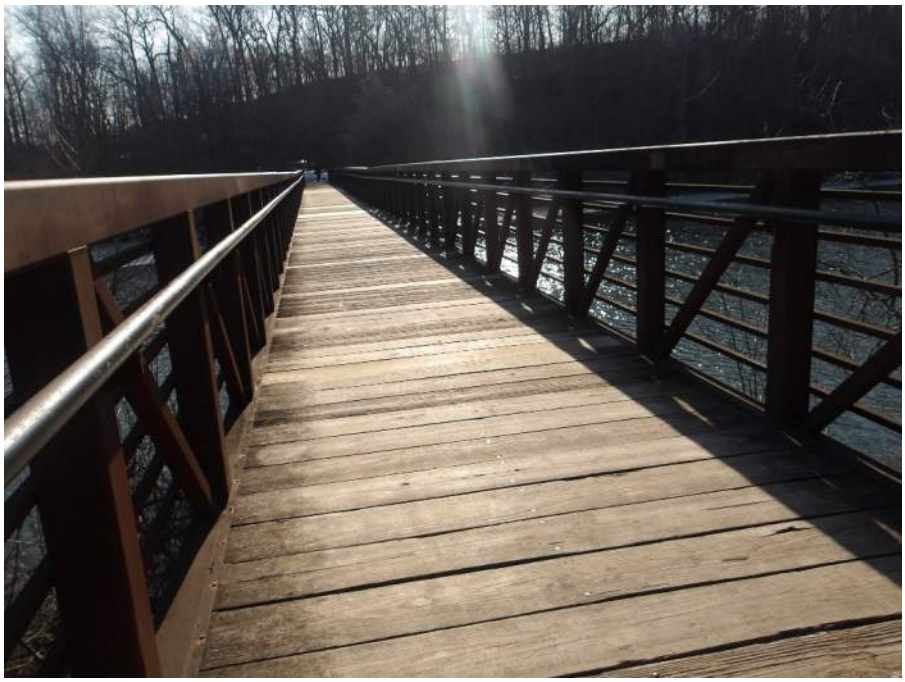


Photo 13 – Typical Condition of West Railing (Looking Southwest)

Photo 14 – Deformation in Floorbeam 8S, ½” Offset (Looking West)

Photo 15 – Deformation in Span 2 Floorbeam near Pier 1, ½" Offset (Looking East)

Photo 16 – Erosion Occurring under Span 1 in Southeast Quadrant Near Pier 1S (Looking Southwest)

Photo 17 – Deck Underside Span 1 (Looking South)

Photo 18 – Deck Underside Span 1 (Looking South)

Photo 19 – Deck Underside Span 1 (Looking North)

Photo 20 – Deck Underside Span 3 (Looking South)

Photo 21 – Pier 1S West Pier Cap (Looking West)

Photo 22 – Pier 1S East Pier Cap (Looking Southeast)

Photo 23 – Pier 2S West Pier Cap (Looking Northwest)

Photo 24 – Pier 2S East Pier Cap (Looking Southeast)

Photo 25 – Structure Nameplate (Looking North)

Photo 26 – Pier 1S North Face (Looking Southeast)

Photo 27 – Pier 1S North Face (Looking Southwest)

Photo 28 – Pier 1S South Face (Looking North)

Photo 29 – Pier 2S South Face (Looking North)

Photo 30 – 100% section loss in cross frame (Looking Southwest)

Photo 31 – North Abutment (Looking Northwest)

Photo 32 – North Abutment (Looking Northeast)

Photo 33 – Missing bolt in top of truss (Looking East)

Photo 34 – Distortion in splice in East truss (Looking East)

Photo 35 – Distortion in splice in West truss (Looking Southwest)

Appendix B – Cost Estimate

2025

BRIDGE COST ESTIMATE WORKSHEET

- CPM, REHAB, REPLACE -

REV. 01/31/2023

DATE: 1/6/2026

OWNER: The City of Ann Arbor FISCAL YEAR: 2026 ENGINEER: Baker and Associates

REGION: University

TSC: Brighton PR: #N/A MP: #N/A

	LENGTH	Out to Out WIDTH	Curb to Curb WIDTH
	304.9	8.6	8.0

STRUCTURE ID: BNA-P2

BRIDGE ID: #N/A

LOCATION: #N/A over #N/A

PRIMARY WORK ACTIVITY: Bridge Replacement - 14' Width

OTHER WORK:

DECK AREA: 2,622 SFT

CLEAR ROADWAY: 2,439 SFT

STR. TYPE: Structural Steel Truss

WORK ACTIVITY		MDOT Bridge Design Guides	QUANTITY	UNIT	UNIT COST	TOTAL
NEW BRIDGE		(increase deck area based on design standards and hydraulic requirements)				
Single or Multiple Spans, Grade Separation		(add demo, approach, MOT)		SFT	$435.00 /SFT	
Single Span, Over Water	Length < 100ft	(add demo, approach, MOT)		SFT	$525.00 /SFT	
Multiple Spans, Over Water	Length > 100ft	(add demo, approach, MOT)	4,573.5	SFT	$470.00 /SFT	$2,149,545.00
Precast Culvert	Length < 40ft	(add demo, approach, MOT)		SFT	$565.00 /SFT	
NEW SUPERSTRUCTURE						
New Superstructure, Grade Separation		(incl. remove exist deck/super; add MOT & approach)		SFT	$310.00 /SFT	
New Superstructure, Over Water		(incl. remove exist deck/super; add MOT & approach)		SFT	$315.00 /SFT	
WIDENING						
Structure Widening, ft		(incl. deck/super/sub widening, add approach transition)		SFT	$630.00 /SFT	
NEW DECK						
New Bridge Deck & Barrier		(incl. remove exist deck/railing, add approach, MOT)		SFT	$150.00 /SFT	
DEMOLITION						
Entire Structure, Grade Separation				SFT	$75.00 /SFT	
Entire Structure, Over Water			2,622.1	SFT	$95.00 /SFT	$249,103.30
DECK REPAIR / TREATMENTS						
Bridge Railing Replacement		(incl. removal and replacement)		FT	$750.00 /FT	
Concrete Brush Block / Curb Patch		(incl. hand chipping and formwork)		FT	$29.00 /FT	
Concrete Barrier Patch		(incl. hand chipping and formwork)		SFT	$85.00 /SFT	
Concrete Deck Patch		(incl. hand chipping)		SFT	$68.00 /SFT	
Deep Overlay		(incl. joint repl & hydro)		SFT	$46.00 /SFT	
Epoxy Overlay		(incl. warranty)		SYD	$48.00 /SYD	
Expansion Joint Gland Replacement		(remove and replace elastomeric gland)		FT	$125.00 /FT	
Expansion Joint Replacement		(incl. removal)		FT	$860.00 /FT	
Full Depth Patch				SFT	$140.00 /SFT	
Healer / Sealer		(penetrates cracks in bridge deck)		SYD	$30.00 /SYD	
HMA Overlay with WP membrane				SYD	$60.00 /SYD	
Overlay Removal		(Epoxy: $22/syd | Latex: $26/syd | HMA: $7/syd)		SYD	$22.00 /SYD	
Reseal Bridge Joints				FT	$28.00 /FT	
Shallow Overlay		(incl. joint repl & hydro)		SFT	$46.00 /SFT	
SUPERSTRUCTURE REPAIR						
Bearing Realignment / Replacement		(incl. temporary supports)		EA	$6,450.00 EA	
Heat Straightening		(incl. clean and coat)		EA	$57,000.00 EA	
Pack Rust Repair		(greater than 3/8" separation)		FT	$1,150.00 /FT	
Paint - Complete		(incl. clean & coat)		SFT	$30.00 /SFT	
Paint - Partial / Spot / Zone		(incl. clean & coat - $20k minimum)		SFT	$60.00 /SFT	
PCI Beam End Blockout		(incl. temporary supports)		EA	$7,200.00 EA	
Pin & Hanger Replacement		(incl. temporary supports)		EA	$17,000.00 EA	
Structural Steel Repair		(based on 6ft repair length)		EA	$4,000.00 EA	
Structural Steel Repair - Stiffener		(includes each side of beam)		EA	$1,500.00 EA	
SUBSTRUCTURE REPAIR						
Substructure Patching		(measured x 2) replace if repair area > 30%		CFT	$360.00 /CFT	
Substructure Replacement		(incl. temporary supports, excavation)		CFT	$375.00 /CFT	
Substructure Horizontal Surface Sealer				SYD	$75.00 /SYD	
Other		Repair Abutment		EA	$20,000.00 /EA	
MISCELLANEOUS						
Articulating Concrete Block System (ACB)				SYD	$320.00 /SYD	
Concrete Surface Coating				SYD	$47.00 /SYD	
Culvert Cleanout				FT	$125.00 /FT	
Epoxy Crack Injection		(structural crack repair)		FT	$70.00 /FT	
Metal Mesh Panels		(48" width, max 6'-6" length)		SFT	$28.00 /SFT	
Pressure Relief Joint		(use when approach concrete roadway exceeds 1,000ft)		FT	$110.00 /FT	
Riprap		(assume 10ft distance around perimeter of substructure)	232	SYD	$275.00 /SYD	$63,800.00
Silane Treatment		(penetrating sealer for concrete surfaces)		SFT	$7.00 /SFT	
Slope Protection Repairs				SYD	$150.00 /SYD	
Other				EA	$20,000.00 /LSUM	

STRUCTURE CONSTRUCTION BUDGET $2,462,448

ROAD WORK						
Approach Pavement, 12" RC	(incl. removal; add curb, gutter, guardrail) 20' ea. end		SYD	$230.00 /SYD		
Approach Curb & Gutter	(incl. removal) 40' ea. quadrant		FT	$57.00 /FT		
Guardrail Anchorage to Bridge	(each quadrant)		EA	$2,540.00 /EA		
Guardrail	(incl. removal) < 200ft beyond reference line		FT	$41.00 /FT		
Guardrail Terminal	(each quadrant)		EA	$3,900.00 /EA		
Roadway Approach Work	(beyond approach pavement)		LSUM		LSUM	
Other	Repave Approaches		LSUM	$10,000.00	LSUM	
TRAFFIC CONTROL	*Unit Cost to be determined by Region or TSC Traffic & Safety*					
Part Width Construction			LSUM		LSUM	
Crossovers			EA		/EA	
Temporary Traffic Signals			set		/set	
RR Flagging			LSUM		LSUM	
Detour (Pedestrian)		1.0	LSUM	$5,000.00	LSUM	$5,000.00

RELATED ROAD/TRAFFIC CONSTRUCTION BUDGET $5,000

CONTINGENCY	(10% - 20%) (use higher contingency for small projects)	20	%	$2,467,000.00	$493,000
MOBILIZATION	(estimate at 10%)	10	%	$2,960,000.00	$296,000
INFLATION	(assume 4% per year, beginning in 2026)	4	%	$3,256,000.00	$130,000

(Does not include PE or CE)

(Refer to programming guidelines in Bridge Cost Estimating Worksheet-Key for CE,PE & PE-S)

TOTAL CONSTRUCTION BUDGET $3,386,000

18 % CE — CON BUDGET $3,995,000

20 % PE — PE BUDGET $1,000

20 % PE — PE-S BUDGET $660,000

2025

BRIDGE COST ESTIMATE WORKSHEET

- CPM, REHAB, REPLACE -

REV. 01/31/2023

DATE: 1/5/2026

OWNER: The City of Ann Arbor FISCAL YEAR: 2026 ENGINEER: Baker and Associates

REGION: University

TSC: Brighton PR: #N/A MP: #N/A

	LENGTH	Out to Out WIDTH	Curb to Curb WIDTH
	304.9	8.6	8.0

STRUCTURE ID: BNA-P2

BRIDGE ID: #N/A

LOCATION: #N/A over #N/A

PRIMARY WORK ACTIVITY: Superstructure Replacement - 14' Width

OTHER WORK:

DECK AREA: 2,622 SFT

CLEAR ROADWAY: 2,439 SFT

STR. TYPE: Structural Steel Truss

WORK ACTIVITY		MDOT Bridge Design Guides	QUANTITY	UNIT	UNIT COST	TOTAL
NEW BRIDGE		(increase deck area based on design standards and hydraulic requirements)				
Single or Multiple Spans, Grade Separation		(add demo, approach, MOT)		SFT	$435.00 /SFT	
Single Span, Over Water	Length < 100ft	(add demo, approach, MOT)		SFT	$525.00 /SFT	
Multiple Spans, Over Water	Length > 100ft	(add demo, approach, MOT)		SFT	$470.00 /SFT	
Precast Culvert	Length < 40ft	(add demo, approach, MOT)		SFT	$565.00 /SFT	
NEW SUPERSTRUCTURE						
New Superstructure, Grade Separation		(incl. remove exist deck/super; add MOT & approach)		SFT	$310.00 /SFT	
New Superstructure, Over Water		(incl. remove exist deck/super; add MOT & approach)	4,573.5	SFT	$315.00 /SFT	$1,440,652.50
WIDENING						
Structure Widening, ft		(incl. deck/super/sub widening, add approach transition)		SFT	$630.00 /SFT	
NEW DECK						
New Bridge Deck & Barrier		(incl. remove exist deck/railing, add approach, MOT)		SFT	$150.00 /SFT	
DEMOLITION						
Entire Structure, Grade Separation				SFT	$75.00 /SFT	
Entire Structure, Over Water				SFT	$95.00 /SFT	
DECK REPAIR / TREATMENTS						
Bridge Railing Replacement		(incl. removal and replacement)		FT	$750.00 /FT	
Concrete Brush Block / Curb Patch		(incl. hand chipping and formwork)		FT	$29.00 /FT	
Concrete Barrier Patch		(incl. hand chipping and formwork)		SFT	$85.00 /SFT	
Concrete Deck Patch		(incl. hand chipping)		SFT	$68.00 /SFT	
Deep Overlay		(incl. joint repl & hydro)		SFT	$46.00 /SFT	
Epoxy Overlay		(incl. warranty)		SYD	$48.00 /SYD	
Expansion Joint Gland Replacement		(remove and replace elastomeric gland)		FT	$125.00 /FT	
Expansion Joint Replacement		(incl. removal)		FT	$860.00 /FT	
Full Depth Patch				SFT	$140.00 /SFT	
Healer / Sealer		(penetrates cracks in bridge deck)		SYD	$30.00 /SYD	
HMA Overlay with WP membrane				SYD	$60.00 /SYD	
Overlay Removal		(Epoxy: $22/syd | Latex: $26/syd | HMA: $7/syd)		SYD	$22.00 /SYD	
Reseal Bridge Joints				FT	$28.00 /FT	
Shallow Overlay		(incl. joint repl & hydro)		SFT	$46.00 /SFT	
SUPERSTRUCTURE REPAIR						
Bearing Realignment / Replacement		(incl. temporary supports)		EA	$6,450.00 EA	
Heat Straightening		(incl. clean and coat)		EA	$57,000.00 EA	
Pack Rust Repair		(greater than 3/8" separation)		FT	$1,150.00 /FT	
Paint - Complete		(incl. clean & coat)		SFT	$30.00 /SFT	
Paint - Partial / Spot / Zone		(incl. clean & coat - $20k minimum)		SFT	$60.00 /SFT	
PCI Beam End Blockout		(incl. temporary supports)		EA	$7,200.00 EA	
Pin & Hanger Replacement		(incl. temporary supports)		EA	$17,000.00 EA	
Structural Steel Repair		(based on 6ft repair length)		EA	$4,000.00 EA	
Other		Repair Railings		LSUM	$20,000.00 /LSUM	
SUBSTRUCTURE REPAIR						
Substructure Patching		(measured x 2) replace if repair area > 30%	13.0	CFT	$360.00 /CFT	$4,680.00
Substructure Replacement		(incl. temporary supports, excavation)		CFT	$375.00 /CFT	
Substructure Horizontal Surface Sealer				SYD	$75.00 /SYD	
Other		Repair Abutment		EA	$20,000.00 /EA	
MISCELLANEOUS						
Articulating Concrete Block System (ACB)				SYD	$320.00 /SYD	
Concrete Surface Coating				SYD	$47.00 /SYD	
Culvert Cleanout				FT	$125.00 /FT	
Epoxy Crack Injection		(structural crack repair)		FT	$70.00 /FT	
Metal Mesh Panels		(48" width, max 6'-6" length)		SFT	$28.00 /SFT	
Pressure Relief Joint		(use when approach concrete roadway exceeds 1,000ft)		FT	$110.00 /FT	
Riprap		(assume 10ft distance around perimeter of substructure)	22.2	SYD	$275.00 /SYD	$6,111.11
Silane Treatment		(penetrating sealer for concrete surfaces)		SFT	$7.00 /SFT	
Slope Protection Repairs				SYD	$150.00 /SYD	
Other				EA	$20,000.00 /LSUM	
					STRUCTURE CONSTRUCTION BUDGET	$1,451,444
ROAD WORK						
Approach Pavement, 12" RC		(incl. removal; add curb, gutter, guardrail) 20' ea. end		SYD	$230.00 /SYD	
Approach Curb & Gutter		(incl. removal) 40' ea. quadrant		FT	$57.00 /FT	
Guardrail Anchorage to Bridge		(each quadrant)		EA	$2,540.00 /EA	
Guardrail		(incl. removal) < 200ft beyond reference line		FT	$41.00 /FT	
Guardrail Terminal		(each quadrant)		EA	$3,900.00 /EA	
Roadway Approach Work		(beyond approach pavement)		LSUM	LSUM	
Other		Repave Approaches		LSUM	$10,000.00 LSUM	
TRAFFIC CONTROL		*Unit Cost to be determined by Region or TSC Traffic & Safety*				
Part Width Construction				LSUM	LSUM	
Crossovers				EA	/EA	
Temporary Traffic Signals				set	/set	
RR Flagging				LSUM	LSUM	
Detour (Pedestrian)			1.0	LSUM	$5,000.00 LSUM	$5,000.00
					RELATED ROAD/TRAFFIC CONSTRUCTION BUDGET	$5,000
CONTINGENCY	(10% - 20%) (use higher contingency for small projects)		20	%	$1,456,000.00	$291,000
MOBILIZATION	(estimate at 10%)		10	%	$1,747,000.00	$175,000
INFLATION	(assume 4% per year, beginning in 2025)		4	%	$1,922,000.00	$77,000

(Does not include PE or CE)

(Refer to programming guidelines in Bridge Cost Estimating Worksheet-Key for CE,PE & PE-S)

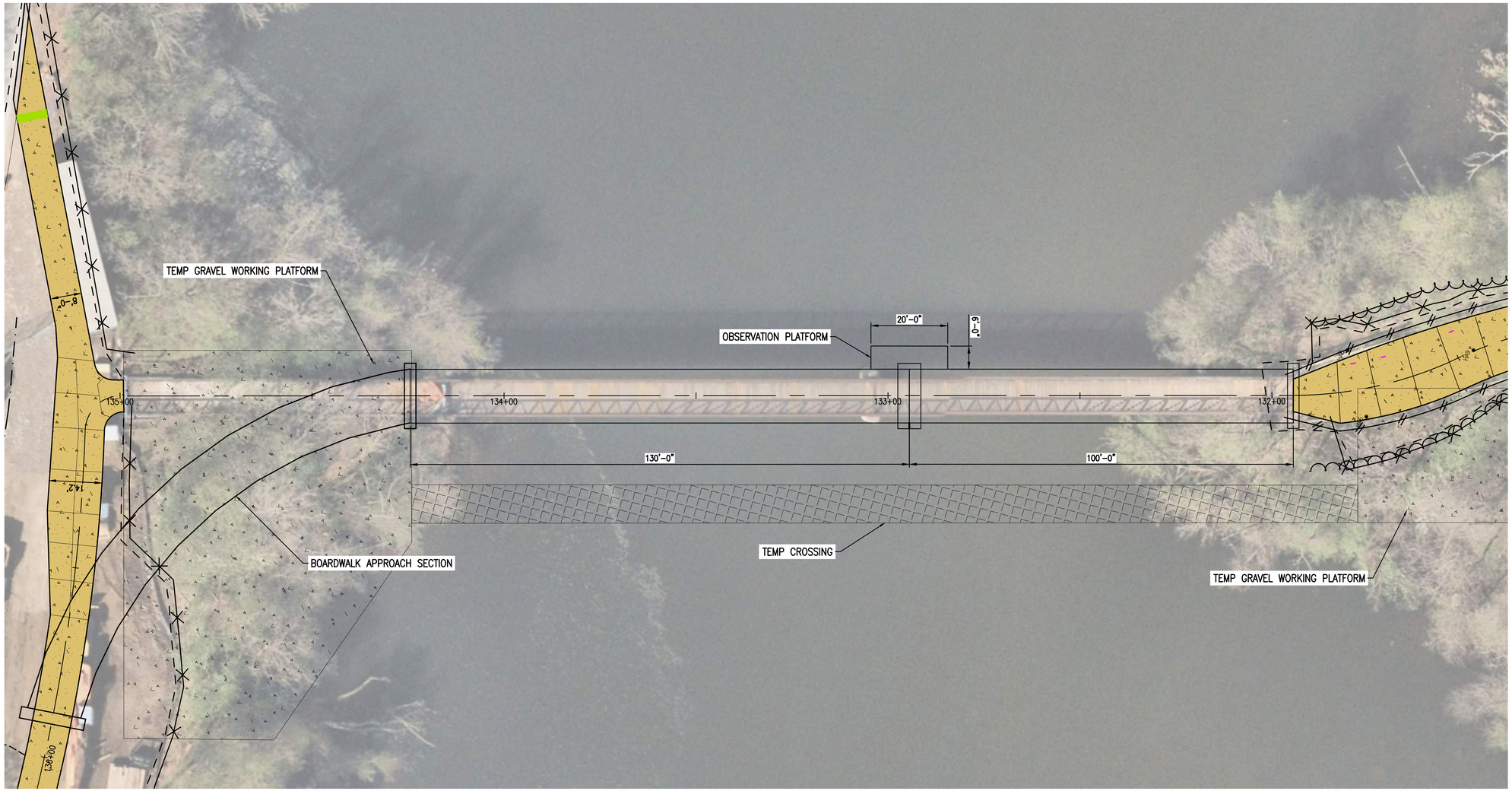
TOTAL CONSTRUCTION BUDGET $1,999,000

16 % CE — CON BUDGET $2,319,000

20 % PE — PE BUDGET $1,000

20 % PE — PE-S BUDGET $389,000

Appendix B – Conceptual Bridge Drawings



PLAN OF 2 SPAN CONTINUOUS STEEL BEAM BRIDGE WITH OBSERVATION PLATFORM

OHM
ARCHITECTS ENGINEERS PLANNERS
OHM-ADVISORS.COM

PRELIMINARY - NOT FOR CONSTRUCTION

ISSUED FOR: CONCEPTUAL STUDY
REVISION: DESCRIPTION
9/11/2025: DATE

PROJECT NUMBER 0028-25-0030
PM ##

ANN ARBOR PARKS
SOUTH BARTON BRIDGE ALTERNATIVE ANALYSIS

1

DRAWING PATH: P:\0000_0\0100\0028250030_South_Barton_Bridge_Analysis\Drawings\Civil\Xref\0280308SE.dwg September 12, 2025 - 2:01 PM

PLAN OF SINGLE SPAN PREFABRICATED TRUSS BRIDGE

OHM
ARCHITECTS ENGINEERS PLANNERS
OHM-ADVISORS.COM

PRELIMINARY - NOT FOR CONSTRUCTION

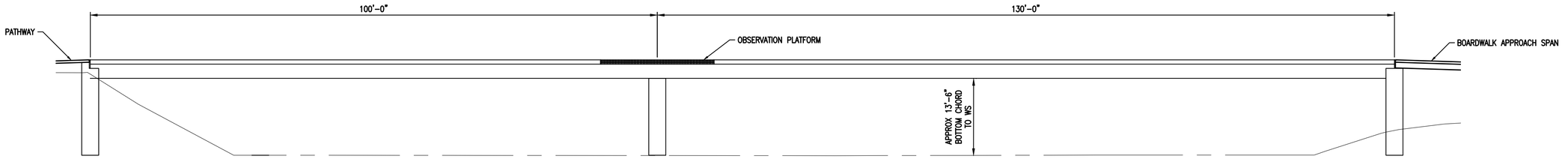
ISSUED FOR: CONCEPTUAL STUDY 9/11/2025
REVISION DESCRIPTION DATE

PROJECT NUMBER 0028-25-0030
PM ##

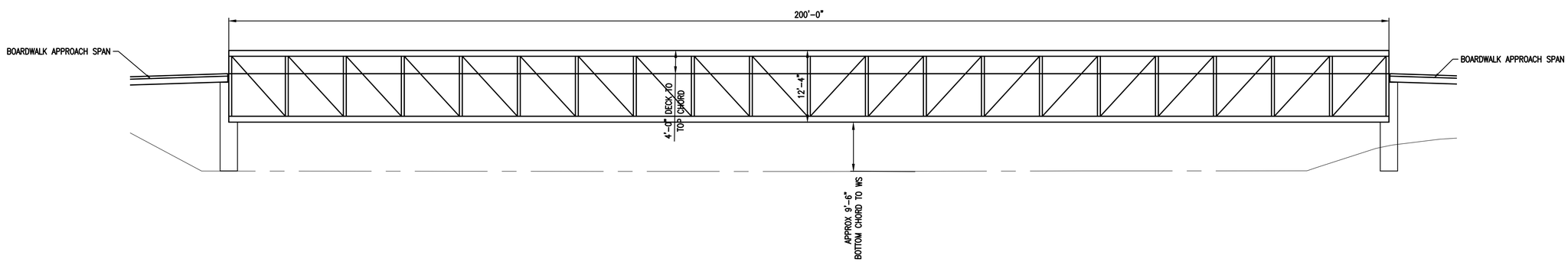
ANN ARBOR PARKS
SOUTH BARTON BRIDGE ALTERNATIVE ANALYSIS

2

DRAWING PATH: P:\0000_0\0000\0028250030_South_Barton_Bridge_Analysis\Drawings\Civil\Xref\C250030BSE.dwg September 12, 2025 - 2:01 PM



ELEVATION OF 2 SPAN CONTINUOUS STEEL BEAM BRIDGE WITH OBSERVATION PLATFORM
(RAILING NOT SHOWN)



ELEVATION OF SINGLE SPAN PREFABRICATED TRUSS BRIDGE

OHM
ARCHITECTS ENGINEERS PLANNERS
OHM-ADVISORS.COM

PRELIMINARY - NOT FOR CONSTRUCTION

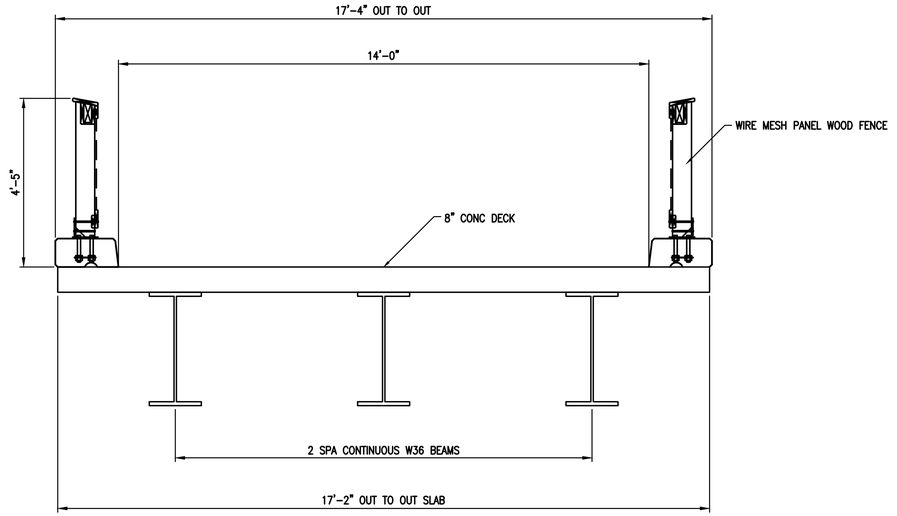
ISSUED FOR: CONCEPTUAL STUDY 9/11/2025
REVISION DESCRIPTION DATE

PROJECT NUMBER PM
0028-25-0030 ##

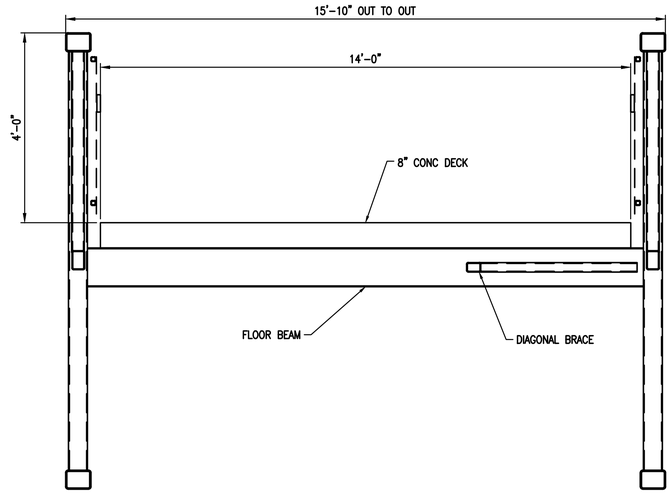
ANN ARBOR PARKS
SOUTH BARTON BRIDGE ALTERNATIVE ANALYSIS

3

DRAWING PATH: P:\0000_0100\0028250030_South_Barton_Bridge_Analysis\Drawings\Civil\Xref\250030BSE.dwg September 12, 2025 - 2:01 PM



DECK SECTION OF OF 2 SPAN CONTINUOUS STEEL BEAM BRIDGE



DECK SECTION OF PREFABRICATED TRUSS BRIDGE

OHM
ARCHITECTS ENGINEERS PLANNERS
OHM-ADVISORS.COM

PRELIMINARY - NOT FOR CONSTRUCTION

ISSUED FOR:	CONCEPTUAL STUDY
REVISION	DESCRIPTION

PROJECT NUMBER	PM
0028-25-0030	##

ANN ARBOR PARKS
SOUTH BARTON BRIDGE ALTERNATIVE ANALYSIS

4

DRAWING PATH: P:\0000_0100\0028250030_South_Barton_Bridge_Analysis\Drawings\Civil\Xref\250303BSE.dwg, September 12, 2025 - 2:01 PM

Appendix C – Cost Estimates

OPINION OF PROBABLE CONSTRUCTION COST

ORCHARD, HILTZ & McCLIMENT, INC.
34000 Plymouth Road, Livonia, Michigan, 48150
Telephone: (734) 522-6711 FAX: (734) 466-4557

PROJECT:	South Barton Bridge Replacement	DATE:	November 25, 2025
LOCATION:	Ann Arbor, Michigan	PROJECT #:	0028-25-0030
WORK:	Pedestrian Bridge Replacement	ESTIMATOR:	KDF
	Prefabricated Truss Bridge with Boardwalk Approach	CHECKED BY:	CJE
		CURRENT ENR:	

ITEM CODE	DESCRIPTION	UNIT	TOTAL	UNIT PRICE	COST
	CATEGORY 1 - Miscellaneous				
1100001	Mobilization, Max	LSUM	1	$ 275,000.00	$ 275,000.00
	CATEGORY 2 - Bridge Replacement				
2040060	Structures, Rem	LSUM	1	$ 215,000.00	$ 215,000.00
2060002	Backfill, Structure, CIP	Cyd	25	$ 50.00	$ 1,250.00
2060010	Excavation, Fdn	Cyd	150	$ 35.00	$ 5,250.00
7040007	Cofferdams	LSUM	1	$ 15,000.00	$ 15,000.00
7060092	Reinforcement, Steel, Epoxy Coated	Lb	7000	$ 50.00	$ 350,000.00
7060100	Substructure Conc	Cyd	38	$ 1,000.00	$ 38,000.00
7062001	Conc, Grade 3500	Cyd	11	$ 1,000.00	$ 11,000.00
7062003	Conc, Grade 4500	Cyd	80	$ 1,150.00	$ 92,000.00
7140001	Structures, Temp	LSUM	1	$ 500,000.00	$ 500,000.00
7140002	Structures, Temp, Rem	LSUM	1	$ 10,000.00	$ 10,000.00
	CATEGORY 3 - Prefabricated Truss Bridge				
7070081	Steel Pedestrian Bridge, Type 2, Furn and Fab	LSUM	1	$ 1,000,000.00	$ 1,000,000.00
7070086	Steel Pedestrian Bridge, Type 2, Erect	LSUM	1	$ 250,000.00	$ 250,000.00
	CATEGORY 5 - Boardwalk Approach				
7057050	Steel Helical Pier	Ea	20	$ 2,500.00	$ 50,000.00
7097001	Precast Concrete Boardwalk	Ft	130	$ 1,750.00	$ 227,500.00
7117001	Railing Miscellaneous	Ft	260	$ 100.00	$ 26,000.00

SUBTOTAL FOR CATEGORY 1 - Miscellaneous	$ 275,000.00
SUBTOTAL FOR CATEGORY 2 - Bridge Removal and Structural	$ 1,237,500.00
SUBTOTAL FOR CATEGORY 3 - Prefabricated Truss Bridge	$ 1,250,000.00
SUBTOTAL FOR CATEGORY 5 - Boardwalk Approach	$ 303,500.00
SUBTOTAL CONSTRUCTION COST =	**$ 3,066,000.00**
CONSTRUCTION CONTINGENCY (15%) =	**$ 460,000.00**
PRELIMINARY AND CONSTRUCTION ENGINEERING (25%) =	**$ 767,000.00**
TOTAL OPINION OF PROBABLE CONSTRUCTION COST =	**$ 4,293,000.00**

OPINION OF PROBABLE CONSTRUCTION COST

ORCHARD, HILTZ & McCLIMENT, INC.
34000 Plymouth Road, Livonia, Michigan, 48150
Telephone: (734) 522-6711 FAX: (734) 466-4557

PROJECT:	South Barton Bridge Replacement	DATE:	November 25, 2025
LOCATION:	Ann Arbor, Michigan	PROJECT #:	0028-25-0030
WORK:	Pedestrian Bridge Replacement	ESTIMATOR:	KDF
	Prefabricated Truss Bridge with Southern Viewpoint	CHECKED BY:	CJE
		CURRENT ENR:	

ITEM CODE	DESCRIPTION	UNIT	TOTAL	UNIT PRICE	COST
	CATEGORY 1 - Miscellaneous				
1100001	Mobilization, Max	LSUM	1	$ 275,000.00	$ 275,000.00
	CATEGORY 2 - Bridge Replacement				
2040060	Structures, Rem	LSUM	1	$ 215,000.00	$ 215,000.00
2060002	Backfill, Structure, CIP	Cyd	25	$ 50.00	$ 1,250.00
2060010	Excavation, Fdn	Cyd	150	$ 35.00	$ 5,250.00
7040007	Cofferdams	LSUM	1	$ 15,000.00	$ 15,000.00
7060092	Reinforcement, Steel, Epoxy Coated	Lb	7000	$ 50.00	$ 350,000.00
7060100	Substructure Conc	Cyd	38	$ 1,000.00	$ 38,000.00
7062001	Conc, Grade 3500	Cyd	11	$ 1,000.00	$ 11,000.00
7062003	Conc, Grade 4500	Cyd	80	$ 1,150.00	$ 92,000.00
7140001	Structures, Temp	LSUM	1	$ 500,000.00	$ 500,000.00
7140002	Structures, Temp, Rem	LSUM	1	$ 10,000.00	$ 10,000.00
	CATEGORY 3 - Prefabricated Truss Bridge				
7070081	Steel Pedestrian Bridge, Type 2, Furn and Fab	LSUM	1	$ 1,000,000.00	$ 1,000,000.00
7070086	Steel Pedestrian Bridge, Type 2, Erect	LSUM	1	$ 250,000.00	$ 250,000.00
	CATEGORY 6 - Southern Viewpoint				
2060002	Backfill, Structure, CIP	Cyd	1850	$ 45.00	$ 83,250.00
7067010	Modular Block Retaining Wall	Sft	2400	$ 95.00	$ 228,000.00
7117001	Railing Miscellaneous	Ft	290	$ 100.00	$ 29,000.00
8060020	Shared use Path, Conc	Syd	415	$ 100.00	$ 41,500.00

SUBTOTAL FOR CATEGORY 1 - Miscellaneous	$ 275,000.00
SUBTOTAL FOR CATEGORY 2 - Bridge Removal and Structural	$ 1,237,500.00
SUBTOTAL FOR CATEGORY 3 - Prefabricated Truss Bridge	$ 1,250,000.00
SUBTOTAL FOR CATEGORY 6 - Southern Viewpoint	$ 381,750.00
SUBTOTAL CONSTRUCTION COST =	**$ 3,144,000.00**
CONSTRUCTION CONTINGENCY (15%) =	**$ 472,000.00**
PRELIMINARY AND CONSTRUCTION ENGINEERING (25%) =	**$ 786,000.00**
TOTAL OPINION OF PROBABLE CONSTRUCTION COST =	**$ 4,402,000.00**

OPINION OF PROBABLE CONSTRUCTION COST

ORCHARD, HILTZ & McCLIMENT, INC.
34000 Plymouth Road, Livonia, Michigan, 48150
Telephone: (734) 522-6711 FAX: (734) 466-4557

PROJECT:	South Barton Bridge Replacement	DATE:	November 25, 2025
LOCATION:	Ann Arbor, Michigan	PROJECT #:	0028-25-0030
WORK:	Pedestrian Bridge Replacement	ESTIMATOR:	KDF
	Continuous Steel Beam Bridge with Overlook & Boardwalk Approach	CHECKED BY:	CJE
		CURRENT ENR:	

ITEM CODE	DESCRIPTION	UNIT	TOTAL	UNIT PRICE	COST
	CATEGORY 1 - Miscellaneous				
1100001	Mobilization, Max	LSUM	1	$ 275,000.00	$ 275,000.00
	CATEGORY 2 - Bridge Replacement				
2040060	Structures, Rem	LSUM	1	$ 215,000.00	$ 215,000.00
2060002	Backfill, Structure, CIP	Cyd	25	$ 50.00	$ 1,250.00
2060010	Excavation, Fdn	Cyd	150	$ 35.00	$ 5,250.00
7040007	Cofferdams	LSUM	1	$ 15,000.00	$ 15,000.00
7060092	Reinforcement, Steel, Epoxy Coated	Lb	7000	$ 50.00	$ 350,000.00
7060100	Substructure Conc	Cyd	38	$ 1,000.00	$ 38,000.00
7062001	Conc, Grade 3500	Cyd	11	$ 1,000.00	$ 11,000.00
7062003	Conc, Grade 4500	Cyd	80	$ 1,150.00	$ 92,000.00
7140001	Structures, Temp	LSUM	1	$ 500,000.00	$ 500,000.00
7140002	Structures, Temp, Rem	LSUM	1	$ 10,000.00	$ 10,000.00
	CATEGORY 4 - Continuous Steel Beam Bridge				
7070070	Structural Steel, Rolled Shape, Erect	Lb	158720	$ 3.00	$ 476,160.00
7070071	Structural Steel, Rolled Shape, Furn and Fab	Lb	158720	$ 7.50	$ 1,190,400.00
7077010	Viewing Platform	Sft	120	$ 470.00	$ 56,400.00
	CATEGORY 5 - Boardwalk Approach				
7057050	Steel Helical Pier	Ea	20	$ 2,500.00	$ 50,000.00
7097001	Precast Concrete Boardwalk	Ft	130	$ 1,750.00	$ 227,500.00
7117001	Railing Miscellaneous	Ft	260	$ 100.00	$ 26,000.00

SUBTOTAL FOR CATEGORY 1 - Miscellaneous	$ 275,000.00
SUBTOTAL FOR CATEGORY 2 - Bridge Removal and Structural	$ 1,237,500.00
SUBTOTAL FOR CATEGORY 4 - Continuous Steel Beam Bridge	$ 1,722,960.00
SUBTOTAL FOR CATEGORY 5 - Boardwalk Approach	$ 303,500.00
SUBTOTAL CONSTRUCTION COST =	**$ 3,539,000.00**
CONSTRUCTION CONTINGENCY (15%) =	**$ 531,000.00**
PRELIMINARY AND CONSTRUCTION ENGINEERING (25%) =	**$ 885,000.00**
TOTAL OPINION OF PROBABLE CONSTRUCTION COST =	**$ 4,955,000.00**

OPINION OF PROBABLE CONSTRUCTION COST

ORCHARD, HILTZ & McCLIMENT, INC.
34000 Plymouth Road, Livonia, Michigan, 48150
Telephone: (734) 522-6711 FAX: (734) 466-4557

PROJECT:	South Barton Bridge Replacement	DATE:	November 25, 2025
LOCATION:	Ann Arbor, Michigan	PROJECT #:	0028-25-0030
WORK:	Pedestrian Bridge Replacement	ESTIMATOR:	KDF
	Continuous Steel Beam Bridge with Southern Viewpoint	CHECKED BY:	CJE
		CURRENT ENR:	

ITEM CODE	DESCRIPTION	UNIT	TOTAL	UNIT PRICE	COST
	CATEGORY 1 - Miscellaneous				
1100001	Mobilization, Max	LSUM	1	$ 275,000.00	$ 275,000.00
	CATEGORY 2 - Bridge Replacement				
2040060	Structures, Rem	LSUM	1	$ 215,000.00	$ 215,000.00
2060002	Backfill, Structure, CIP	Cyd	25	$ 50.00	$ 1,250.00
2060010	Excavation, Fdn	Cyd	150	$ 35.00	$ 5,250.00
7040007	Cofferdams	LSUM	1	$ 15,000.00	$ 15,000.00
7060092	Reinforcement, Steel, Epoxy Coated	Lb	7000	$ 50.00	$ 350,000.00
7060100	Substructure Conc	Cyd	38	$ 1,000.00	$ 38,000.00
7062001	Conc, Grade 3500	Cyd	11	$ 1,000.00	$ 11,000.00
7062003	Conc, Grade 4500	Cyd	80	$ 1,150.00	$ 92,000.00
7140001	Structures, Temp	LSUM	1	$ 500,000.00	$ 500,000.00
7140002	Structures, Temp, Rem	LSUM	1	$ 10,000.00	$ 10,000.00
	CATEGORY 4 - Continuous Steel Beam Bridge				
7070070	Structural Steel, Rolled Shape, Erect	Lb	158720	$ 3.00	$ 476,160.00
7070071	Structural Steel, Rolled Shape, Furn and Fab	Lb	158720	$ 7.50	$ 1,190,400.00
	CATEGORY 6 - Southern Viewpoint				
2060002	Backfill, Structure, CIP	Cyd	1850	$ 45.00	$ 83,250.00
7067010	Modular Block Retaining Wall	Sft	2400	$ 95.00	$ 228,000.00
7117001	Railing Miscellaneous	Ft	290	$ 100.00	$ 29,000.00
8060020	Shared use Path, Conc	Syd	415	$ 100.00	$ 41,500.00

SUBTOTAL FOR CATEGORY 1 - Miscellaneous	$ 275,000.00
SUBTOTAL FOR CATEGORY 2 - Bridge Removal and Structural	$ 1,237,500.00
SUBTOTAL FOR CATEGORY 4 - Continuous Steel Beam Bridge	$ 1,666,560.00
SUBTOTAL FOR CATEGORY 6 - Southern Viewpoint	$ 381,750.00
SUBTOTAL CONSTRUCTION COST =	**$ 3,561,000.00**
CONSTRUCTION CONTINGENCY (15%) =	**$ 534,000.00**
PRELIMINARY AND CONSTRUCTION ENGINEERING (25%) =	**$ 890,000.00**
TOTAL OPINION OF PROBABLE CONSTRUCTION COST =	**$ 4,985,000.00**

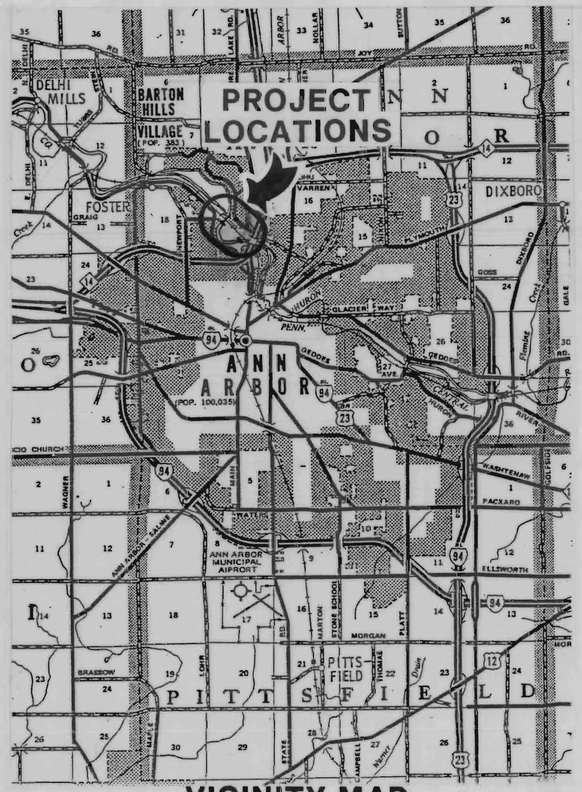
Appendix D – Existing Bridge Drawings

FOR PROTECTION OF UNDERGROUND UTILITIES, THE CONTRACTOR SHALL DIAL 1-800-482-7171 A MINIMUM OF 72 HOURS PRIOR TO EXCAVATING IN THE VICINITY OF UTILITY LINES. ALL "MISS DIG" MEMBERS WILL THUS BE NOTIFIED. THIS DOES NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO NOTIFY UTILITY OWNERS WHO ARE NOT PART OF THE "MISS DIG" ALERT SYSTEM.

PARKS AND RECREATION DEPARTMENT

PLAN AND PROFILE OF PROPOSED BRIDGES "A" & "B" IN BARTON PARK OVER THE HURON RIVER

CITY OF ANN ARBOR PROJECT No. 2098



VICINITY MAP

STANDARD PLANS, NOT TO BE PRINTED	
SHEET No.	DESCRIPTION
V-96C	SOIL EROSION AND SEDIMENTATION CONTROL DEVICES.
XI-103C	MOLDING, BEVEL, LIGHT STANDARD ANCHOR BOLT ASSEMBLY AND NAME PLATE DETAILS.

N

KEY TO COUNTIES

PLAN INDEX		
SHEET No.	BRIDGE "A"	DESCRIPTION
1		TITLE SHEET
2		PLAN OF SITE
3		PLAN OF STRUCTURE
4		ABUTMENT & PIER DETAILS
5		QUANTITIES SHEET
		BRIDGE "B"
2		PLAN OF SITE
3		PLAN OF STRUCTURE
4		ABUTMENT DETAILS
5		PIER DETAILS
6		QUANTITIES SHEET

NOTES:

EXCEPT WHERE OTHERWISE INDICATED ON THESE PLANS OR IN THE PROPOSAL AND SUPPLEMENTAL SPECIFICATIONS CONTAINED HEREIN, ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE MICHIGAN DEPARTMENT OF STATE HIGHWAYS AND TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 1984 EDITION.

THE SOIL BORING LOGS REPRESENT POINT INFORMATION. PRESENTATION OF THIS INFORMATION IN NO WAY INFERS THAT SUBSURFACE CONDITIONS ARE THE SAME AT LOCATIONS OTHER THAN THE EXACT LOCATION OF THE BORING.

ALL EXPOSED CONCRETE CORNERS SHOWN SQUARE ON THE PLANS SHALL BE BEVELED WITH 1/2" TRIANGULAR MOLDINGS EXCEPT AS OTHERWISE NOTED.

THE DESIGN OF THE STRUCTURAL MEMBERS IS BASED ON MATERIAL OF THE FOLLOWING GRADES AND STRESSES:

CONCRETE: GRADE 35S, 35T	f'c = 3,000 P.S.I.
STEEL REINFORCEMENT	fy = 60,000 P.S.I.
STRUCTURAL STEEL	fy = 50,000 P.S.I.

DATUM REFERS TO U.S.G.S. DATUM.

THE CONTRACTOR IS TO EXERCISE CARE TO AVOID EXCESSIVE SILTING OF RIVER DURING CONSTRUCTION. PROVISIONS WILL BE MADE FOR CONTROL OF EROSIONS BY MEANS OF SEEDING, SODDING OR OTHER ACCEPTABLE METHOD ALLOWED BY D.N.R. PERMIT.

WATER LEVEL IS SUBJECT TO CHANGE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION OF WATER LEVELS THAT WILL EXIST DURING CONSTRUCTION.

CITY OF ANN ARBOR

PROJECT No. BID NO. 2098
ROAD

CONTRACT FOR PEDESTRIAN BRIDGES IN BARTON PARK OVER THE HURON RIVER

APPROVED

RONALD A. OLSON, SUPERINTENDENT
CITY OF ANN ARBOR
DEPARTMENT OF PARKS AND RECREATION

DATE

CAROLYN MATHESON, PARK PLANNER CMM — DATE 3-6-91

DATE

REVISIONS	
DESCRIPTION	DATE

PLANS PREPARED BY:
SPALDING, DeDECKER & ASSOCIATES, INC.
ENGINEERS SURVEYORS
MADISON HEIGHTS, MICHIGAN PHONE: (313) 585-5545

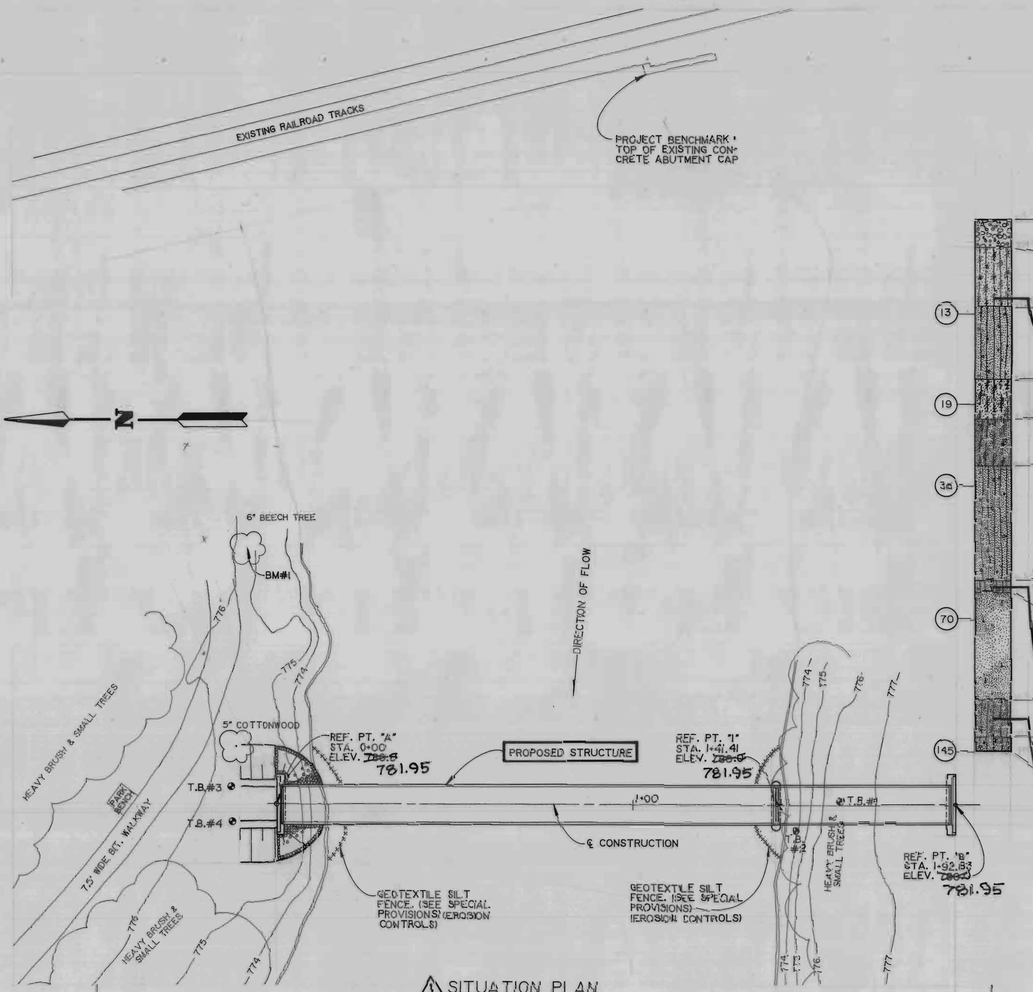
STATE OF MICHIGAN — PAUL C. WADE — No. 25822 — REGISTERED PROFESSIONAL ENGINEER

PAUL C. WADE
PROJECT MANAGER

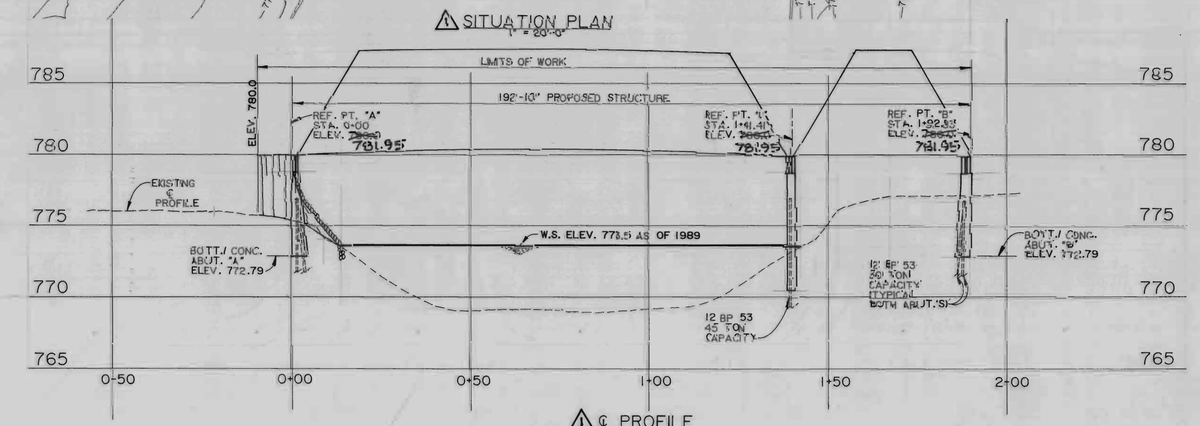
25822
REGISTRATION No.

S.D.A. JOB No. MC89-06

JOB No.	SHEET	TOTAL SHEETS
MC89-06	1	10



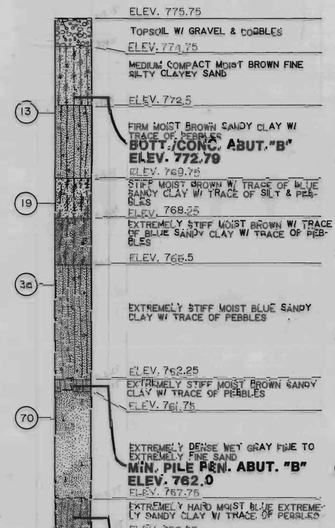
⚠1 SITUATION PLAN
1" = 20'-0"



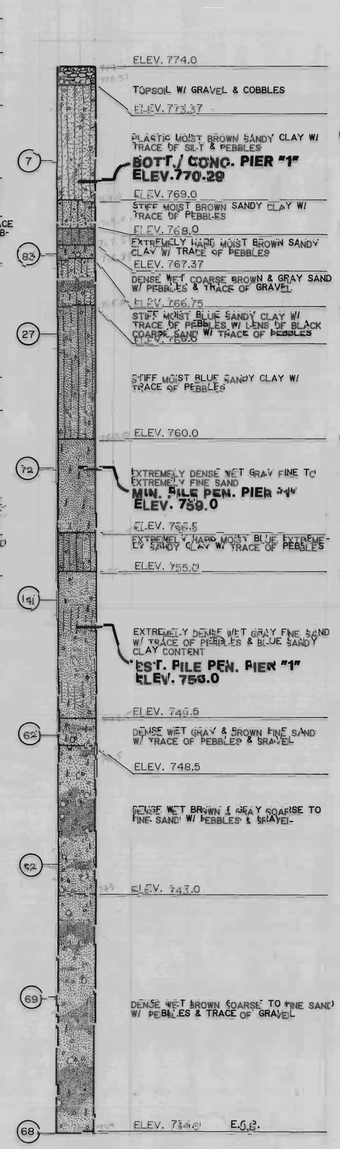
⚠1 ℄ PROFILE
HORZ. 1" = 20'-0"
VERT. 1" = 5'-0"

LOG OF BORINGS

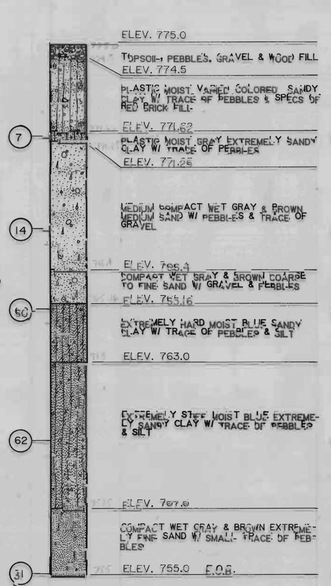
BORING No.1



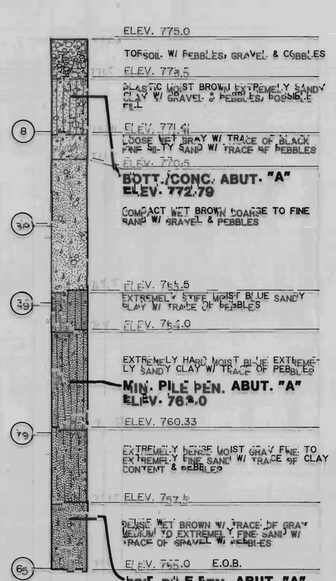
BORING No.2



BORING No.3

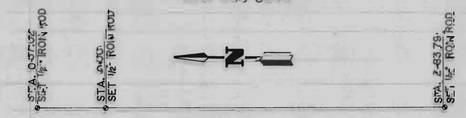


BORING No.4



NOTES:

1. THE NUMBERS SHOWN IN CIRCLES IN THE BORING LOG COLUMN INDICATE THE NUMBER OF BLOWS PER 12" DELIVERED BY A 140 POUND HAMMER FALLING 30" ON A 2" OUTSIDE DIAMETER SPLIT BARREL SAMPLER.
2. THE SOIL BORING LOGS REPRESENT POINT INFORMATION. PRESENTATION OF THIS INFORMATION IN NO WAY INFERS THAT SUBSURFACE CONDITIONS ARE THE SAME AT LOCATIONS OTHER THAN AT THE EXACT LOCATIONS OF THE BORINGS. (SEE SITE PLAN FOR LOCATIONS)
3. SOIL BORINGS BY: TESTING ENGINEERS & CONSULTANTS, INC.
   P.O. BOX 249
   1343 ROCHESTER ROAD
   TROY, MICHIGAN 48099
   (313) 528-6200



HORIZONTAL CONTROL

WITNESSES TO STA. 0+00	
S. 182°8'49" N.E., 43.96'	N.E. CORNER EAST OF PARK BENCH
S. 11°2'5" W., 47.06'	P.K. NAIL IN EAST FACE OF 6" TREE
S. 255°39'10", 77.22'	BENCH MARK #1

BENCH MARKS	
BENCH MARK, PROJECT	TOP N.W. CORNER OF CONCRETE RAILROAD END OF ABUTMENT ON WEST SIDE OF TRACKS ON SOUTH SIDE OF RIVER. ELEV. 776.97
BENCH MARK #1	P.K. NAIL IN WEST SIDE OF TREE, 25± NORTH OF NORTH BANK, 75± EAST OF CONST. ELEV. 778.34

	BY:	DATE:
APPROVED., FIELD		
APPROVED., OFFICE	BY:	DATE:
AWARDED	CONTRACTOR	DATE:

NO.	DATE	REVISION
⚠1	6-7-91	CHANGES DUE TO SHOP DRAWINGS

NO.	DATE	REVISION
LAST		RECORD MEASUREMENTS ADDED TO DRAWING

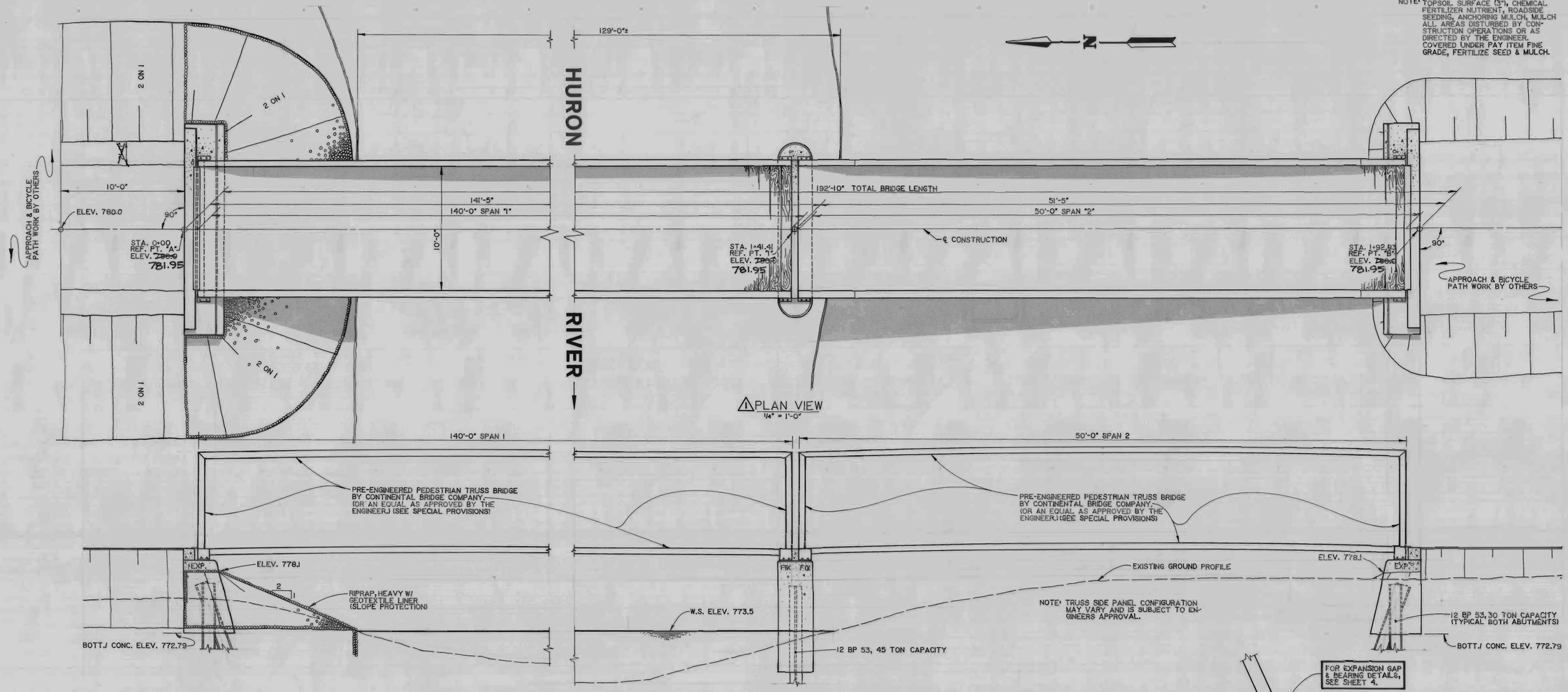
"VERIFY SCALES" BAR IS ONE INCH ON ORIGINAL DRAWING IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

SPALDING, DeDECKER & ASSOCIATES, INC.
ENGINEERS
SURVEYORS
MADISON HEIGHTS, MICHIGAN
PHONE: (313) 585-8845

DRAWN	J. REYNOLDS
CHECKED	R. DORTMANN
PROJECT MANAGER	P. WADE
DATE	12-10-90
DATE BID PLAN DATE	12-13-90

CITY OF ANN ARBOR, DEPT. OF PARKS & RECREATION
BARTON PARK BRIDGE "A"
OVER THE HURON RIVER
PLAN OF SITE

JOB NO:	MC55-06
SCALE:	AS NOTED
DRAWING NO:	
SHEET NO.	2 OF 5

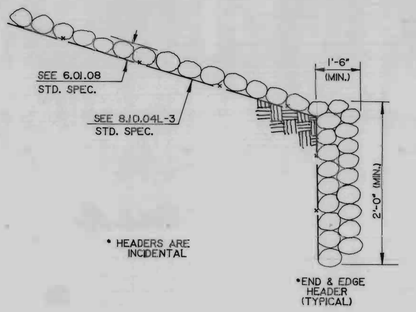


1 PLAN VIEW
1/4" = 1'-0"

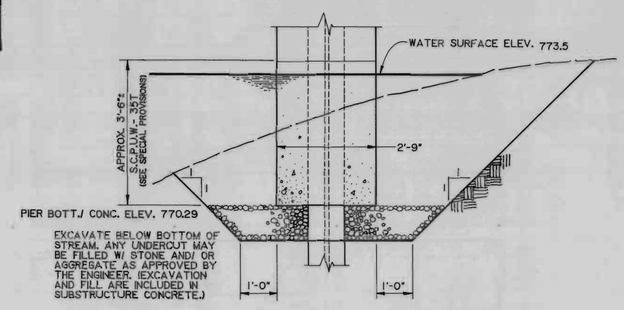
2 ELEVATION
1/4" = 1'-0"

SPAN	APPROX. TRUSS WT.
1	39.0 TONS*
2	7.0 TONS*

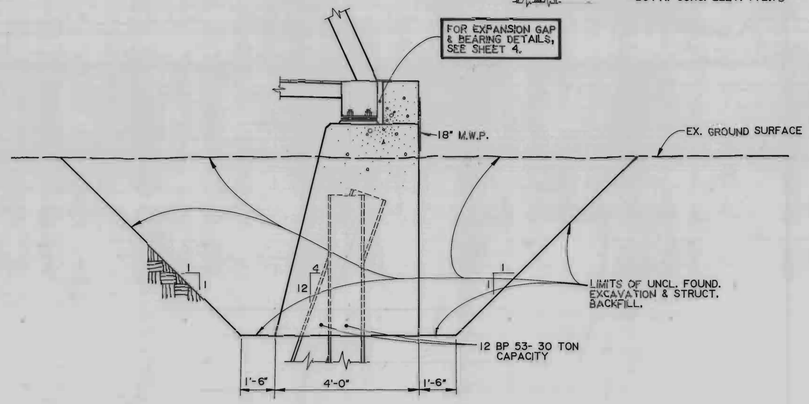
* FOR INFORMATION ONLY, WEIGHT MAY VARY WITH MANUFACTURER.



3 RIPRAP DETAIL
NO SCALE.



4 PIER SECTION
1/2" = 1'-0"



5 ABUTMENT SECTION
1/2" = 1'-0"

APPROVED, FIELD	BY:	DATE:
APPROVED, OFFICE	BY:	DATE:
AWARDED	CONTRACTOR	DATE:

NO.	DATE	REVISION
1	6-7-91	CHANGES DUE TO SHOP DRAWINGS

NO.	DATE	REVISION

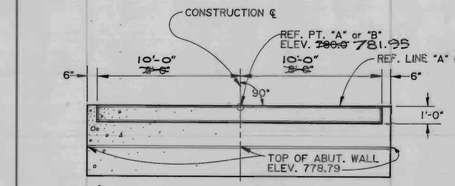
VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST

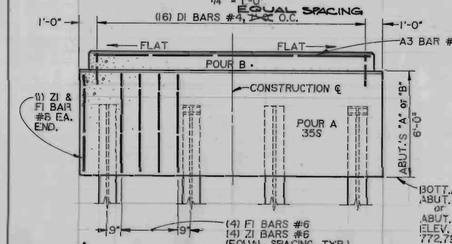
SPALDING, DeDECKER & ASSOCIATES, INC.
ENGINEERS SURVEYORS
MADISON HEIGHTS, MICHIGAN
PHONE: (313) 585-5545

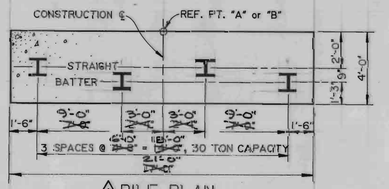
DRAWN	DATE
J. REYNOLDS	12-10-90
CHECKED	DATE
R. DORTMANN RJD	12-13-90
PROJECT MANAGER	BID PLAN DATE
R. DORTMANN	

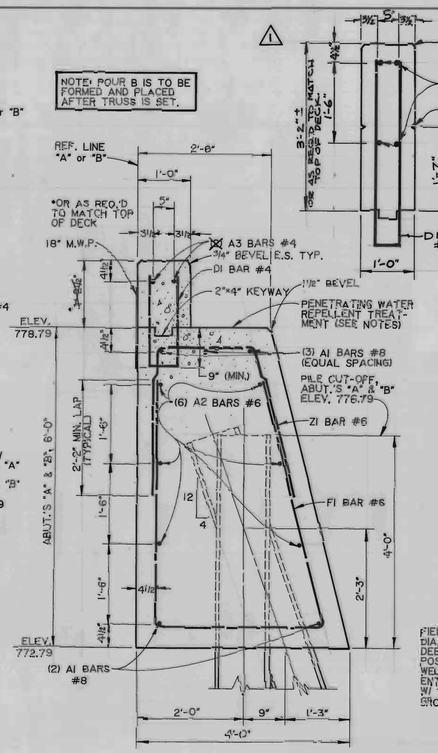
CITY OF ANN ARBOR, DEPT. OF PARKS & RECREATION
BARTON PARK BRIDGE "A"
OVER THE HURON RIVER
PLAN OF SITE

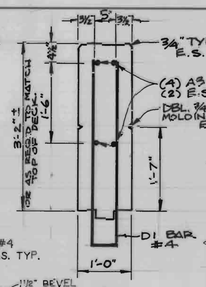
JOB NO.	DRAWING NO.
MC89-06	
SCALE:	SHEET NO.
AS NOTED	3 OF 5

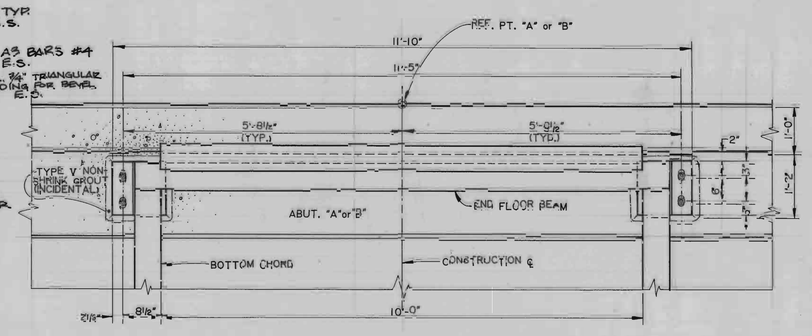


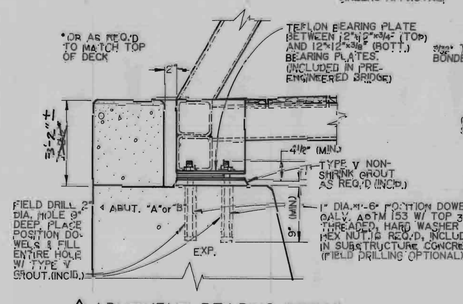


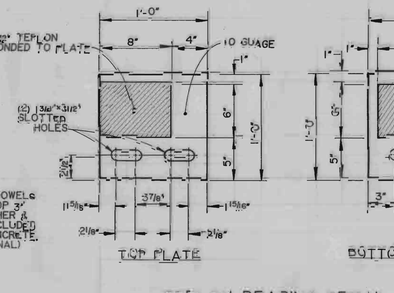


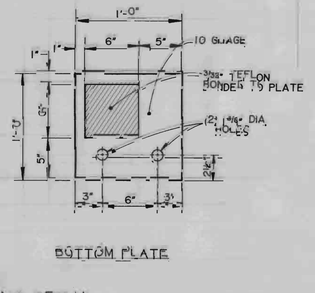


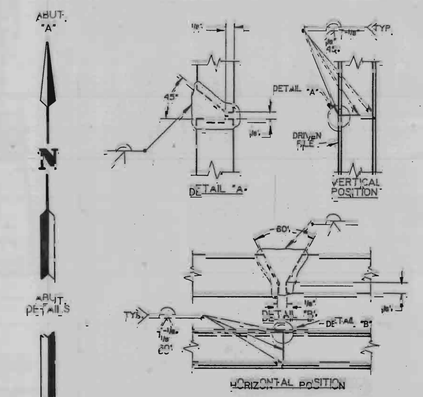












ABUTMENT DETAILS

PIER DETAILS

12 BP 53 SPLICE OPTIONS

MISCELLANEOUS QUANTITIES					
	UNIT	ABUT. "A"	ABUT. "B"	PIER "1"	TOTAL
MEMBRANE WATERPROOFING	Sq.Ft.	25.5	25.5		51.0
PENETRATING WATER REPELLENT TREATMENT	Sq.Yd.'s	5.0	5.0	4.0	14.0

STEEL PILES (12 BP 53) (QUANTITIES)					
LOCATION	TYPE	REQ.'D	EST. LTH.	UNIT	AMOUNT
ABUT. "A"	VERTICAL	2	20	L.F.	40
ABUT. "A"	BATTER	2	20	L.F.	40
ABUT. "B"	VERTICAL	2	20	L.F.	40
ABUT. "B"	BATTER	2	20	L.F.	40
PIER "1"	VERTICAL	1	24	L.F.	24
PIER "1"	BATTER	2	24	L.F.	48
STEEL PILES, FURNISHED AND DRIVEN				L.F.	232.0
SPLICES, STEEL PILES				EACH	6.0
FURNISHING EQUIPMENT FOR DRIVING PILES				LUMP SUM	1.0

⚠ SUBSTRUCTURE CONCRETE (35S)				
	UNIT	ABUT. "A"	ABUT. "B"	PIER "1"
POUR A	CuYd.'s	~~12.0~~ 15.0	~~12.0~~ 15.0	
POUR B	CuYd.'s	~~7.0~~ 2.5	~~7.0~~ 2.5	7.0
TOTAL	CuYd.'s	~~19.0~~ 17.5	~~19.0~~ 17.5	7.0

⚠ ~~*PIER DIAPHRAM IS EST. @ .25 CuYd.'s AND IS INCLUDED IN THE PAY ITEM PRE-ENGINEERED TRUSS BRIDGE, ERECTED.~~

SUBSTRUCTURE CONCRETE (PLACED UNDERWATER, 35T)				
	UNIT	ABUT. "A"	ABUT. "B"	PIER "1"
POUR A	CuYd.'s			5.0
TOTAL	CuYd.'s			5.0

NOTES:

PILES TO BE DRIVEN WITH SUCH ACCURACY THAT THE ENDS OF THE PILES TO BE EMBEDDED ARE WITHIN 3" OF THE LOCATION SHOWN ON THE PLANS.

FOR BEVEL AND MOLDING DETAILS, SEE STANDARD PLAN XI-13C.

MINIMUM PENETRATION MUST BE REACHED REGARDLESS OF THE STANDARD SPECIFICATION REQUIREMENTS OF ABSOLUTE REFUSAL. ANY JETTING, PREBORING OR OVERDRIVING REQUIRED TO REACH MINIMUM PENETRATION WILL BE PART OF THE UNIT PRICE PER FOOT OF PILES, FURNISHED AND DRIVEN. FOR PILE PENETRATION, SEE SHEET 2.

F.S. DENOTES FAR SIDE.

N.S. DENOTES NEAR SIDE.

E.S. DENOTES EACH SIDE.

M.W.P. DENOTES MEMBRANE WATERPROOFING.

ALL PIER PILINGS SHALL BE DRIVEN TO A MINIMUM BEARING CAPACITY OF 45 TONS. ALL ABUTMENT PILING SHALL BE DRIVEN TO A MINIMUM BEARING CAPACITY OF 30 TONS. STEEL PILINGS SHALL BE 12 BP 53.

THE TOP OF PIER AND ABUTMENTS SHALL BE GIVEN AN APPLICATION OF PENETRATING WATER REPELLENT PRIOR TO PLACING BEARING PLATES.

APPROVED, FIELD	BY:	DATE:
APPROVED, OFFICE	BY:	DATE:
AWARDED	CONTRACTOR	DATE:

NO.	DATE	REVISION
⚠1	6-7-91	CHANGES DUE TO SHOP DRAWINGS

NO.	DATE	REVISION
LAST		RECORD MEASUREMENTS ADDED TO DRAWING

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

SPALDING, DeDECKER & ASSOCIATES, INC.
ENGINEERS SURVEYORS
MADISON HEIGHTS, MICHIGAN PHONE: (313) 585-5545

DRAWN J. REYNOLDS	DATE 12-7-89
CHECKED R. DORTMANN	DATE 12-13-89
PROJECT MANAGER D. WADE	BID PLAN DATE

CITY OF ANN ARBOR, DEPT. OF PARKS & RECREATION
BARTON PARK BRIDGE "A"
OVER THE HURON RIVER
ABUTMENT AND PIER DETAILS

JOB NO. MC89-06	DRAWING NO.
SCALE: AS NOTED	SHEET NO. 4 OF 5

APPROACHES

ITEM	UNIT	AMOUNT

NONE THIS PROJECT

STEEL REINFORCEMENT- EPOXY COATED

MARK	DIMENSIONS A	B	C	D	E	F	G	H	SIZE	LENGTH	No. REQ'D	TOTAL WEIGHT

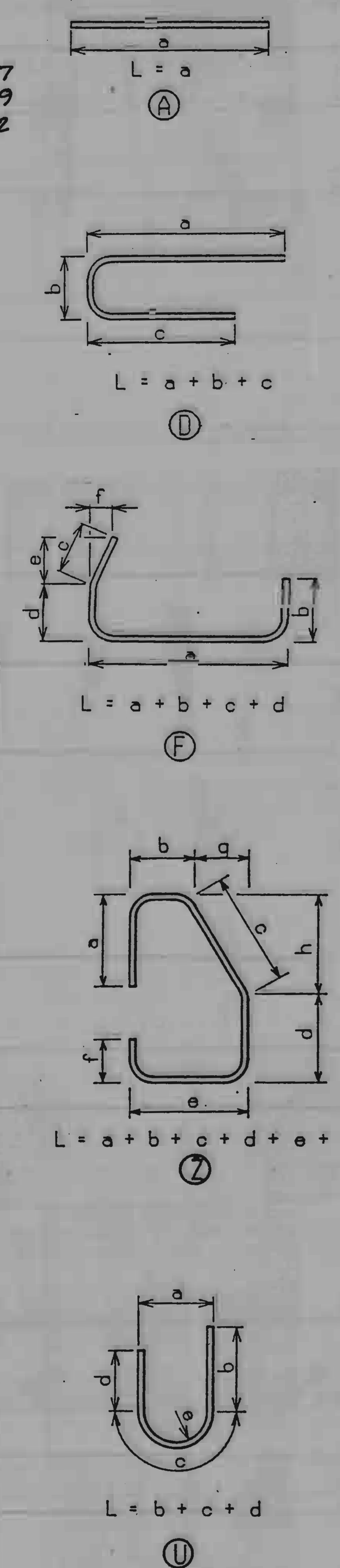
NONE THIS PROJECT

TOTAL REINFORCEMENT- EPOXY COATED

⚠ STEEL REINFORCEMENT

MARK	DIMENSIONS A	B	C	D	E	F	G	H	SIZE	LENGTH	No. REQ'D	TOTAL WEIGHT
A1	~~16'-3"~~ 20'-6"								8	20'-6" ~~16'-3"~~	10	~~434~~ 547
A2	~~15'-3"~~ 20'-6"								6	20'-6" ~~15'-3"~~	12	~~285~~ 369
A3	~~15'-3"~~ 19'-0"			PARAPET					4	19'-0" ~~15'-3"~~	~~?~~ 8	~~31~~ 102
~~A4~~	~~10'-3"~~			DIAPHRAM		ELIMINATE			~~4~~	~~10'-3"~~	~~2~~	~~14~~
~~A5~~	~~1'-10"~~								~~4~~	~~1'-10"~~	~~11~~	~~13~~
D1	~~1'-11"~~ 3'-9"	0'-5"	~~1'-11"~~ 3'-9"	PARAPET					4	~~4'-3"~~ 7'-11"	32	~~90~~ 169
F1	3'-4"	4'-9"	5'-0"		4'-11"	1'-3"			6	13'-1"	28	550
Z1	3'-0"	2'-0"	2'-9"				0'-10"	2'-8"	6	7'-9"	28	326
A51	11'-3"								8	11'-3"	5	150
A52	11'-3"								6	11'-3"	10	169
A53	7'-9"							PIER	6	7'-9"	2	23
D51	7'-9"	2'-0"	7'-9"						4	17'-6"	9	105
U51	2'-0½"	1'-11⅝"	3'-0¾"	1'-11⅝"	0'-11¾"				4	7'-0"	14	65

TOTAL STEEL REINFORCEMENT ~~2273 lb's~~ 2,577 lb.'s



BRIDGE

ITEM	UNIT	AMOUNT
CLEARING	SqYd.'s	400
UNCLASSIFIED FOUNDATION EXCAVATION	CuYd.'s	70
STRUCTURE BACKFILL (C.I.P.)	CuYd.'s	70
EROSION CONTROLS	L. SUM	1.0
STEEL PILES FURNISHED & DRIVEN, 12"	L.F.	232
SPLICES, STEEL PILES, 12"	EACH	5
FURNISH EQUIPMENT FOR DRIVING PILES	L. SUM	1
SUBSTRUCTURE CONCRETE	CuYd.'s	34
STEEL REINFORCEMENT	lb.'s	2273
SUBSTRUCTURE CONCRETE PLACED UNDER WATER (S.C.P.U.W.)	CuYd.'s	5
PRE-ENGINEERED PEDESTRIAN TRUSS BRIDGE, FABRICATED & FURNISHED	L. SUM	2
PRE-ENGINEERED PEDESTRIAN TRUSS BRIDGE, ERECTED	L. SUM	2
MEMBRANE WATERPROOFING	SqFt.	51
PENETRATING WATER REPELLENT TREATMENT	SqYd.'s	14
RIPRAP, HEAVY (SLOPE PROTECTION)	SqYd.'s	40
MOBILIZATION	L. SUM	1
FINE GRADING, FERILIZE SEED & MULCH	SqYd.'s	4000
NATURAL AREAS/ STEEP SLOPES	SqYd.'s	500

NON-PARTICIPATING APPROACHES

ITEM	UNIT	AMOUNT

NONE THIS PROJECT

NOTE: CUTTING AND BENDING TOLERANCES ARE AS ESTABLISHED IN THE MANUAL OF STANDARD PRACTICE OF THE CONCRETE REINFORCING STEEL INSTITUTE AND DETAILING MANUAL OF THE AMERICAN CONCRETE INSTITUTE.

APPROVED, FIELD	BY:	DATE:
APPROVED, OFFICE	BY:	DATE:
AWARDED	CONTRACTOR	DATE:

NO.	DATE	REVISION
⚠1	6-7-91	CHANGES DUE TO SHOP DRAWINGS

NO.	DATE	REVISION
LAST		RECORD MEASUREMENTS ADDED TO DRAWING

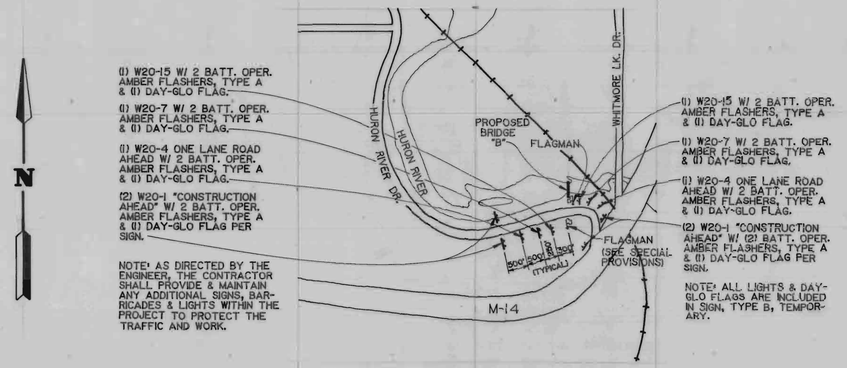
VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

SPALDING, DeDECKER & ASSOCIATES, INC.
ENGINEERS SURVEYORS
MADISON HEIGHTS, MICHIGAN PHONE (313) 585-5545

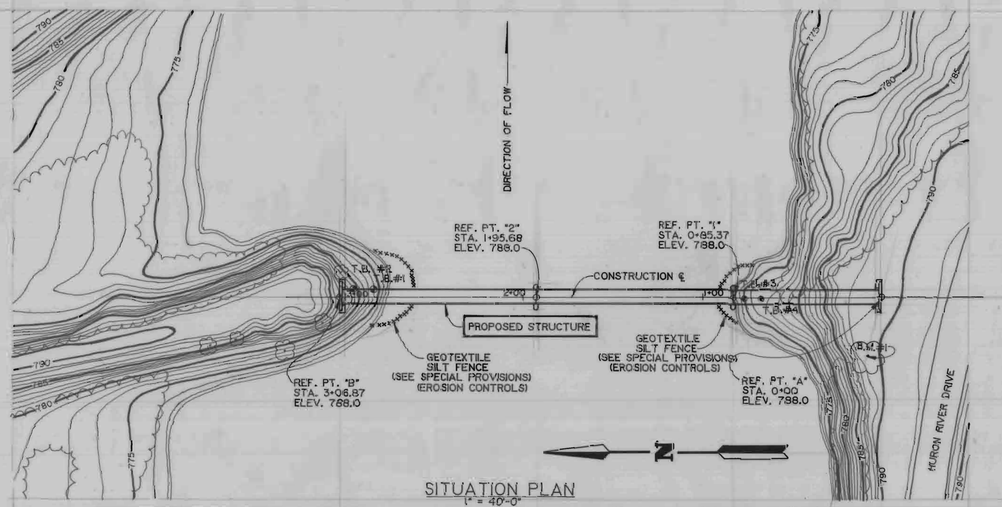
DRAWN J. REYNOLDS DATE 12-11-90
CHECKED R. DORTMANN DATE 12-13-90
PROJECT MANAGER F. WADE BID PLAN DATE

CITY OF ANN ARBOR, DEPT. OF PARKS & RECREATION
BARTON PARK BRIDGE "A"
OVER THE HURON RIVER
QUANTITY SHEET

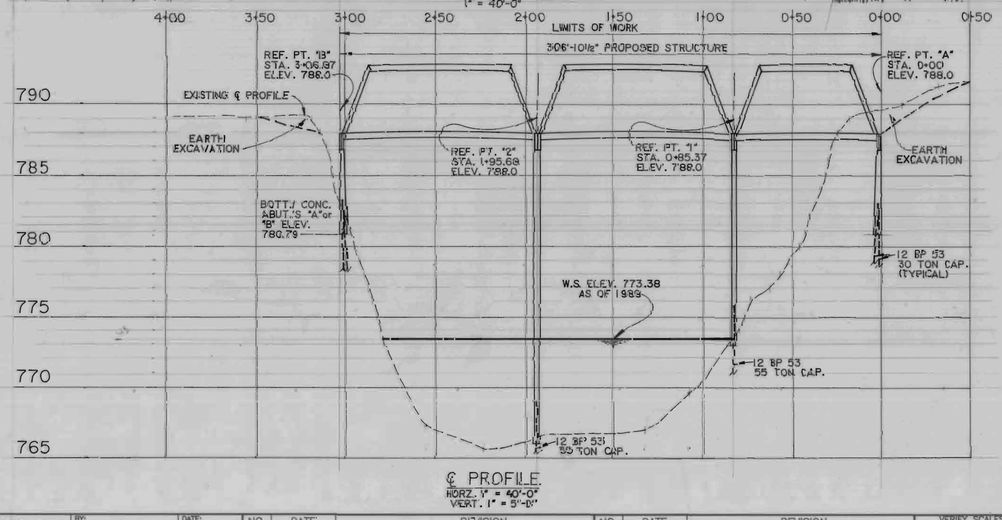
JOB NO. MC89-06
SCALE NONE
SHEET NO. 5 OF 5



CONSTRUCTION SIGNING DIAGRAM
BRIDGE SITE "B"



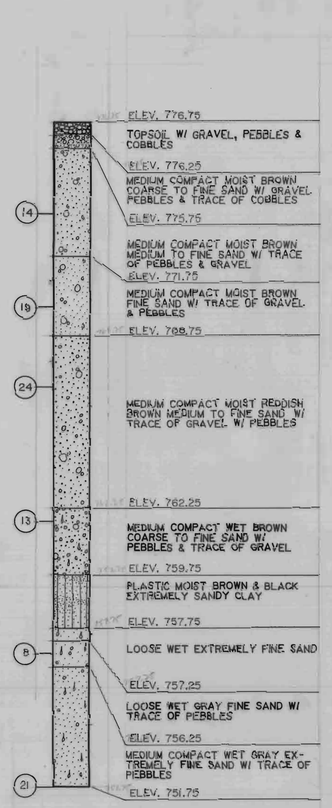
SITUATION PLAN
1" = 40'-0"



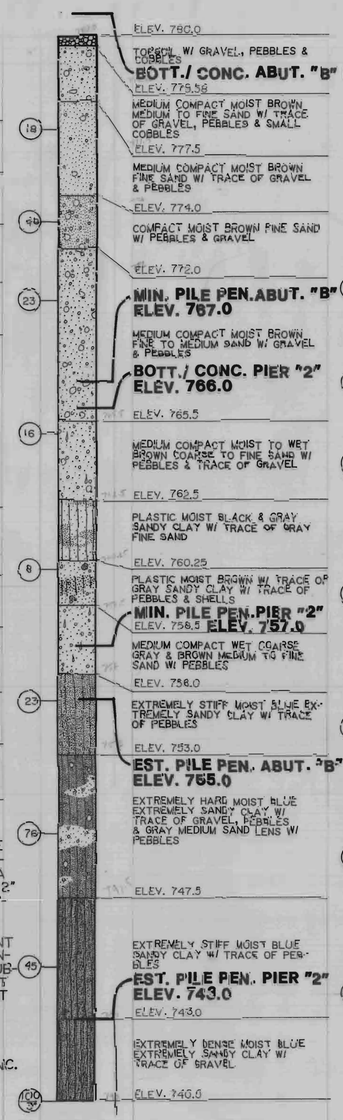
℄ PROFILE
HORZ. 1" = 40'-0"
VERT. 1" = 5'-0"

LOG of BORINGS

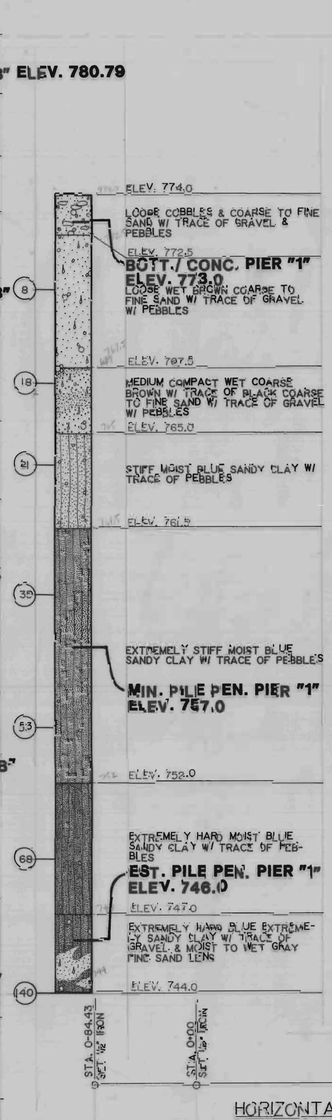
BORING No.1



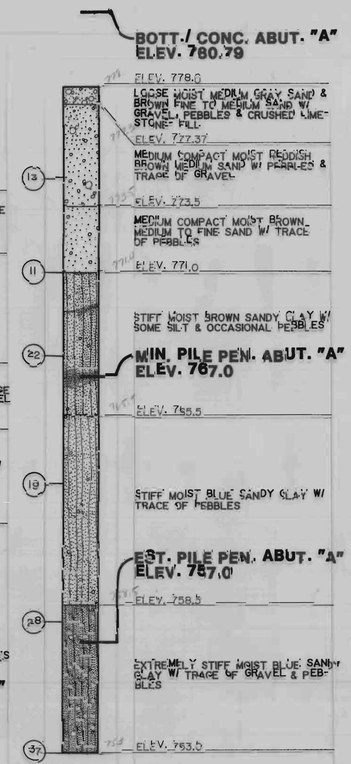
BORING No.2



BORING No.3



BORING No.4



NOTES:

1. THE NUMBERS SHOWN IN CIRCLES IN THE BORING LOG CLLUMN INDICATE THE NUMBER OF BLOWS PER 12" DELIVERED BY A 140 POUND HAMMER FALLING 30" ON A 2" OUTSIDE DIAMETER SPLIT BARREL SAMPLER.
2. THE SOIL BORING LOGS REPRESENT POINT INFORMATION. PRESENTATION OF THIS INFORMATION IN NO WAY INFERS THAT SUBSURFACE CONDITIONS ARE THE SAME AT LOCATIONS OTHER THAN AT THE EXACT LOCATIONS OF THE BORINGS. (SEE SITE PLAN FOR LOCATIONS.)
3. SOIL BORINGS BY:
   TESTING ENGINEERS & CONSULTANTS, INC.
   P.O. BOX 249
   1333 ROCHESTER ROAD
   TROY, MICHIGAN 48099
   (313) 588-6200

HORIZONTAL CONTROL

WITNESSES TO STA. 0+00	
283° 35' 06", 83.75'	BENCH MARK #1
23° 51' 01", 35.47'	P.K. NAIL IN N. SIDE OF 12" ASH (TRIPPLE TRUNK)
186° 43' 01", 85.38'	P.K. NAIL IN E. SIDE OF 8" TREE
BENCH MARKS	
BENCH MARK #1	SPIKE IN S.E. SIDE OF 13" BASS WOOD, ELEV. 789.37

APPROVED, FIELD	BY:	DATE:	NO.	DATE:	REVISION	NO.	DATE.	REVISION	VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY
APPROVED,, OFFICE	BY:	DATE:							
AWARDED	CONTRACTOR	DATE:				LAST		RECORD MEASUREMENTS ADDED TO DRAWING:	

SPALDING, DeDECKER & ASSOCIATES, INC.
ENGINEERS SURVEYORS
MADISON HEIGHTS, MICHIGAN PHONE: (313) 585-5545

DRAWN	J. REYNOLDS	DATE	12-19-90
CHECKING	R. DORYMANN	DATE	1-2-91
PROJECT MANAGER	P. WADE	BID PLAN DATE	

CITY OF ANN ARBOR, DEPT. OF PARKS & RECREATION
BARTON PARK BRIDGE "B"
OVER THE HURON RIVER
PLAN OF SITE

JOB NO.	DRAWING NO.
MC89-06	
SCALE: AS NOTED	SHEET NO. 2 OF 6

NOTE: TOPSOIL SURFACE (3"), CHEMICAL FERTILIZER NUTRIENT, ROADSIDE SEEDING, ANCHORING MULCH, MULCH ALL AREAS DISTURBED BY CONSTRUCTION OPERATIONS OR AS DIRECTED BY THE ENGINEER. (COVERED UNDER FINE GRADING, FERTILIZE SEED & MULCH)

APPROACH & BICYCLE PATH WORK BY OTHERS

306'-10½" TOTAL BRIDGE LENGTH

85'-4½"

84'-0" SPAN "1"

110'-3¾"

110'-0" SPAN "2"

111'-2¼"

110'-0" SPAN "3"

FOR GAP, SEE SHEET 5.

90°

STA. 0+00
REF. PT. "A"
ELEV. 786.79

CONSTRUCTION ℄

40'-8"

STA. 0+85.37
REF. PT. "1"
ELEV. 786.79

STA. 1+95.88
REF. PT. "2"
ELEV. 786.79

STA. 3+06.87
REF. PT. "B"
ELEV. 786.79

APPROACH & BICYCLE PATH WORK BY OTHERS

HURON RIVER

N

PLAN VIEW
3/32" = 1'-0"

84'-0" SPAN "1"

110'-0" SPAN "2"

110'-0" SPAN "3"

PRE-ENGINEERED PEDESTRIAN TRUSS BRIDGE BY CONTINENTAL BRIDGE COMPANY OR AN EQUAL AS APPROVED BY THE ENGINEER. (SEE SPECIAL PROVISIONS.)

PRE-ENGINEERED PEDESTRIAN TRUSS BRIDGE BY CONTENENTAL BRIDGE COMPANY OR AN EQUAL AS APPROVED BY THE ENGINEER. (SEE SPECIAL PROVISIONS)

PRE-ENGINEERED PEDESTRIAN TRUSS BRIDGE BY CONTENENTAL BRIDGE COMPANY OR AN EQUAL AS APPROVED BY THE ENGINEER. (SEE SPECIAL PROVISIONS.)

EXP. FIXED FIXED EXP. FIXED EXP.

BOTT./ CONC. ELEV. 780.79

EXISTING GROUND PROFILE

12 BP 53, 55 TON CAPACITY

W.S. ELEV. 773.38 AS OF 1989

12 BP 53, 55 TON CAPACITY

BOTT./ CONC. ELEV. 780.79

12 BP 53, 30 TON CAPACITY (TYPICAL BOTH ABUTMENTS)

NOTE: TRUSS SIDE PANEL CONFIGURATION MAY VARY AND IS SUBJECT TO ENGINEERS APPROVAL.

SPAN	APPROX. TRUSS WEIGHT
1	12.0 TONS*
2	18.0 TONS*
3	18.0 TONS*

* FOR INFORMATION, ONLY, WEIGHT MAY VARY WITH MANUFACTURER.

ELEVATION
3/32" = 1'-0"

WATER SURFACE ELEV. 773.38

S.C.P.U.W. - 35T (AMOUNT VARIES FROM ABUT. 1 & 2 SEE SHEET 5 FOR QUANTITIES.)

BOTT./ CONC. PIER "1" ELEV. 773.0 PIER "2" ELEV. 766.0

1'-0" 1'-0"

EXCAVATE BELOW BOTTOM OF STREAM, ANY UNDERCUT MAY BE FILLED W/ STONE AND OR AGGREGATE AS APPROVED BY THE ENGINEER. (EXCAVATION AND FILL ARE INCLUDED IN SUBSTRUCTURE CONCRETE.)

PIER SECTION
1/8" = 1'-0"

FOR EXPANSION GAP & BEARING DETAILS, SEE SHEET 4.

18" M.N.P.

EX. GROUND SURFACE

4

12

1

1

LIMITS OF UNCL. FOUND. EXCAVATION & STRUCT. BACKFILL.

BOTT./ CONC. ABUTS "A" & "B" ELEV. 780.79

12 BP 53, 30 TON CAPACITY

1'-6" 4'-0" 1'-6"

ABUTMENT SECTION
1/2" = 1'-0"

APPROVED, FIELD	BY:	DATE:
APPROVED, OFFICE	BY:	DATE:
AWARDED	CONTRACTOR:	DATE:

NO.	DATE	REVISION

NO.	DATE	REVISION
LAST		RECORD MEASUREMENTS ADDED TO DRAWING

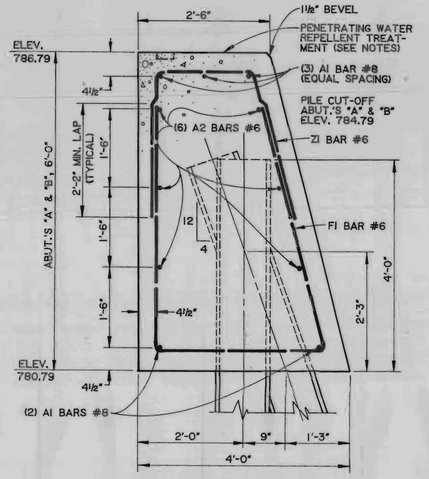
VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

SPALDING, DeDECKER & ASSOCIATES, INC.
ENGINEERS SURVEYORS
MADISON HEIGHTS, MICHIGAN PHONE: (313) 585-6545

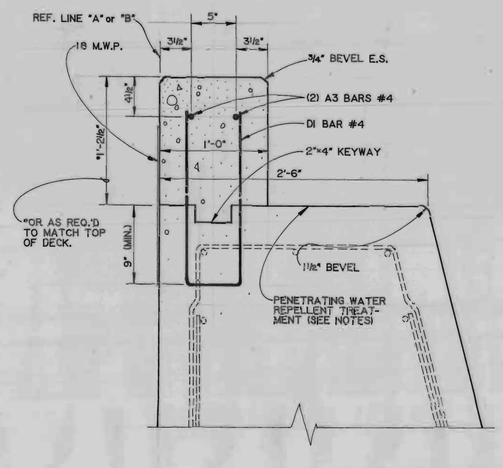
DRAWN	DATE
J. REYNOLDS	12-21-90
CHECKED	DATE
R. DORTMANN	12/21/91
PROJECT MANAGER	BID PLAN DATE
F. WADE	

CITY OF ANN ARBOR, DEPT. OF PARKS & RECREATION
BARTON PARK BRIDGE "B" OVER THE HURON RIVER
PLAN OF STRUCTURE

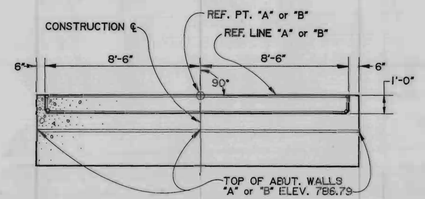
JOB NO.	DRAWING NO.
M89-06	
SCALE: AS NOTED	SHEET NO. 3 OF 6



TYPICAL WALL SECTION
3/4" = 1'-0"

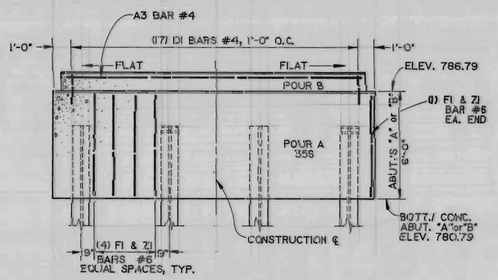


TYPICAL PARAPET SECTION
1½" = 1'-0"

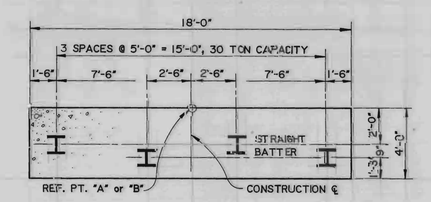


PILE PLAN
1/4" = 1'-0"

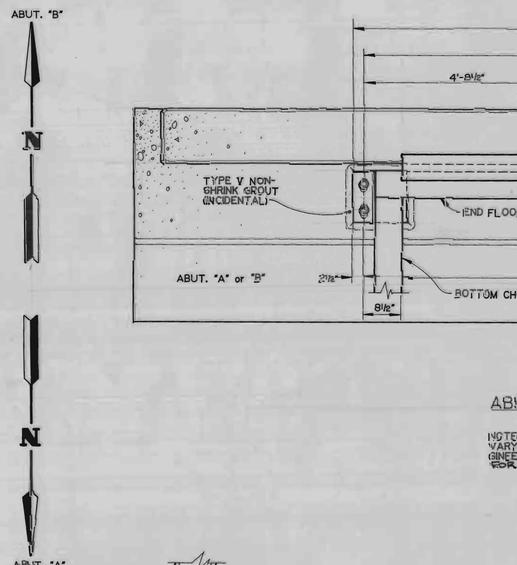
NOTE: POUR B IS TO BE FORMED AND PLACED AFTER TRUSS IS SET.

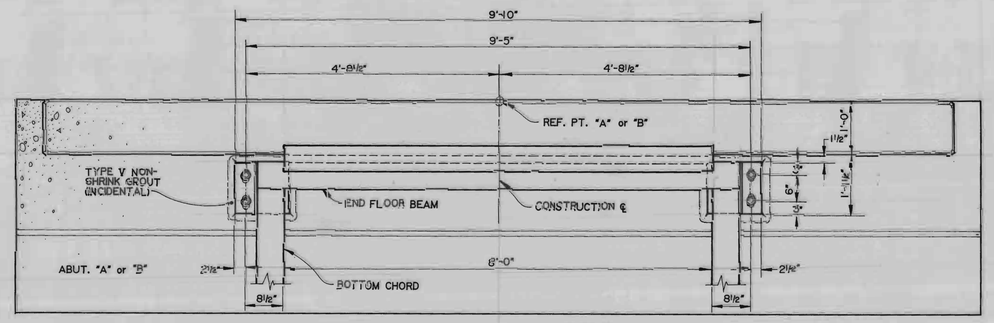


ELEVATION, ABUT.'S "A" or "B"
1/4" = 1'-0"



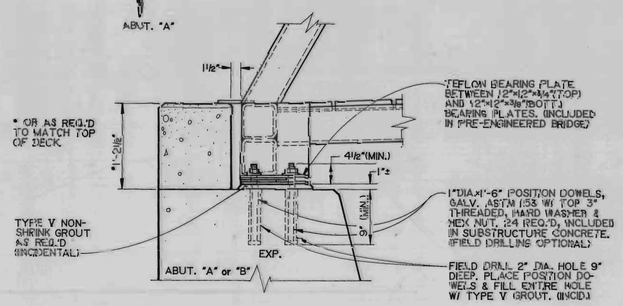
PILE PLAN
1/4" = 1'-0"



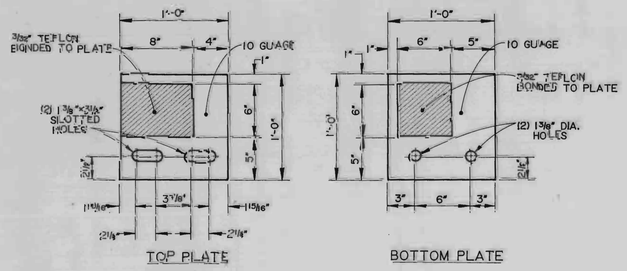


ABUTMENT BEARING DETAIL
3/4" = 1'-0"

NOTE: THE LOCATION OF POSITION DOWELS MAY VARY WITH MANUFACTURER, SUBJECT TO ENGINEERS APPROVAL. SEE SHOP DRAWINGS FOR DOWEL LOCATIONS. ⚠1



ABUTMENT BEARING DETAIL
1" = 1'-0"



TEFLON BEARING DETAIL
1½" = 1'-0"
(INCLUDED IN PRE-ENGINEERED BRIDGE)

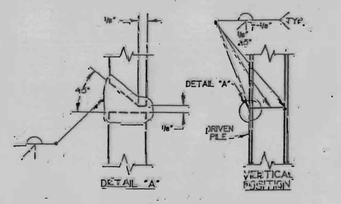
NOTE: BEARING PLATES MAY VARY WITH MANUFACTURER, SUBJECT TO ENGINEERS APPROVAL.

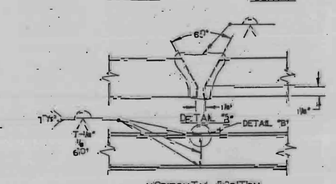
QUANTITIES

STEEL PILES (12 BP 53)					
LOCATION	TYPE	REQ'D	EST. LTH.	UNIT	AMOUNT
ABUT. "A"	VERTICAL	8	28	L.F.	56.0
ABUT. "A"	BATTER	2	28	L.F.	56.0
ABUT. "B"	VERTICAL	2	30	L.F.	60.0
ABUT. "B"	BATTER	2	30	L.F.	60.0
STEEL PILES, FURNISHED AND DRIVEN				L.F.	232.0
SPLICES, STEEL PILES				EACH	6.0
FURNISHING EQUIPMENT FOR DRIVING PILES				LUMP SUM	1.0

SUBSTRUCTURE CONCRETE (35S)			
	UNIT	ABUT. "A"	ABUT. "B"
POUR A	CuYd.'s	14.0	14.0
POUR B	CuYd.'s	1.0	1.0
TOTAL	CuYd.'s	15.0	15.0
			30.0

MISCELLANEOUS QUANTITIES				
ITEM	UNIT	ABUT. "A"	ABUT. "B"	TOTAL
MEMBRANE WATER PROOFING	SqFt.	27.0	27.0	64.0
PENETRATING WATER REPELLENT TREATMENT	SqYd.'s	5.0	5.0	10.0





BUTT WELDS

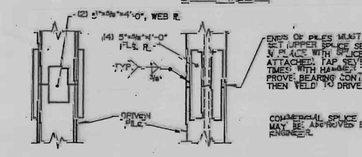


PLATE WELDS

12 BP 53 SPLICE OPTIONS

NOTES:

FOR BEVEL AND MOLDING DETAILS, SEE STANDARD PLAN XI-1036. ALL ABUTMENT PILINGS SHALL BE DRIVEN TO A MINIMUM BEARING CAPACITY OF 30 TON STEEL PILINGS SHALL BE 12 BP 53.

PILES TO BE DRIVEN WITH SUCH ACCURACY THAT THE ENDS OF THE PILES TO BE EMBEDDED IN THE CONCRETE ARE WITHIN 3" OF THE LOCATION SHOWN ON THE PLANS.

MINIMUM PENETRATION MUST BE REACHED REGUARDLESS OF THE STANDARD SPECIFICATION REQUIREMENTS OF ABSOLUTE REFUSAL. ANY JETTING, PREBORING OR OVERDRIVING REQUIRED TO REACH MINIMUM PENETRATION WILL BE PART OF THE UNIT PRICE PER FOOT OF PILES, FURNISHED AND DRIVEN, FOR PILE PENETRATION, SEE SHEET 2.

THE TOP OF ABUTMENTS SHALL BE GIVEN AN APPLICATION OF PENETRATING WATER REPELLENT PRIOR TO PLACING BEARING PLATES.

F.S. DENOTES FAR SIDE, N.S. DENOTES NEAR SIDE, E.S. DENOTES EACH SIDE.

APPROVED, FIELD	BY:	DATE:
APPROVED, OFFICE	BY:	DATE:
AWARDED	CONTRACTOR	DATE:

NO.	DATE	REVISION
⚠1	6-7-91	CHANGES DUE TO SHOP DRAWINGS

NO.	DATE	REVISION
LAST		RECORD MEASUREMENTS ADDED TO DRAWING

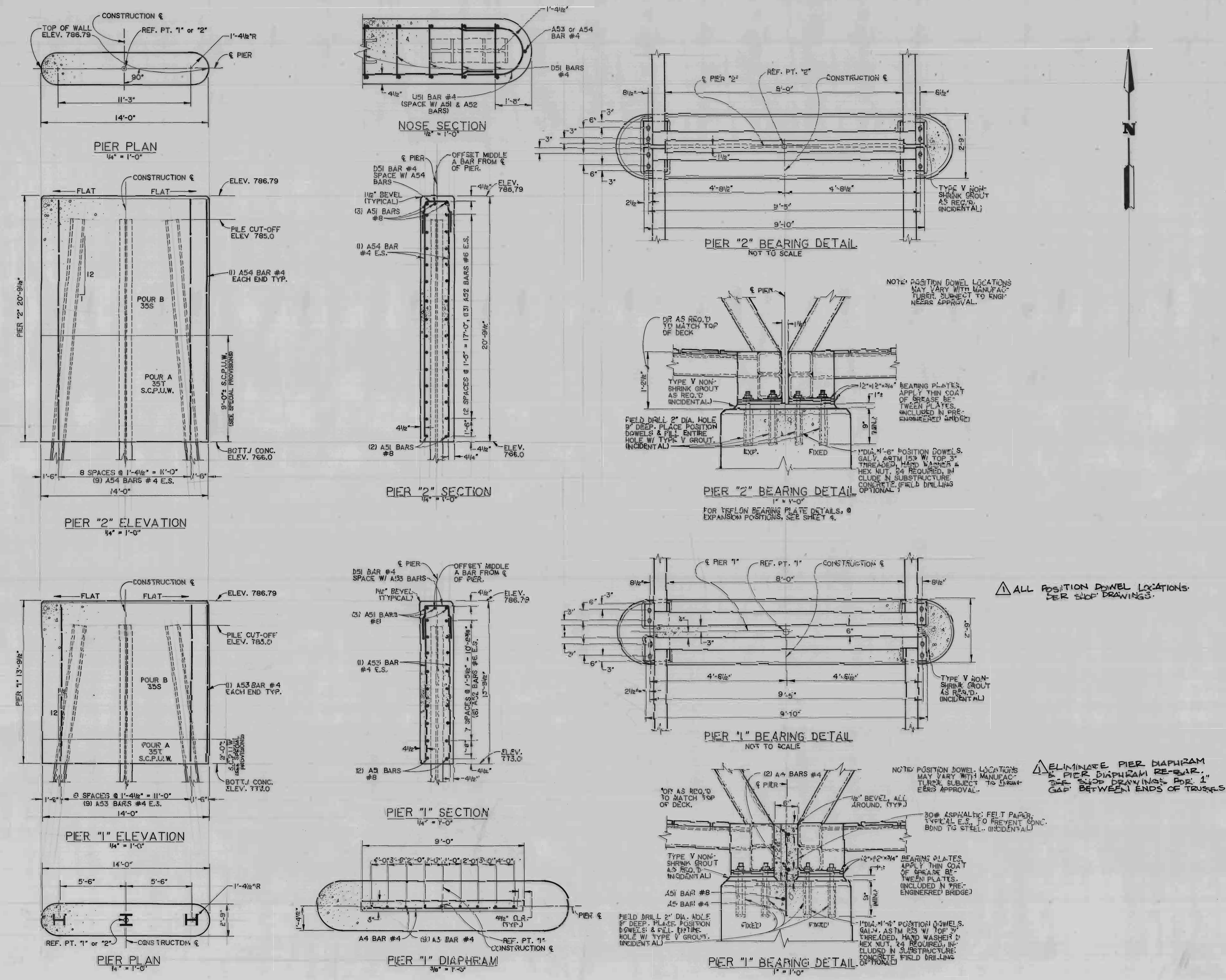
VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

SPALDING, DeDECKER & ASSOCIATES, INC.
ENGINEERS SURVEYORS
MADISON HEIGHTS, MICHIGAN PHONE: (313) 585-5545

DRAWN	DATE
J. REYNOLDS	12-2-90
CHECKED	DATE
R. DORTMANN RAD	1/2/91
PROJECT MANAGER	BID PLAN DATE
P. WADE	

CITY OF ANN ARBOR, DEPT. OF PARKS & RECREATION
BARTON PARK BRIDGE "B"
OVER THE HURON RIVER
ABUTMENT DETAILS

JOB NO.	DRAWING NO.
MC89-56	
SCALE: AS NOTED	SHEET NO. 4 OF 6



QUANTITIES

STEEL PILES (12 BP53)					
LOCATION	TYPE	REQ.'D	EST. LTH.	UNIT	AMOUNT
PIER "1"	VERTICAL	1	39.0	L.F.	39.0
PIER	BATTER	2	39.0	L.F.	78.0
PIER "2"	VERTICAL	1	42.0	L.F.	42.0
PIER "2"	BATTER	2	42.0	L.F.	84.0
				L.F.	
				L.F.	
				L.F.	
				L.F.	
STEEL PILES, FURNISHED AND DRIVEN				L.F.	243.0
SPLICES, STEEL PILES				EACH	6.0
FURNISHING EQUIPMENT FOR DRIVING PILES				LUMP SUM	1.0

SUBSTRUCTURE CONCRETE, PLACED UNDERWATER (35T)	UNIT	PIER "1"	PIER "2"
POUR A	CuYd.'s	3.0	13.0
TOTAL	CuYd.'s	16.0	

SUBSTRUCTURE CONCRETE (35S)	UNIT	PIER "1"	PIER "2"
POUR B	CuYd.'s	16.5	16.0
TOTAL	CuYd.'s	32.0	

~~1 PIER "1" DIAPHRAM IS EST. @ 0.50 CuYd.'s AND IS INCLUDED IN THE PAY ITEM PRE ENGINEERED PEDESTRIAN TRUSS BRIDGE, ERECTED.~~

MISCELLANEOUS QUANTITIES		
ITEM	UNIT	AMOUNT
PENETRATING WATER REPELLENT TREATMENT	SqYd.'s	8.0

NOTES:

M.W.P. DENOTES MEMBRANE WATERPROOFING

E.S. DENOTES EACH SIDE

ALL PIER PILINGS SHALL BE DRIVEN TO A MINIMUM BEARING CAPACITY OF 55 TONS. STEEL PILINGS SHALL BE 12 BP 53.

THE TOP OF PIERS SHALL BE GIVEN AN APPLICATION OF PENETRATING WATER REPELLENT PRIOR TO PLACING BEARING PLATES.

PILES TO BE DRIVEN WITH SUCH ACCURACY THAT THE ENDS OF THE PILES TO BE EMBEDDED IN THE CONCRETE ARE WITHIN 3" OF THE LOCATION SHOWN ON THE PLANS.

MINIMUM PENETRATION MUST BE REACHED REGARDLESS OF THE STANDARD SPECIFICATION REQUIREMENTS OF ABSOLUTE REFUSAL. ANY JETTING, PREBORING OR OVERDRIVING REQUIRED TO REACH MINIMUM PENETRATION WILL BE PART OF THE UNIT PRICE PER FOOT OF PILES FURNISHED AND DRIVEN. FOR PILE PENETRATION, SEE SHEET 2.

FOR PILING SPLICES, SEE SHEET 4.

FOR BEVEL AND MOLDING DETAILS, SEE STANDARD PLAN XI-10.

DOWELS AS NOTED HEREON SHALL BE CONSIDERED AS INCIDENTAL TO SUBSTRUCTURE CONCRETE.

APPROVED, FIELD	BY:	DATE:	NO.	DATE	BY	REVISION	NO.	DATE	REVISION
APPROVED, OFFICE	BY:	DATE:	1	6-7-91		CHANGES DUE TO SHOP DRAWINGS			
AWARDED	CONTRACTOR	DATE:					LAST		RECORD MEASUREMENTS ADDED TO DRAWING

VERIFY SCALES: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

SPALDING, DeDECKER & ASSOCIATES, INC.
ENGINEERS SURVEYORS
MADISON HEIGHTS, MICHIGAN PHONE: (313) 585-3545

DRAWN: J. REYNOLDS DATE: 12-17-90
CHECKED: R. BORTMANN RJB DATE: 1/5/91
PROJECT MANAGER: P. WADE
BID PLAN DATE

CITY OF ANN ARBOR, DEPT. OF PARKS & RECREATION
BARTON PARK BRIDGE "B"
OVER THE HURON RIVER
PIER DETAILS

JOB NO.: MC89-06
DRAWING NO.:
SCALE: AS NOTED
SHEET NO.: 5 OF 6

APPROACHES

ITEM	UNIT	AMOUNT

NONE THIS PROJECT

STEEL REINFORCEMENT- EPOXY COATED

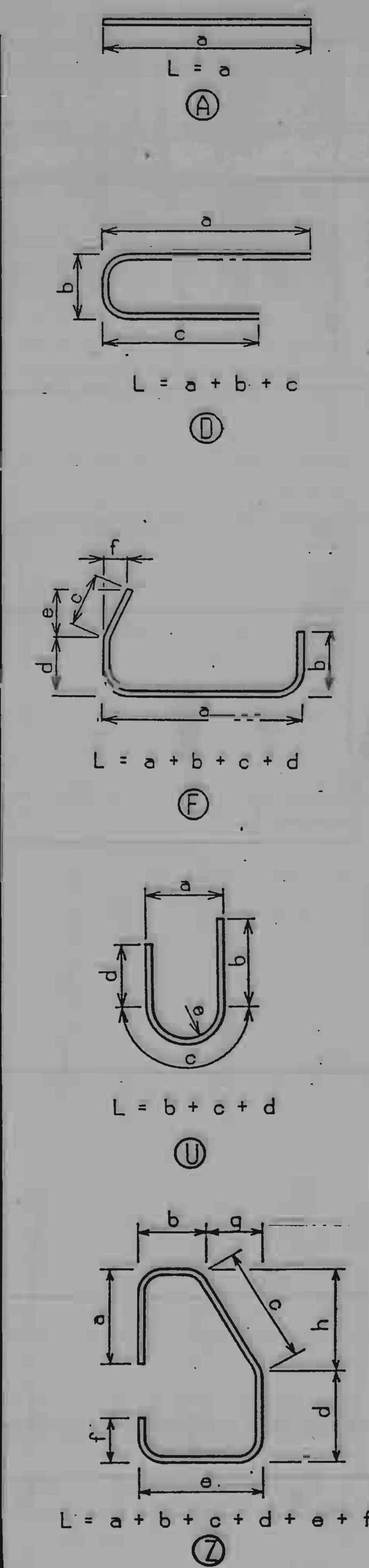
MARK	DIMENSIONS A	B	C	D	E	F	G	H	SIZE	LENGTH	No. REQ'D	TOTAL WEIGHT
TOTAL REINFORCEMENT- EPOXY COATED												

NONE THIS PROJECT

△ STEEL REINFORCEMENT

MARK	DIMENSIONS A	B	C	D	E	F	G	H	SIZE	LENGTH	No. REQ'D	TOTAL WEIGHT
A1	17'-3"								8	17'-3"	10	461
A2	17'-3"								6	17'-3"	12	311
A3	16'-3"			/PARAPET					4	16'-3"	4	43
~~A4~~	~~8'-3"~~				/DIAPHRAM		/ELIMINATE		~~4~~	~~8'-3"~~	~~2~~	~~11~~
~~A5~~	~~1'-10"~~								~~4~~	~~1'-10"~~	~~8~~	~~10~~
D1	1'-11"	0'-5"	1'-11"		/PARAPET				4	4'-3"	34	97
F1	3'-4"	4'-9"	5'-0"		4'-11"	1'-3"			6	13'-1"	28	550
Z1	3'-0"	2'-0"	2'-9"				0'-10"	2'-8"	6	7'-9"	28	326
A51	11'-6"								8	11'-6"	10	307
A52	11'-6"								6	11'-6"	42	725
A53	12'-0"								4	12'-0"	20	160
A54	19'-0"						PIERS		4	19'-0"	20	254
D51	3'-0"	2'-0"	3'-0"						4	8'-0"	18	96
U51	2'-0½"	1'-11⅝"	3'-0¾"	1'-1⅝"	0'-11¾"				6	7'-0"	50	526
TOTAL STEEL REINFORCEMENT												4,338 lb.'s

4,317 lb.'s



BRIDGE

ITEM	UNIT	AMOUNT
CLEARING	SqYd.'s	1100
EARTH EXCAVATION	CuYd.'s	45
UNCLASSIFIED FOUNDATION EXCAVATION	CuYd.'s	150
STRUCTURE BACKFILL (C.I.P.)	CuYd.'s	140
GRADING	L. SUM	1.0
EROSION CONTROLS	L. SUM	1.0
STEEL PILES FURNISHED AND DRIVEN	L.F.	475
SPLICES, STEEL PILES (12")	EACH	11
FURNISHING EQUIPMENT FOR DRIVING PILES	LUMP SUM	1
SUBSTRUCTURE CONCRETE	CuYd.'s	62
STEEL REINFORCEMENT	Lb.'s	4338
SUBSTRUCTURE CONCRETE PLACED UNDER WATER (S.C.P.U.W.)	CuYd.'s	16
PRE-ENGINEERED PEDESTRIAN TRUSS BRIDGE, FABRICATED AND FURNISHED	LUMP SUM	3
PRE-ENGINEERED PEDESTRIAN TRUSS, BRIGE ERECTED	LUMP SUM	3
MEMBRANE WATERPROOFING	SqFt.	54
PENETRATING WATER REPELLENT TREATMENT	SqYd.'s	18
MOBILIZATION	LUMP SUM	1
FINE GRADING, FERTILIZE SEED & MULCH	SqYd.'s	150
NATURAL AREAS/ STEEP SLOPES	SqYd.'s	900

NON-PARTICIPATING APPROACHES

ITEM	UNIT	AMOUNT

NONE THIS PROJECT

NOTE: CUTTING AND BENDING TOLERANCES ARE AS ESTABLISHED IN THE MANUAL OF STANDARD PRACTICE OF THE CONCRETE REINFORCING STEEL INSTITUTE AND DETAILING MANUAL OF THE AMERICAN CONCRETE INSTITUTE.

APPROVED, FIELD	BY	DATE
APPROVED, OFFICE	BY	DATE
AWARDED	CONTRACTOR	DATE

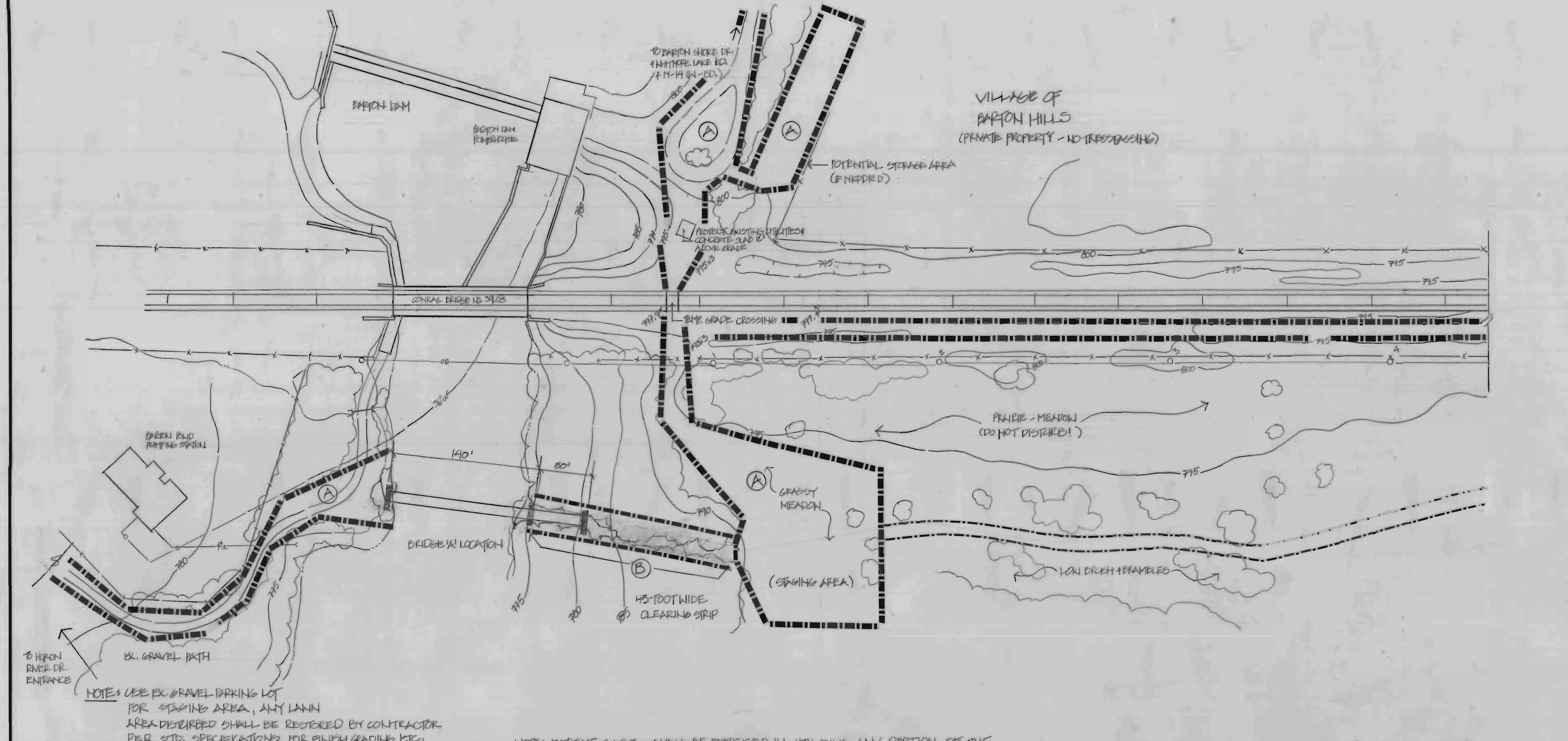
DATE	REVISION
△ 6-7-91	CHANGES DUE TO SHOP DRAWINGS

SPALDING, DeDECKER & ASSOCIATES, INC.
ENGINEERS · SURVEYORS

DRAWN R. REYNOLDS 12-18-90
CHECKED R. DORTMANN 1/2/91
PROJECT MANAGER P. WADE

CITY OF ANN ARBOR, DEPT. OF PARKS & RECREATION
BARTON PARK BRIDGE "B"
OVER THE HURON RIVER
QUANTITY SHEET

JOB NO. MC89-06
SCALE: NONE
SHEET NO. 6 OF 6



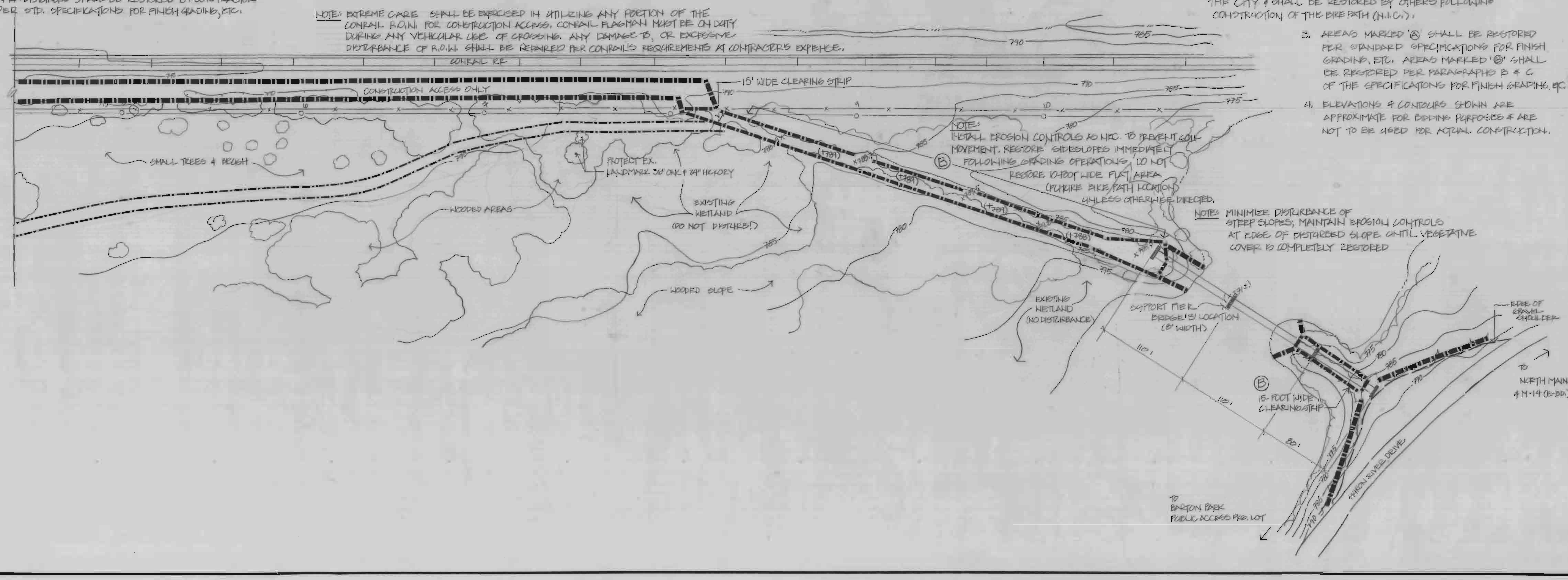
LEGEND

- EXISTING CONTOUR
- EXISTING WIRE FENCE
- EXISTING POWER POLE & OVERHEAD LINES
- EXISTING RAILROAD TRACK (CONRAIL)
- EXISTING TREE CANOPY COVER
- LIMITS OF CONSTRUCTION ACCESS
- LIMITS OF GRADING / CLEARING
- ALTERNATE CONSTRUCTION ACCESS ROUTE (SEE NOTE)
- Ⓐ LAWN AREAS TO BE RESTORED PER STANDARD SPECS.
- Ⓑ NATURAL AREAS & STEEP SLOPES TO BE RESTORED PER "SPECIAL INSTRUCTIONS"
- (780+) PROPOSED SPOT ELEVATION

SCALE: 1" = 60 FEET

NOTES:

1. LIMITS OF CONSTRUCTION ACCESS SHALL BE FLAGGED BY CITY. CONTRACTOR SHALL MAINTAIN APPROPRIATE BARRIERS TO PREVENT DISTURBANCE BEYOND LIMITS AS INDICATED. ALL DISTURBED AREAS SHALL BE FINE GRADED, FERTILIZED, SEEDED & MULCHED PER SPECIAL PROVISIONS, & AS INDICATED. ADDITIONAL AREA DISTURBED BY THE CONTRACTOR (OR ANY SUBCONTRACTORS) SHALL BE RESTORED TO THE SATISFACTION OF THE CITY AT THE CONTRACTOR'S EXPENSE, UNLESS OTHERWISE APPROVED BY THE CITY.
2. ALTERNATE CONSTRUCTION ACCESS ROUTE SHALL BE FLAGGED BY CITY, IF NECESSARY (I.E., IF USE OF CONRAIL R.O.W. IS RESTRICTED). CONTRACTOR SHALL BE PAID FOR CLEARING PER CONTRACT UNIT PRICE & SHALL PERFORM THE CLEARING OPERATIONS UPON CITY REQUEST. THE ALT. CONST. ACCESS RTE. SHALL BE A 10-FOOT-WIDE STRIP (15-FOOT WIDE MAX. DISTURBANCE) AS STAKED BY THE CITY & SHALL BE RESTORED BY OTHERS FOLLOWING CONSTRUCTION OF THE BIKE PATH (N.I.C.).
3. AREAS MARKED 'Ⓐ' SHALL BE RESTORED PER STANDARD SPECIFICATIONS FOR FINISH GRADING, ETC. AREAS MARKED 'Ⓑ' SHALL BE RESTORED PER PARAGRAPHS B & C OF THE SPECIFICATIONS FOR FINISH GRADING, ETC.
4. ELEVATIONS & CONTOURS SHOWN ARE APPROXIMATE FOR BIDDING PURPOSES & ARE NOT TO BE USED FOR ACTUAL CONSTRUCTION.



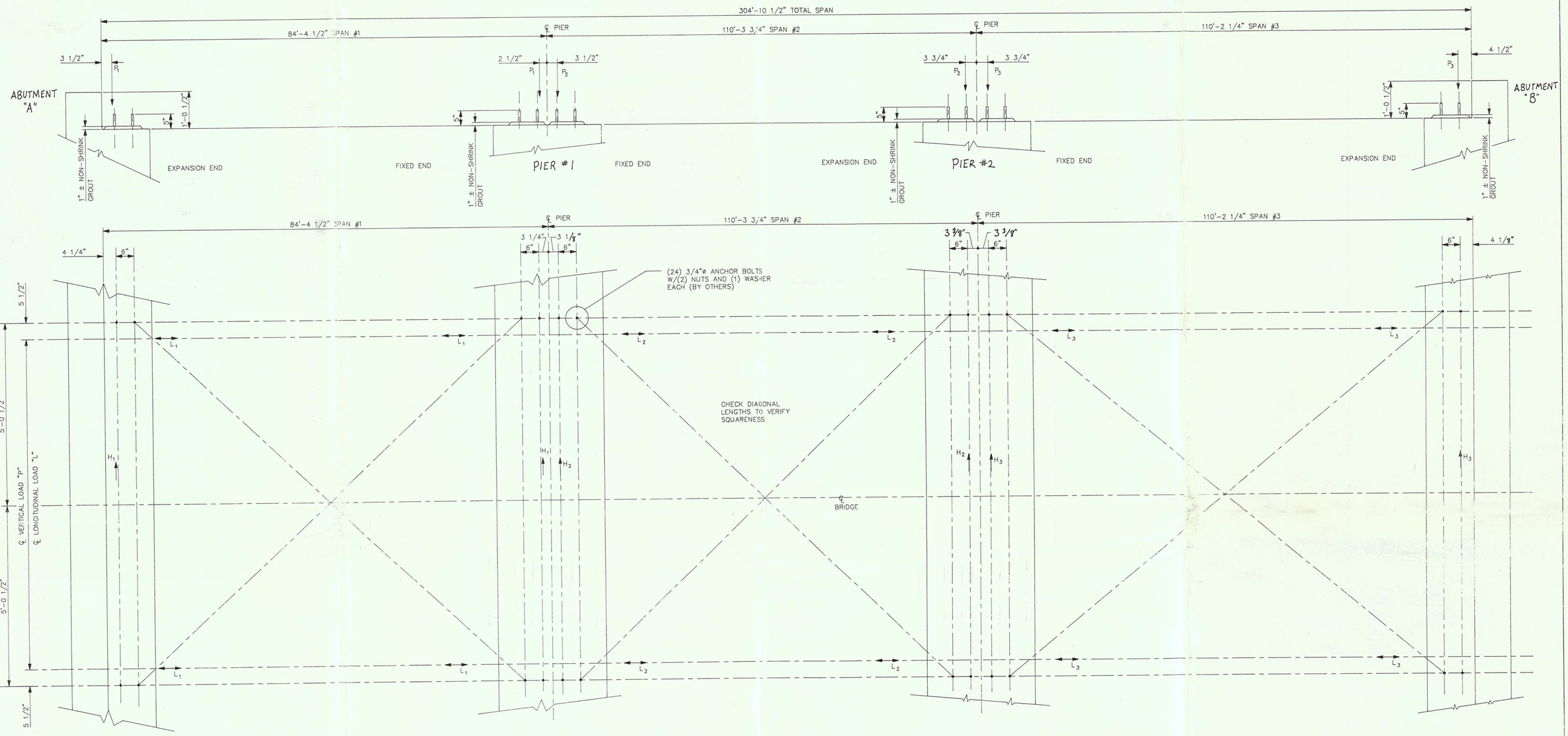
DESIGN: CMM	DATE: 2-26-91
DRAWN	APPROVE
CHECK	APPROVE

REVISIONS	DATE

EXISTING CONDITIONS LIMITS OF CONSTRUCTION

SHEET NO. APPENDIX 'A'

DEPARTMENT OF PARKS & RECREATION
100 N. FIFTH AVE. BOX 8647
ANN ARBOR, MICHIGAN 48107
TELEPHONE (313) 994-2780
SUPERINTENDENT - RONALD A. OLSON



84'-2 1/2" SPAN #1

COMBINE REACTIONS AS PER LOCAL OR GOVERNING BUILDING CODES AS REQUIRED

BRIDGE REACTIONS	+ DOWNWARD LOAD − UPWARD LOAD		
	P_1 (LBS)	H_1 (LBS)	L_1 (LBS)
DEAD LOAD	6550		
UNIFORM LIVE LOAD (85 PSF)	15550		
VEHICLE LOAD PLUS 20 PSF LIVE LOAD	5650		
WIND UPLIFT 20 PSF	−6150		
WIND	±2150	7000	
THERMAL	±N/A	N/A	650

"P" – VERTICAL LOAD EACH BASE PLATE (4 PER BRIDGE)
"H" – HORIZONTAL LOAD EACH FOOTING (2 PER BRIDGE)
"L" – LONGITUDINAL LOAD EACH BASE PLATE (4 PER BRIDGE)

BRIDGE LIFTING WEIGHT: 26200 LBS

110'-2 1/2" SPAN #2

COMBINE REACTIONS AS PER LOCAL OR GOVERNING BUILDING CODES AS REQUIRED

BRIDGE REACTIONS	+ DOWNWARD LOAD − UPWARD LOAD		
	P_2 (LBS)	H_2 (LBS)	L_2 (LBS)
DEAD LOAD	10250		
UNIFORM LIVE LOAD (85 PSF)	20300		
VEHICLE LOAD PLUS 20 PSF LIVE LOAD	6800		
WIND UPLIFT 20 PSF	−8000		
WIND	±2900	9300	
THERMAL	±N/A	N/A	1000

"P" – VERTICAL LOAD EACH BASE PLATE (4 PER BRIDGE)
"H" – HORIZONTAL LOAD EACH FOOTING (2 PER BRIDGE)
"L" – LONGITUDINAL LOAD EACH BASE PLATE (4 PER BRIDGE)

BRIDGE LIFTING WEIGHT: 41000 LBS

110'-0" SPAN #3

COMBINE REACTIONS AS PER LOCAL OR GOVERNING BUILDING CODES AS REQUIRED

BRIDGE REACTIONS	+ DOWNWARD LOAD − UPWARD LOAD		
	P_3 (LBS)	H_3 (LBS)	L_3 (LBS)
DEAD LOAD	10250		
UNIFORM LIVE LOAD (85 PSF)	20300		
VEHICLE LOAD PLUS 20 PSF LIVE LOAD	6800		
WIND UPLIFT 20 PSF	−8000		
WIND	±2900	9300	
THERMAL	±N/A	N/A	1000

"P" – VERTICAL LOAD EACH BASE PLATE (4 PER BRIDGE)
"H" – HORIZONTAL LOAD EACH FOOTING (2 PER BRIDGE)
"L" – LONGITUDINAL LOAD EACH BASE PLATE (4 PER BRIDGE)

BRIDGE LIFTING WEIGHT: 41000 LBS

SUBMITTAL NUMBER

SHOP DRAWING REVIEW

REVIEW IS FOR GENERAL COMPLIANCE WITH CONTRACT DOCUMENTS. NO RESPONSIBILITY IS ASSUMED FOR CORRECTNESS OF DIMENSIONS OR DETAILS

XXEX NO EXCEPTIONS TAKEN
MAKE CORRECTIONS NOTED
AMEND AND RESUBMIT
REJECTED

SPALDING DeDECKER & ASSOCIATES, INC.
CONSULTING ENGINEERS

Date 5/30/91 By BJD

CONTINENTAL BRIDGE — ALEXANDRIA, MN — 612-852-7500

DATE:	LEVEL:	REVISION:

STATE OF MICHIGAN — STEVEN J. HERTH — ENGINEER — No. 33400 — REGISTERED PROFESSIONAL ENGINEER

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MICHIGAN.

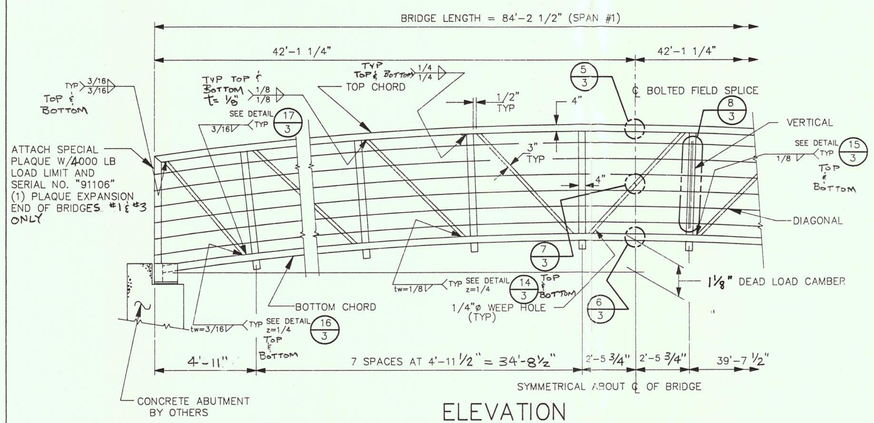
DATE: 5/24/91 REG. NO. 33400

DRAWN BY: BAC
CHECKED BY: BLH
DATE: 5/22/91

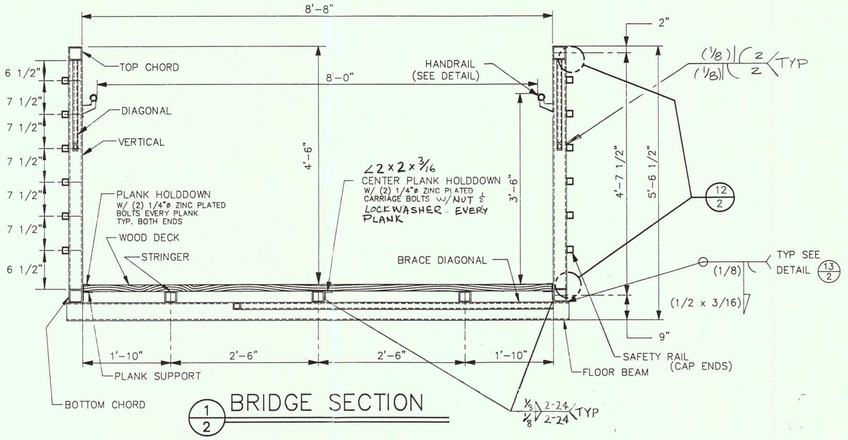
304'-7 1/2" X 8'-8"
PEDESTRIAN BRIDGE
ANCHOR BOLT LAYOUT SHEET
ANN ARBOR, MI

SHEET NO. 1 OF 7

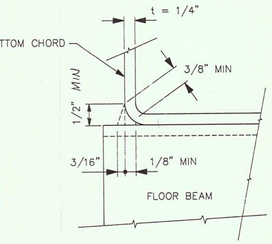
JOB # 91106



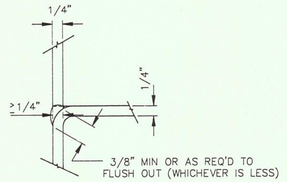
ELEVATION



BRIDGE SECTION



FLOOR BEAM WELD DETAIL



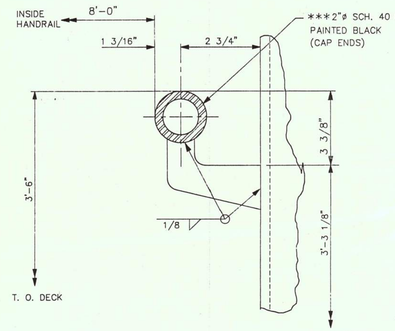
MATCHED EDGES OF VERTICALS TO BOTH CHORDS TO BE PARTIAL PENETRATION WELDS

WELD DETAIL

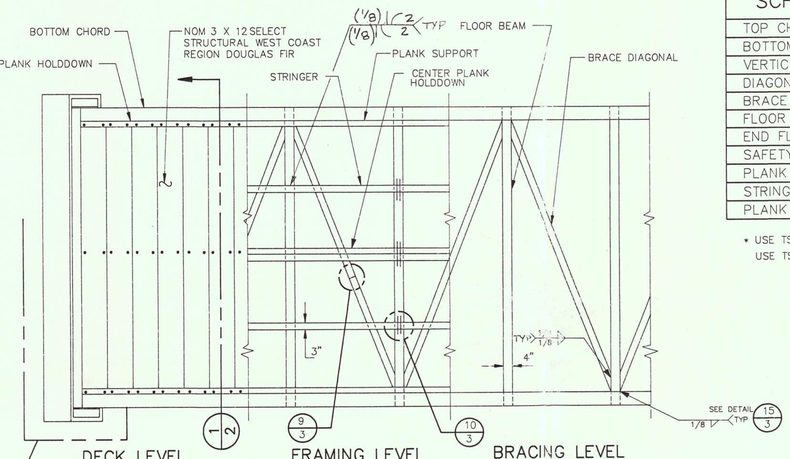
SCHEDULE OF MEMBER SIZES	
TOP CHORD	TS 6 x 4 x 1/4
BOTTOM CHORD	TS 6 x 6 x 1/4
VERTICAL	TS 6 x 4 x 1/4
DIAGONAL	TS 3 x 3 x 1/8 *
BRACE DIAGONAL	TS 3 x 3 x 1/8
FLOOR BEAM	TS 6 x 4 x 1/4
END FLOOR BEAM	TS 10 x 4 x 3/16
SAFETY RAIL	TS 1 1/2 x 1 1/2 x 1/8
PLANK HOLDDOWN	L 1-1/4 x 1-1/4 x 1/8
STRINGER	TS 4 x 3 x 1/8
PLANK SUPPORT	L 1-1/4 x 1-1/4 x 1/8

* USE TS 4 x 3 x 3/16 FOR END BAY, TYP BOTH ENDS.
USE TS 4 x 3 x 1/8 NEXT 2 BAYS, TYP BOTH ENDS.

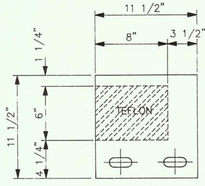
NOTE:
*** HANDRAILS TO BE PRIMED W/RETARDO RUST INHIBITIVE PRIMER 163, RED #20 AND PAINTED WITH A TOP COAT OF RETARDO RUST INHIBITIVE PAINT #163, BLACK #80 AS MANUFACTURED BY BENJAMIN MOORE PAINTS. TOUCH UP PAINT TO BE PROVIDED.



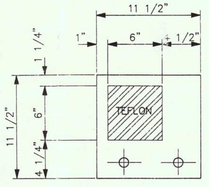
HANDRAIL DETAIL



BRIDGE PLAN

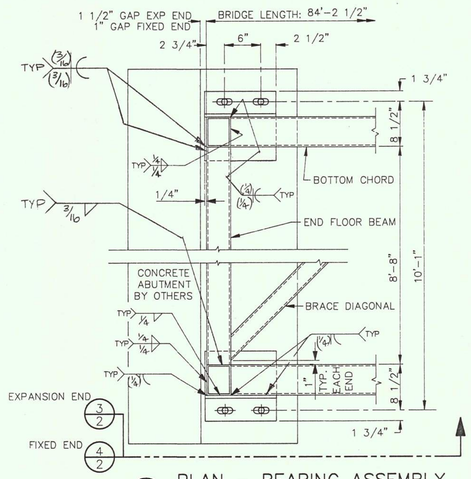


TOP PLATE

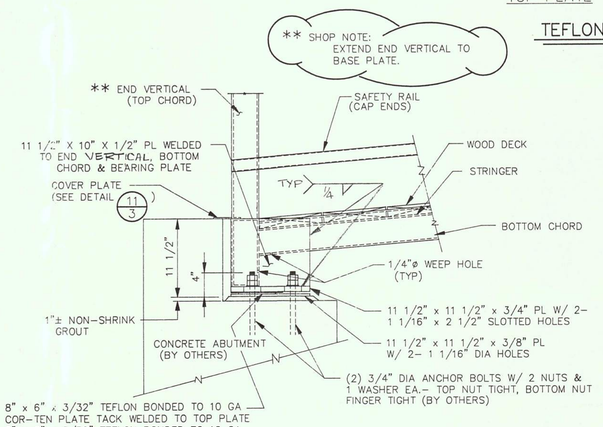


BOTTOM PLATE

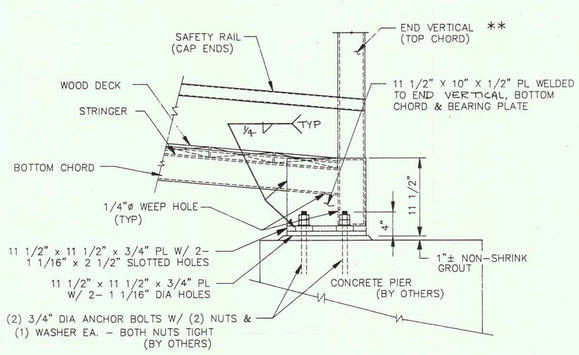
TEFLON BEARING DETAIL



PLAN – BEARING ASSEMBLY



SIDE VIEW – BEARING ASSEMBLY (EXPANSION END)



SIDE VIEW – BEARING ASSEMBLY (FIXED END)

GENERAL NOTES

1. DESIGN STRESSES ARE IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO), 14TH EDITION.
2. BRIDGE MEMBERS ARE FABRICATED FROM HIGH STRENGTH, SELF-WEATHERING, LOW ALLOY, ATMOSPHERIC CORROSION RESISTANT ASTM A847 COLD-FORMED WELDED SQUARE AND RECTANGULAR TUBING, AND ASTM A588, ASTM A606, OR ASTM A242 PLATE AND STRUCTURAL SHAPES (FY = 50,000 P.S.I.).
3. BRIDGE DECKING NOMINAL 3-INCH THICK SELECT STRUCTURAL WEST COAST REGION DOUGLAS FIR. TIMBER DECK MATERIAL SHALL BE TREATED WITH CHROMATED COPPER ARSENATE (CCA) TO A .4 PCF RETENTION,OR TO REFUSAL.
4. E80 SERIES ELECTRODES FOR WELDING.
5. ALL TOP AND BOTTOM CHORD SHOP SPLICES TO BE COMPLETE PENETRATION TYPE WELDS. WELD BETWEEN TOP CHORD AND END VERTICAL SHALL BE PARTIAL PENETRATION.
6. UNLESS OTHERWISE NOTED, WELDED CONNECTIONS SHALL BE FILLET WELDS (OR HAVE THE EFFECTIVE THROAT OF A FILLET WELD) OF A SIZE EQUAL TO THE THICKNESS OF THE LIGHTEST GAGE MEMBER IN THE CONNECTION. WELDS SHALL BE APPLIED AS FOLLOWS:
   - A) BOTH ENDS OF VERTICALS, DIAGONALS, AND FLOOR BEAMS SHALL BE WELDED ALL AROUND.
   - B) BRACE DIAGONALS WILL BE WELDED FOR FULL LENGTH OF TOP, BOTTOM AND OUTSIDE VERTICAL FACES.
   - C) BOTTOM OF STRINGERS WILL BE STITCH WELDED TO TOP OF FLOOR BEAMS.
   - D) MISCELLANEOUS NON-STRUCTURAL MEMBERS WILL BE STITCH WELDED TO THEIR SUPPORTING MEMBERS.
7. BRIDGE DESIGN WAS ONLY BASED ON COMBINATIONS OF THE FOLLOWING LOADS WHICH WILL PRODUCE MAXIMUM CRITICAL MEMBER STRESSES.
   - A) 85 PSF UNIFORM LIVE LOADING ON THE FULL DECK AREA OR 20 PSF UNIFORM LIVE LOADING ON THE FULL DECK AREA PLUS ONE 4,000 POUND VEHICLE LOAD.
   - B) 30 PSF WIND LOAD ON THE FULL HEIGHT OF THE BRIDGE, AS IF ENCLOSED.
   - C) 20 PSF UPWARD FORCE APPLIED AT THE WINDWARD QUARTER POINT OF THE TRANSVERSE BRIDGE WIDTH (AASHTO 3.15.3).
   - NOTE: 85 PSF UNIFORM LIVE LOAD HAS BEEN REDUCED PER UBC SECTION 2306.
8. CLEANING: ALL EXPOSED SURFACES OF STEEL SHALL BE CLEANED IN ACCORDANCE WITH STEEL STRUCTURES PAINTING COUNCIL SURFACES PREPARATION SPECIFICATIONS NO. 6 COMMERCIAL BLAST CLEANING. SSPC-SP6-63.

CONTINENTAL BRIDGE — ALEXANDRIA, MN — 612-852-7500

DATE:	LEVEL:	REVISION:

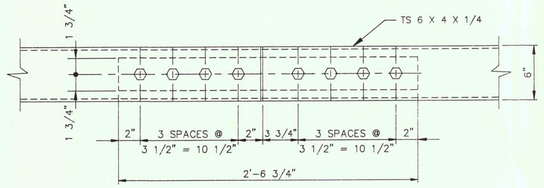
STATE OF MICHIGAN — STEVEN J. HERTH — ENGINEER — No. 33400 — REGISTERED PROFESSIONAL ENGINEER

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MICHIGAN
DATE: 5/24/91 REG. NO. 33400

DRAWN BY:	CHECKED BY:	DATE:
BAC	BLH	5/20/91

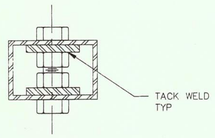
304'-7 1/2" X 8'-8"
PEDESTRIAN BRIDGE
84'-2 1/2" (SPAN #1)
ANN ARBOR, MI

SHEET NO. 2 OF 7 — JOB # 91106



PLAN – TOP FACE (AS SHOWN)
PLAN – BOTTOM FACE (OPPOSITE)

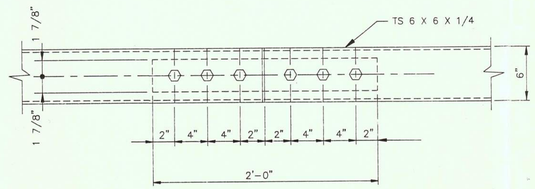
5/2 TOP CHORD SPLICE



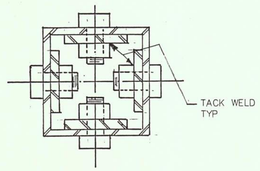
SECTION

MATERIALS (PER SPLICE)
16 – 1"ø X 2 1/4" LONG
A325 BOLTS AND NUTS (TYPE 3)

2 – 3 1/2" X 3/4" X 2'-6 3/4"
ASTM A588 PLATES



PLAN –TOP AND BOTTOM FACE

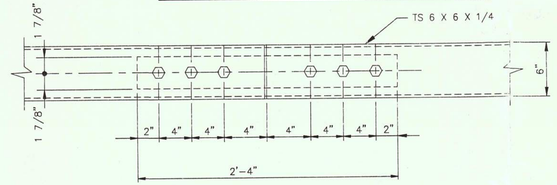


SECTION

MATERIALS (PER SPLICE)
24 – 1"ø X 2 1/4" LONG
A325 BOLTS AND NUTS (TYPE 3)

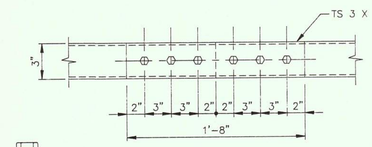
2 – 3 3/4" X 1/2" X 2'-0"
ASTM A588 PLATES

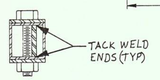
2 – 3 3/4" X 1/2" X 2'-4"
ASTM A588 PLATES



PLAN – SIDE FACE

6/2 BOTTOM CHORD SPLICE





PLAN

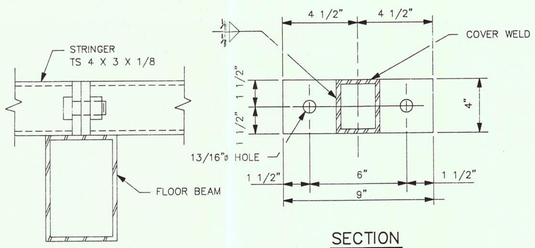
SECTION

MATERIALS (PER SPLICE)
6 – 3/4"ø X 5" LONG
A325 BOLTS AND NUTS (TYPE 3)

2 – 3" X 1/2" X 1'-8"
ASTM A588 PLATES

2 – 2 1/16" X 3/8" X 10"
ASTM A588 PLATES

7,9/2 DIAGONAL SPLICE
BRACE DIAGONAL SPLICE



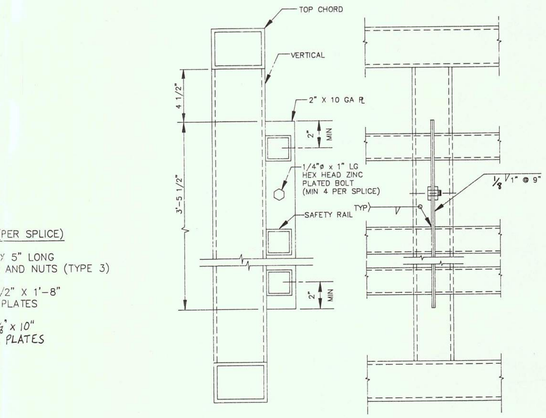
SIDE ELEVATION

SECTION

MATERIAL (PER SPLICE)
2 – 3/4"ø X 2" LONG
A325 BOLTS & NUTS (TYPE 3)

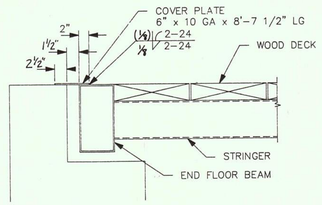
2 – 4" X 3/8" X 9"
ASTM A588 PLATES
W/(2) 13/16"ø HOLES

10/2 STRINGER SPLICE

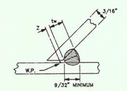


SECTION ELEVATION

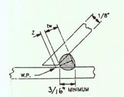
8/2 SAFETY RAIL SPLICE



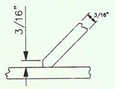
11/2 COVER PLATE DETAIL
(EXPANSION END ONLY)



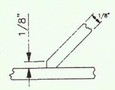
16/2 WELD DETAIL



17/2 WELD DETAIL



17/2 DETAIL
TYP FILLET WELD PREPARATION AT TOE OF END DIAGONAL



13/2 DETAIL
TYP FILLET WELD PREPARATION AT TOE OF DIAGONAL AND BRACE DIAGONAL

CONTINENTAL BRIDGE
ALEXANDRIA, MN —— 612-852-7500

DATE:	LEVEL:	REVISION:

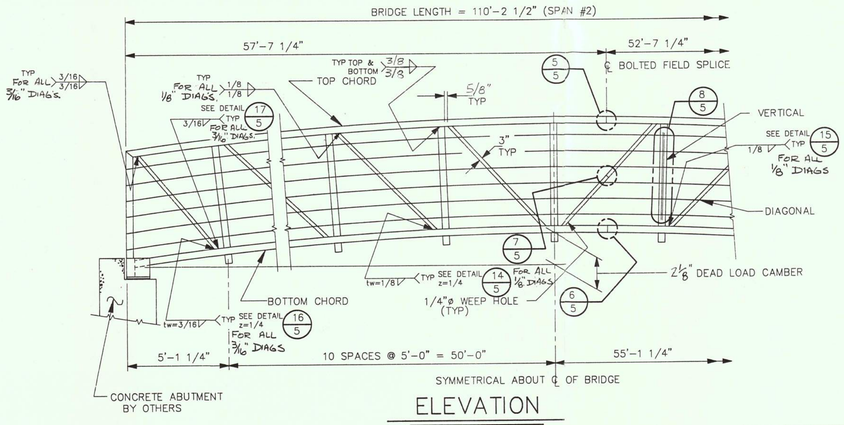
STATE OF MICHIGAN – LICENSED PROFESSIONAL ENGINEER
STEVEN J. HERTH ENGINEER No. 33400

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MICHIGAN
DATE: 5/24/91 REG. NO. 33400

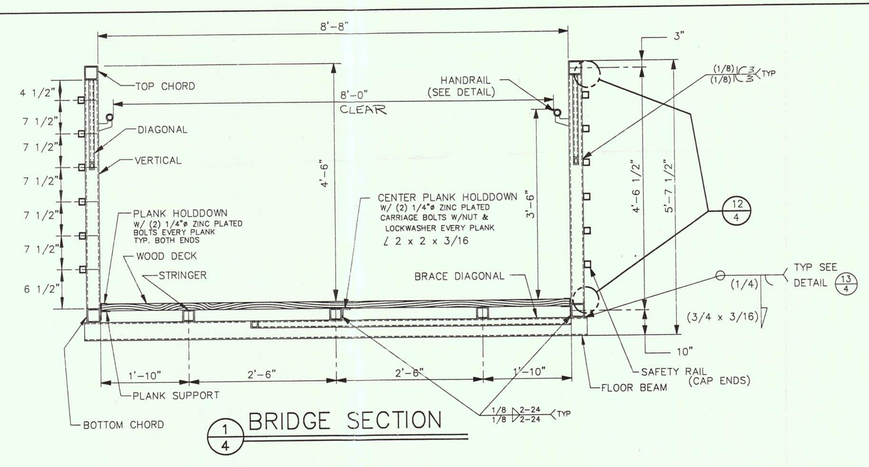
DRAWN BY: BAC
CHECKED BY: BLH
DATE: 5/23/91

304'-7 1/2" X 8'-8"
PEDESTRIAN BRIDGE
84'-2 1/2" SPAN #1 SPLICE SHEET
ANN ARBOR, MI

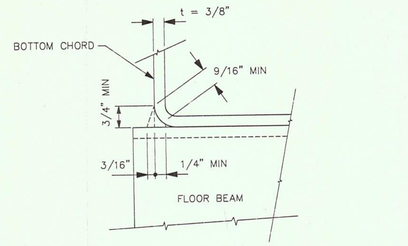
SHEET NO. 3 OF 7
JOB # 91106



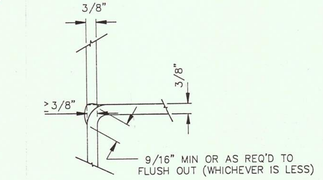
ELEVATION



BRIDGE SECTION



FLOOR BEAM WELD DETAIL



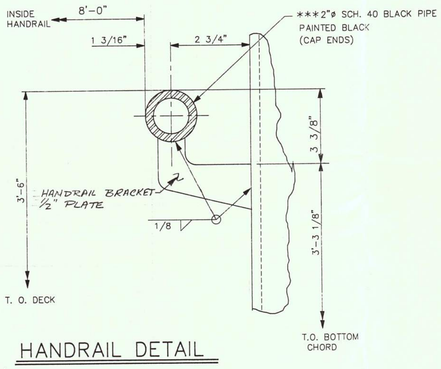
MATCHED EDGES OF VERTICALS TO BOTH CHORDS TO BE PARTIAL PENETRATION WELDS

WELD DETAIL

SCHEDULE OF MEMBER SIZES	
TOP CHORD	TS 6 x 6 x 3/8
BOTTOM CHORD	TS 6 x 6 x 3/8
VERTICAL	TS 6 x 6 x 3/8
DIAGONAL	TS 3 x 3 x 1/8 *
BRACE DIAGONAL	TS 3 x 3 x 1/8
FLOOR BEAM	TS 7 x 5 x 1/4
END FLOOR BEAM	TS 10 x 4 x 3/16
SAFETY RAIL	TS 1 1/2 x 1 1/2 x 1/8
PLANK HOLDDOWN	L 1-1/4 x 1-1/4 x 1/8
STRINGER	TS 4 x 3 x 1/8
PLANK SUPPORT	L 1-1/4 x 1-1/4 x 1/8

* USE TS 4 x 3 x 3/16 END 2 BAYS , TYP BOTH ENDS.
USE TS 3 x 3 x 3/16 NEXT 3 BAYS, TYP BOTH ENDS.

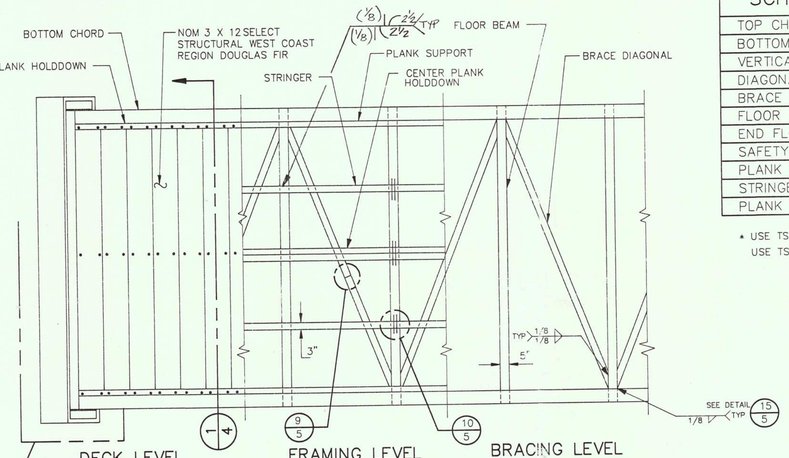
NOTE:
*** HANDRAILS TO BE PRIMED W/RETARDO RUST INHIBITIVE PRIMER 163, RED #20 AND PAINTED WITH A TOP COAT OF RETARDO RUST INHIBITIVE PAINT #163, BLACK #80 AS MANUFACTURED BY BENJAMIN MOORE PAINTS. TOUCH UP PAINT TO BE PROVIDED.



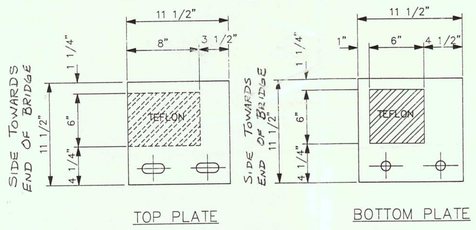
HANDRAIL DETAIL

GENERAL NOTES

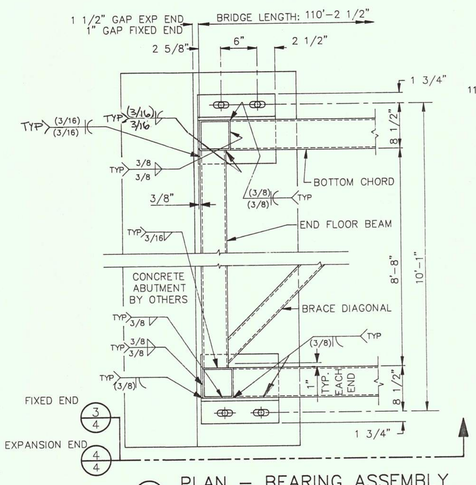
1. DESIGN STRESSES ARE IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO), 14TH EDITION.
2. BRIDGE MEMBERS ARE FABRICATED FROM HIGH STRENGTH, SELF-WEATHERING, LOW ALLOY, ATMOSPHERIC CORROSION RESISTANT ASTM A847 COLD-FORMED WELDED SQUARE AND RECTANGULAR TUBING, AND ASTM A588, ASTM A606, OR ASTM A242 PLATE AND STRUCTURAL SHAPES (FY = 50,000 P.S.I.).
3. BRIDGE DECKING NOMINAL 3-INCH THICK SELECT STRUCTURAL WEST COAST REGION DOUGLAS FIR. TIMBER DECK MATERIAL SHALL BE TREATED WITH CHROMATED COPPER ARSENATE (CCA) TO A .4 PCF RETENTION,OR TO REFUSAL.
4. E80 SERIES ELECTRODES FOR WELDING.
5. ALL TOP AND BOTTOM CHORD SHOP SPLICES TO BE COMPLETE PENETRATION TYPE WELDS. WELD BETWEEN TOP CHORD AND END VERTICAL SHALL BE PARTIAL PENETRATION.
6. UNLESS OTHERWISE NOTED, WELDED CONNECTIONS SHALL BE FILLET WELDS (OR HAVE THE EFFECTIVE THROAT OF A FILLET WELD) OF A SIZE EQUAL TO THE THICKNESS OF THE LIGHTEST GAGE MEMBER IN THE CONNECTION. WELDS SHALL BE APPLIED AS FOLLOWS:
   - A) BOTH ENDS OF VERTICALS, DIAGONALS, AND FLOOR BEAMS SHALL BE WELDED ALL AROUND.
   - B) BRACE DIAGONALS WILL BE WELDED FOR FULL LENGTH OF TOP, BOTTOM AND OUTSIDE VERTICAL FACES.
   - C) BOTTOM OF STRINGERS WILL BE STITCH WELDED TO TOP OF FLOOR BEAMS.
   - D) MISCELLANEOUS NON-STRUCTURAL MEMBERS WILL BE STITCH WELDED TO THEIR SUPPORTING MEMBERS.
7. BRIDGE DESIGN WAS ONLY BASED ON COMBINATIONS OF THE FOLLOWING LOADS WHICH WILL PRODUCE MAXIMUM CRITICAL MEMBER STRESSES.
   - A) 85 PSF UNIFORM LIVE LOADING ON THE FULL DECK AREA OR 20 PSF UNIFORM LIVE LOADING ON THE FULL DECK AREA PLUS ONE 4,000 POUND VEHICLE LOAD.
   - B) 30 PSF WIND LOAD ON THE FULL HEIGHT OF THE BRIDGE, AS IF ENCLOSED.
   - C) 20 PSF UPWARD FORCE APPLIED AT THE WINDWARD QUARTER POINT OF THE TRANSVERSE BRIDGE WIDTH (AASHTO 3.15.3).
   - NOTE: 85 PSF UNIFORM LIVE LOAD HAS BEEN REDUCED PER UBC SECTION 2306.
8. CLEANING: ALL EXPOSED SURFACES OF STEEL SHALL BE CLEANED IN ACCORDANCE WITH STEEL STRUCTURES PAINTING COUNCIL SURFACES PREPARATION SPECIFICATIONS NO. 6 COMMERCIAL BLAST CLEANING. SSPC-SP6-63.



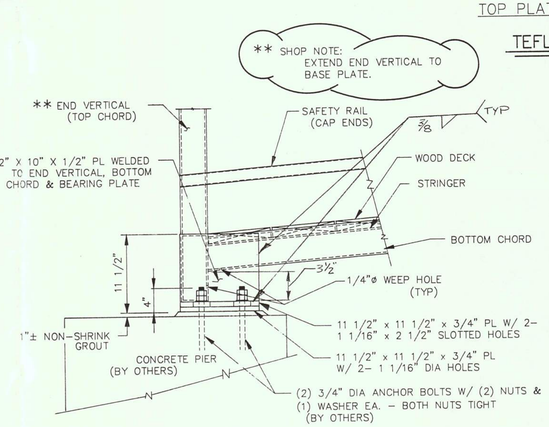
BRIDGE PLAN



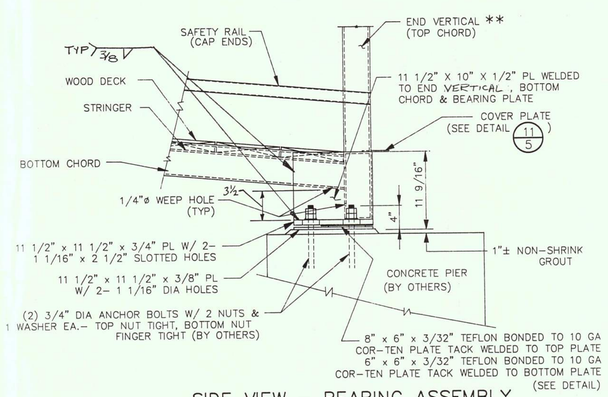
TEFLON BEARING DETAIL



PLAN - BEARING ASSEMBLY



SIDE VIEW - BEARING ASSEMBLY (FIXED END)



SIDE VIEW - BEARING ASSEMBLY (EXPANSION END)

CONTINENTAL BRIDGE — ALEXANDRIA, MN — 612-852-7500

DATE:	LEVEL:	REVISION:

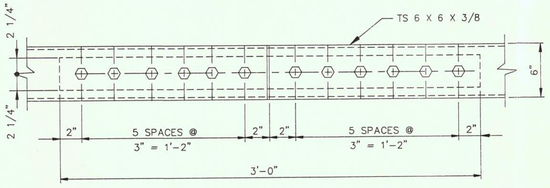
STATE OF MICHIGAN — STEVEN J. HERTH — ENGINEER — No. 33400 — LICENSED PROFESSIONAL ENGINEER

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MICHIGAN
DATE: 5/24/91 REG. NO. 33400

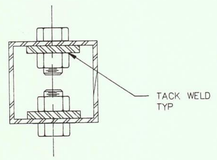
DRAWN BY:	BAC
CHECKED BY:	BLH
DATE:	5/22/91

304'-7 1/2" X 8'-8"
PEDESTRIAN BRIDGE
110'-2 1/2" (SPAN #2)
ANN ARBOR, MI

SHEET NO. 4 OF 7 — JOB # 91106



PLAN – TOP & BOTTOM FACE



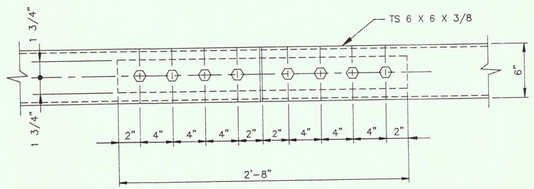
SECTION

MATERIALS (PER SPLICE)

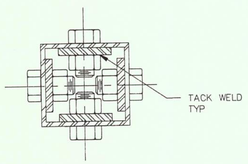
24 – 1"ø X 2 3/4" LONG
A325 BOLTS AND NUTS (TYPE 3)

2 – 4 1/2" X 1" X 3'-0"
ASTM A588 PLATES

5/4 TOP CHORD SPLICE



PLAN – TOP & BOTTOM FACE



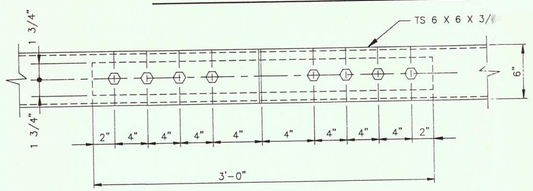
SECTION

MATERIALS (PER SPLICE)

32 – 1"ø X 2 1/2" LONG
A325 BOLTS AND NUTS (TYPE 3)

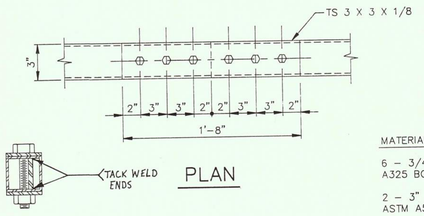
2 – 3 1/2" X 3/4" X 2'-8"
ASTM A588 PLATES

2 – 3 1/2" X 3/4" X 3'-0"
ASTM A588 PLATES



PLAN – SIDE FACE

6/4 BOTTOM CHORD SPLICE



PLAN

SECTION

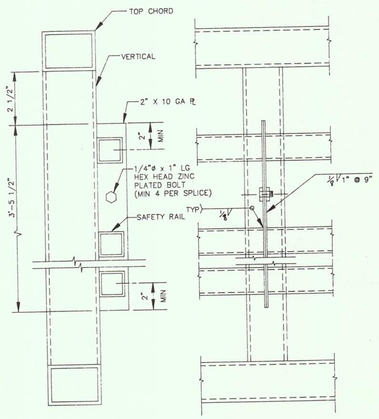
MATERIALS (PER SPLICE)

6 – 3/4"ø X 5" LONG
A325 BOLTS AND NUTS (TYPE 3)

2 – 3" X 1/2" X 1'-8"
ASTM A588 PLATES

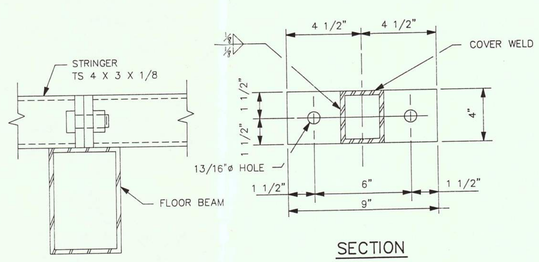
2 - 2 11/16" x 3/8" x 10"
ASTM A588 PLATES

7,9/4 DIAGONAL SPLICE
BRACE DIAGONAL SPLICE



SECTION ELEVATION

8/4 SAFETY RAIL SPLICE



SIDE ELEVATION

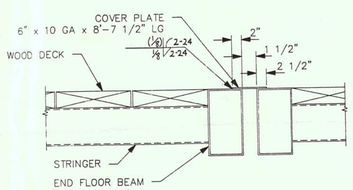
SECTION

MATERIAL (PER SPLICE)

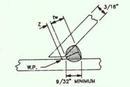
2 – 3/4"ø X 2" LONG
A325 BOLTS & NUTS (TYPE 3)

2 – 4" X 3/8" X 9"
ASTM A588 PLATES
W/(2) 13/16"ø HOLES

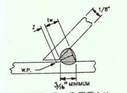
10/4 STRINGER SPLICE



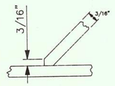
11/4 COVER PLATE DETAIL
(EXPANSION END ONLY)



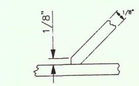
16/4 WELD DETAIL



14/4 WELD DETAIL



17/4 DETAIL
TYP FILLET WELD PREPARATION AT TOE OF DIAGONAL



18/4 DETAIL
TYP FILLET WELD PREPARATION AT TOE OF DIAGONAL AND BRACE DIAGONAL

CONTINENTAL BRIDGE — ALEXANDRIA, MN — 612-852-7500

DATE:	LEVEL:	REVISION:	

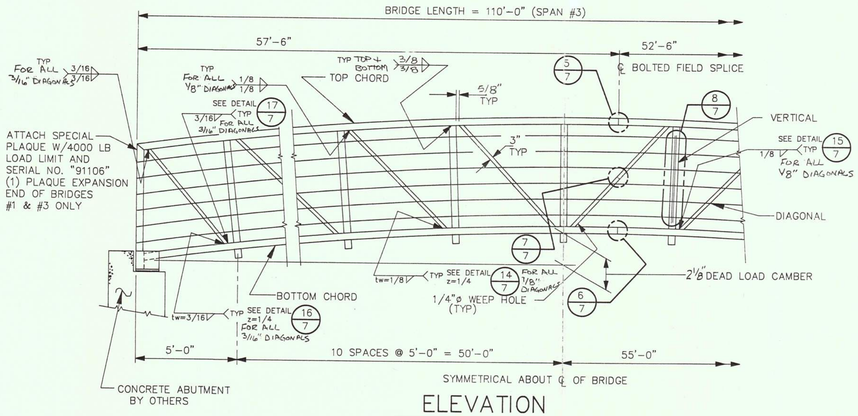
STATE OF MICHIGAN * LICENSED PROFESSIONAL ENGINEER *
STEVEN J. HERTH ENGINEER No. 33400

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MICHIGAN
DATE: 5/24/91 REG. NO. 33400

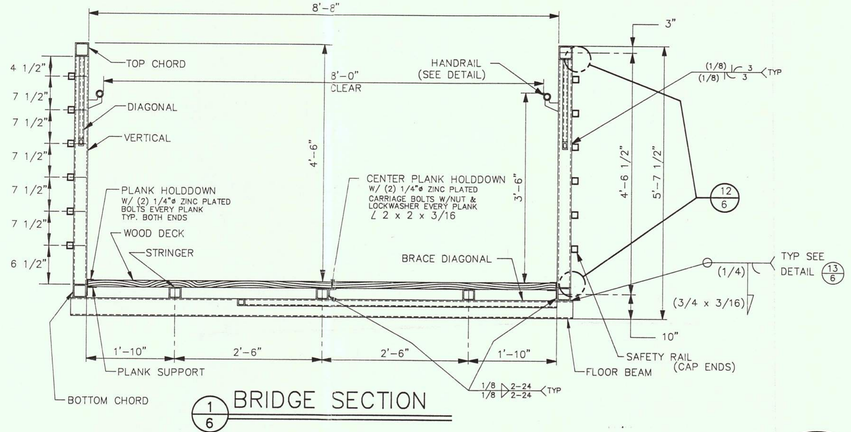
DRAWN BY: RAL
CHECKED BY: BLH
DATE: 5/24/91

304'-7 1/2" X 8'-8"
PEDESTRIAN BRIDGE
110'-2 1/2" SPAN #2 SPLICE ~~SHEET~~
ANN ARBOR, MI

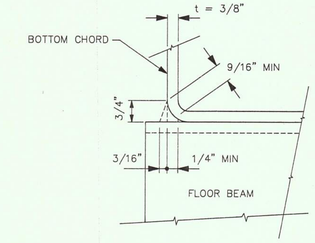
SHEET NO. 5 OF 7
JOB # 91106



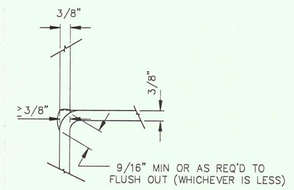
ELEVATION



1 / 6 BRIDGE SECTION



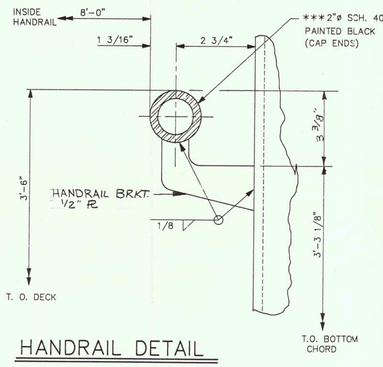
13 / 6 FLOOR BEAM WELD DETAIL



MATCHED EDGES OF VERTICALS TO BOTH CHORDS TO BE PARTIAL PENETRATION WELDS

12 / 6 WELD DETAIL

NOTE:
*** HANDRAILS TO BE PRIMED W/RETARDO RUST INHIBITIVE PRIMER 163, REC #20 AND PAINTED WITH A TOP COAT OF RETARDO RUST INHIBITIVE PAINT #163, BLACK #80 AS MANUFACTURED BY BENJAMIN MOORE PAINTS. TOUCH UP PAINT TO BE PROVIDED.



HANDRAIL DETAIL

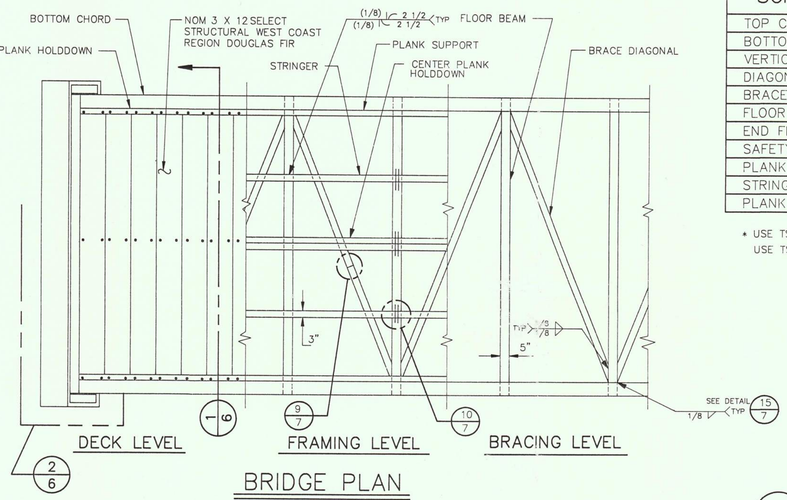
GENERAL NOTES

1. DESIGN STRESSES ARE IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO), 14TH EDITION.
2. BRIDGE MEMBERS ARE FABRICATED FROM HIGH STRENGTH, SELF-WEATHERING, LOW ALLOY, ATMOSPHERIC CORROSION RESISTANT ASTM A847 COLD-FORMED WELDED SQUARE AND RECTANGULAR TUBING, AND ASTM A588, ASTM A606, OR ASTM A242 PLATE AND STRUCTURAL SHAPES (FY = 50,000 P.S.I.).
3. BRIDGE DECKING NOMINAL 3-INCH THICK SELECT STRUCTURAL WEST COAST REGION DOUGLAS FIR. TIMBER DECK MATERIAL SHALL BE TREATED WITH CHROMATED COPPER ARSENATE (CCA) TO A .4 PCF RETENTION,OR TO REFUSAL.
4. E80 SERIES ELECTRODES FOR WELDING.
5. ALL TOP AND BOTTOM CHORD SHOP SPLICES TO BE COMPLETE PENETRATION TYPE WELDS. WELD BETWEEN TOP CHORD AND END VERTICAL SHALL BE PARTIAL PENETRATION.
6. UNLESS OTHERWISE NOTED, WELDED CONNECTIONS SHALL BE FILLET WELDS (OR HAVE THE EFFECTIVE THROAT OF A FILLET WELD) OF A SIZE EQUAL TO THE THICKNESS OF THE LIGHTEST GAGE MEMBER IN THE CONNECTION. WELDS SHALL BE APPLIED AS FOLLOWS:
   - A) BOTH ENDS OF VERTICALS, DIAGONALS, AND FLOOR BEAMS SHALL BE WELDED ALL AROUND.
   - B) BRACE DIAGONALS WILL BE WELDED FOR FULL LENGTH OF TOP, BOTTOM AND OUTSIDE VERTICAL FACES.
   - C) BOTTOM OF STRINGERS WILL BE STITCH WELDED TO TOP OF FLOOR BEAMS.
   - D) MISCELLANEOUS NON-STRUCTURAL MEMBERS WILL BE STITCH WELDED TO THEIR SUPPORTING MEMBERS.
7. BRIDGE DESIGN WAS ONLY BASED ON COMBINATIONS OF THE FOLLOWING LOADS WHICH WILL PRODUCE MAXIMUM CRITICAL MEMBER STRESSES.
   - A) 85 PSF UNIFORM LIVE LOADING ON THE FULL DECK AREA OR 20 PSF UNIFORM LIVE LOADING ON THE FULL DECK AREA PLUS ONE 4,000 POUND VEHICLE LOAD.
   - B) 30 PSF WIND LOAD ON THE FULL HEIGHT OF THE BRIDGE, AS IF ENCLOSED.
   - C) 20 PSF UPWARD FORCE APPLIED AT THE WINDWARD QUARTER POINT OF THE TRANSVERSE BRIDGE WIDTH (AASHTO 3.15.3).
   - NOTE: 85 PSF UNIFORM LIVE LOAD HAS BEEN REDUCED PER UBC SECTION 2306.
8. CLEANING: ALL EXPOSED SURFACES OF STEEL SHALL BE CLEANED IN ACCORDANCE WITH STEEL STRUCTURES PAINTING COUNCIL SURFACES PREPARATION SPECIFICATIONS NO. 6 COMMERCIAL BLAST CLEANING. SSPC-SP6-63.

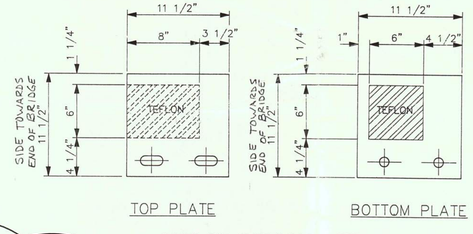
SCHEDULE OF MEMBER SIZES

TOP CHORD	TS 6 x 6 x 3/8
BOTTOM CHORD	TS 6 x 6 x 3/8
VERTICAL	TS 6 x 6 x 3/8
DIAGONAL	TS 3 x 3 x 1/8 *
BRACE DIAGONAL	TS 3 x 3 x 1/8
FLOOR BEAM	TS 7 x 5 x 1/4
END FLOOR BEAM	TS 10 x 4 x 3/16
SAFETY RAIL	TS 1 1/2 x 1 1/2 x 1/8
PLANK HOLDDOWN	L 1-1/4 x 1-1/4 x 1/8
STRINGER	TS 4 x 3 x 1/8
PLANK SUPPORT	L 1-1/4 x 1-1/4 x 1/8

* USE TS 4 x 3 x 3/16 END 2 BAYS , TYP BOTH ENDS.
USE TS 3 x 3 x 3/16 NEXT 3 BAYS, TYP BOTH ENDS.

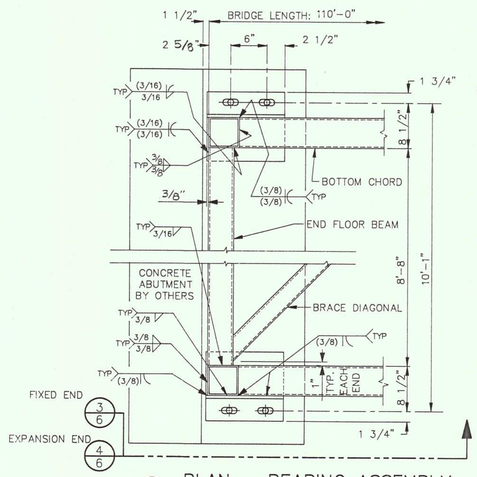


BRIDGE PLAN

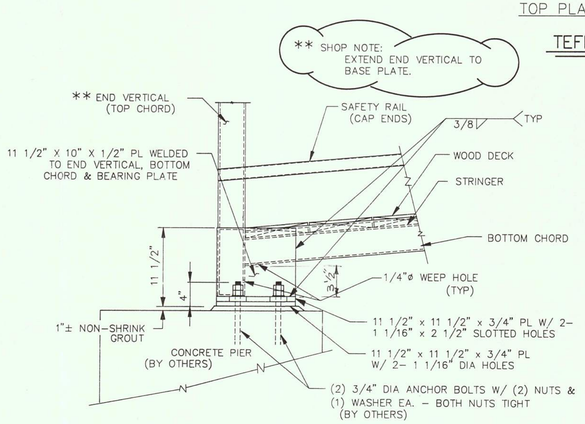


TOP PLATE BOTTOM PLATE

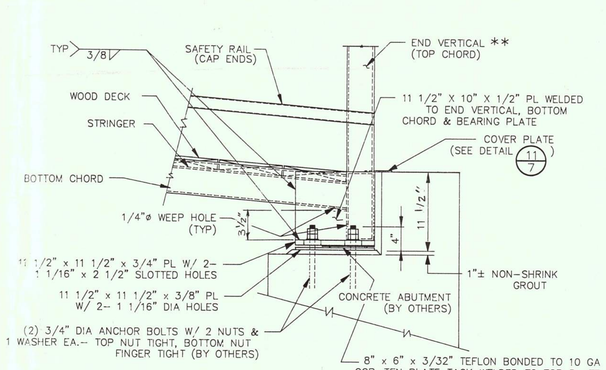
TEFLON BEARING DETAIL



PLAN – BEARING ASSEMBLY



SIDE VIEW – BEARING ASSEMBLY (FIXED END)



SIDE VIEW – BEARING ASSEMBLY (EXPANSION END)

CONTINENTAL BRIDGE — ALEXANDRIA, MN — 612-852-7500

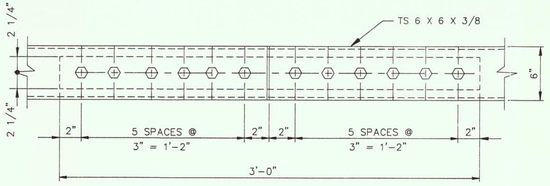
DATE:	LEVEL:	REVISION:

STEVEN J. HERTH ENGINEER No. 33400 — I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MICHIGAN
DATE: 5/24/91 REG. NO. 33400

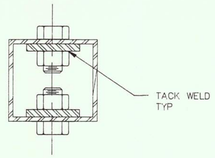
DRAWN BY:	BAC
CHECKED BY:	BLH
DATE:	5/22/91

304'-7 1/2" X 8'-8"
PEDESTRIAN BRIDGE
110'-0" (SPAN #3)
ANN ARBOR, MI

SHEET NO. 6 OF 7 — JOB # 91106



PLAN – TOP & BOTTOM FACE



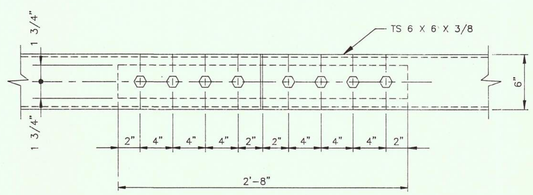
SECTION

MATERIALS (PER SPLICE)

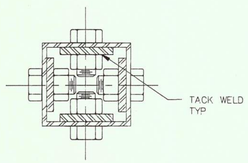
24 – 1"ø X 2 3/4" LONG
A325 BOLTS AND NUTS (TYPE 3)

2 – 4 1/2" X 1" X 3'-0"
ASTM A588 PLATES

5/6 TOP CHORD SPLICE



PLAN – TOP & BOTTOM FACE



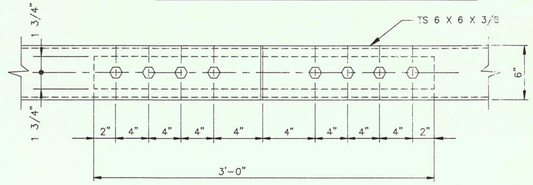
SECTION

MATERIALS (PER SPLICE)

32 – 1"ø X 2 1/2" LONG
A325 BOLTS AND NUTS (TYPE 3)

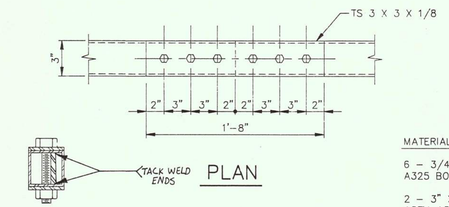
2 – 3 1/2" X 3/4" X 2'-8"
ASTM A588 PLATES

2 – 3 1/2" X 3/4" X 3'-0"
ASTM A588 PLATES



PLAN – SIDE FACE

6/6 BOTTOM CHORD SPLICE



PLAN

SECTION

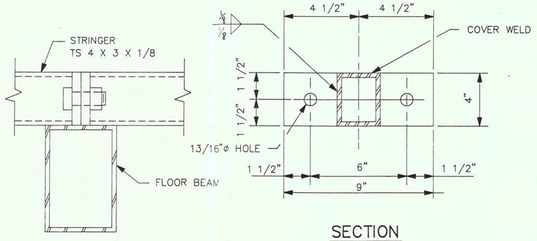
MATERIALS (PER SPLICE)

6 – 3/4"ø X 5" LONG
A325 BOLTS AND NUTS (TYPE 3)

2 – 3" X 1/2" X 1'-8"
ASTM A588 PLATES

2 -2 7/16" x 3/8" x 10"
ASTM A588 PLATES

7,9/6 DIAGONAL SPLICE
BRACE DIAGONAL SPLICE



SIDE ELEVATION

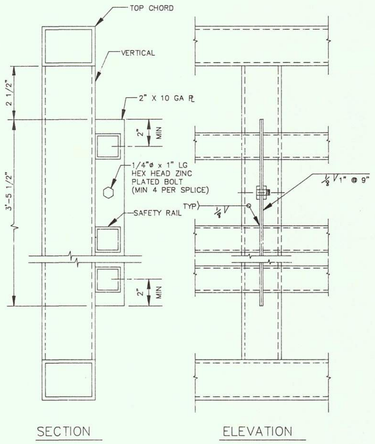
SECTION

MATERIAL (PER SPLICE)

2 – 3/4"ø X 2" LONG
A325 BOLTS & NUTS (TYPE 3)

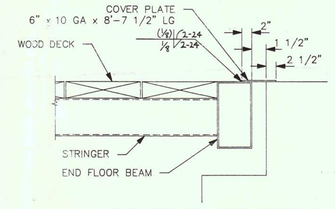
2 – 4" X 3/8" X 9"
ASTM A588 PLATES
W/(2) 13/16"ø HOLES

10/6 STRINGER SPLICE

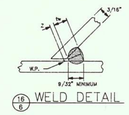


SECTION ELEVATION

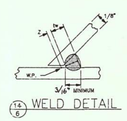
8/6 SAFETY RAIL SPLICE



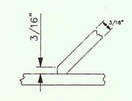
11/6 COVER PLATE DETAIL
(EXPANSION END ONLY)



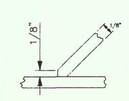
16/6 WELD DETAIL



14/6 WELD DETAIL



17/6 DETAIL
TYP FILLET WELD
PREPARATION AT
TOE OF DIAGONAL



19/6 DETAIL
TYP FILLET WELD
PREPARATION AT
TOE OF DIAGONAL
AND BRACE DIAGONAL

CONTINENTAL BRIDGE — ALEXANDRIA, MN — 612-852-7500

DATE:	LEVEL:	REVISION:

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MICHIGAN

STEVEN J. HERTH ENGINEER No. 33400

DATE: 5/24/91 REG. NO. 33400

DRAWN BY: RAL
CHECKED BY: BLH
DATE: 5/24/91

304'-7 1/2" X 8'-8"
PEDESTRIAN BRIDGE
110'-0" SPAN #3 SPLICE SHEET
ANN ARBOR, MI

SHEET NO. 7 OF 7

JOB # 91106

ATTACHMENT B
LEGAL STATUS OF OFFEROR

(The Respondent shall fill out the provision and strike out the remaining ones.)

The Respondent is:

- A corporation organized and doing business under the laws of the state of _____, for whom _____ bearing the office title of _____, whose signature is affixed to this proposal, is authorized to execute contracts on behalf of respondent.*

  *If not incorporated in Michigan, please attach the corporation's Certificate of Authority

- A limited liability company doing business under the laws of the State of _____, whom _____ bearing the title of _____ whose signature is affixed to this proposal, is authorized to execute contract on behalf of the LLC.

- A partnership organized under the laws of the State of _____ and filed with the County of _____ , whose members are (attach list including street and mailing address for each.)

- An individual, whose signature with address, is affixed to this RFP.

Respondent has examined the basic requirements of this RFP and its scope of services, including all Addendum (if applicable) and hereby agrees to offer the services as specified in the RFP.

_____Date: _____,
Signature

(Print) Name _____ Title _____

Firm: _____

Address: _____

Contact Phone _____ Fax _____

Email _____

ATTACHMENT C
CITY OF ANN ARBOR DECLARATION OF COMPLIANCE

Non-Discrimination Ordinance

The "non discrimination by city contractors" provision of the City of Ann Arbor Non-Discrimination Ordinance (Ann Arbor City Code Chapter 112, Section 9:158) requires all contractors proposing to do business with the City to treat employees in a manner which provides equal employment opportunity and does not discriminate against any of their employees, any City employee working with them, or any applicant for employment on the basis of actual or perceived age, arrest record, color, disability, educational association, familial status, family responsibilities, gender expression, gender identity, genetic information, height, HIV status, marital status, national origin, political beliefs, race, religion, sex, sexual orientation, source of income, veteran status, victim of domestic violence or stalking, or weight. It also requires that the contractors include a similar provision in all subcontracts that they execute for City work or programs.

In addition the City Non-Discrimination Ordinance requires that all contractors proposing to do business with the City of Ann Arbor must satisfy the contract compliance administrative policy adopted by the City Administrator. A copy of that policy may be obtained from the Purchasing Manager

The Contractor agrees:

(a) To comply with the terms of the City of Ann Arbor's Non-Discrimination Ordinance and contract compliance administrative policy.

(b) To post the City of Ann Arbor's Non-Discrimination Ordinance Notice in every work place or other location in which employees or other persons are contracted to provide services under a contract with the City.

(c) To provide documentation within the specified time frame in connection with any workforce verification, compliance review or complaint investigation.

(d) To permit access to employees and work sites to City representatives for the purposes of monitoring compliance, or investigating complaints of non-compliance.

The undersigned states that he/she has the requisite authority to act on behalf of his/her employer in these matters and has offered to provide the services in accordance with the terms of the Ann Arbor Non-Discrimination Ordinance. The undersigned certifies that he/she has read and is familiar with the terms of the Non-Discrimination Ordinance, obligates the Contractor to those terms and acknowledges that if his/her employer is found to be in violation of Ordinance it may be subject to civil penalties and termination of the awarded contract.

_____
Company Name

_____
Signature of Authorized Representative Date

_____
Print Name and Title

_____
Address, City, State, Zip

_____
Phone/Email address

Questions about the Notice or the City Administrative Policy, Please contact:
Procurement Office of the City of Ann Arbor
(734) 794-6500

Revised 3/31/15 Rev. 0 NDO-2

.

ATTACHMENT D
CITY OF ANN ARBOR
LIVING WAGE ORDINANCE DECLARATION OF COMPLIANCE

The Ann Arbor Living Wage Ordinance (Section 1:811-1:821 of Chapter 23 of Title I of the Code) requires that an employer who is (a) a contractor providing services to or for the City for a value greater than $10,000 for any twelve-month contract term, or (b) a recipient of federal, state, or local grant funding administered by the City for a value greater than $10,000, or (c) a recipient of financial assistance awarded by the City for a value greater than $10,000, shall pay its employees a prescribed minimum level of compensation (i.e., Living Wage) for the time those employees perform work on the contract or in connection with the grant or financial assistance. The Living Wage must be paid to these employees for the length of the contract/program.

Companies employing fewer than 5 persons and non-profits employing fewer than 10 persons are exempt from compliance with the Living Wage Ordinance. If this exemption applies to your company/non-profit agency please check here [___] *No. of employees__*

The Contractor or Grantee agrees:

(a) To pay each of its employees whose wage level is not required to comply with federal, state or local prevailing wage law, for work covered or funded by a contract with or grant from the City, no less than the Living Wage. The current Living Wage is defined as $17.42/hour for those employers that provide employee health care (as defined in the Ordinance at Section 1:815 Sec. 1 (a)), or no less than $19.42/hour for those employers that do not provide health care. The Contractor or Grantor understands that the Living Wage is adjusted and established annually on April 30 in accordance with the Ordinance and covered employers shall be required to pay the adjusted amount thereafter to be in compliance with Section 1:815(3).

Check the applicable box below which applies to your workforce

[___] Employees who are assigned to any covered City contract/grant will be paid at or above the applicable living wage without health benefits

[___] Employees who are assigned to any covered City contract/grant will be paid at or above the applicable living wage with health benefits

(b) To post a notice approved by the City regarding the applicability of the Living Wage Ordinance in every work place or other location in which employees or other persons contracting for employment are working.

(c) To provide to the City payroll records or other documentation within ten (10) business days from the receipt of a request by the City.

(d) To permit access to work sites to City representatives for the purposes of monitoring compliance, and investigating complaints or non-compliance.

(e) To take no action that would reduce the compensation, wages, fringe benefits, or leave available to any employee covered by the Living Wage Ordinance or any person contracted for employment and covered by the Living Wage Ordinance in order to pay the living wage required by the Living Wage Ordinance.

The undersigned states that he/she has the requisite authority to act on behalf of his/her employer in these matters and has offered to provide the services or agrees to accept financial assistance in accordance with the terms of the Living Wage Ordinance. The undersigned certifies that he/she has read and is familiar with the terms of the Living Wage Ordinance, obligates the Employer/Grantee to those terms and acknowledges that if his/her employer is found to be in violation of Ordinance it may be subject to civil penalties and termination of the awarded contract or grant of financial assistance.

_____	_____
Company Name	Street Address
_____	_____
Signature of Authorized Representative Date	City, State, Zip
_____	_____
Print Name and Title	Phone/Email address

ATTACHMENT E

VENDOR CONFLICT OF INTEREST DISCLOSURE FORM

All vendors interested in conducting business with the City of Ann Arbor must complete and return the Vendor Conflict of Interest Disclosure Form in order to be eligible to be awarded a contract. Please note that all vendors are subject to comply with the City of Ann Arbor's conflict of interest policies as stated within the certification section below.

If a vendor has a relationship with a City of Ann Arbor official or employee, an immediate family member of a City of Ann Arbor official or employee, the vendor shall disclose the information required below.

1. No City official or employee or City employee's immediate family member has an ownership interest in vendor's company or is deriving personal financial gain from this contract.
2. No retired or separated City official or employee who has been retired or separated from the City for less than one (1) year has an ownership interest in vendor's Company.
3. No City employee is contemporaneously employed or prospectively to be employed with the vendor.
4. Vendor hereby declares it has not and will not provide gifts or hospitality of any dollar value or any other gratuities to any City employee or elected official to obtain or maintain a contract.
5. Please note any exceptions below:

Conflict of Interest Disclosure*	
Name of City of Ann Arbor employees, elected officials or immediate family members with whom there may be a potential conflict of interest.	( ) Relationship to employee ( ) Interest in vendor's company ( ) Other (please describe in box below)

*Disclosing a potential conflict of interest does not disqualify vendors. In the event vendors do not disclose potential conflicts of interest and they are detected by the City, vendor will be exempt from doing business with the City.

I certify that this Conflict of Interest Disclosure has been examined by me and that its contents are true and correct to my knowledge and belief and I have the authority to so certify on behalf of the Vendor by my signature below:		
Vendor Name	**Vendor Phone Number**	
Signature of Vendor Authorized Representative	**Date**	**Printed Name of Vendor Authorized Representative**

ATTACHMENT F
CITY OF ANN ARBOR NON-DISCRIMINATION ORDINANCE

Relevant provisions of Chapter 112, Nondiscrimination, of the Ann Arbor City Code are included below. You can review the entire ordinance at www.a2gov.org/humanrights.

Intent: **It is the intent of the city that no individual be denied equal protection of the laws; nor shall any individual be denied the enjoyment of his or her civil or political rights or be discriminated against because of actual or perceived age, arrest record, color, disability, educational association, familial status, family responsibilities, gender expression, gender identity, genetic information, height, HIV status, marital status, national origin, political beliefs, race, religion, sex, sexual orientation, source of income, veteran status, victim of domestic violence or stalking, or weight.**

Discriminatory Employment Practices: **No person shall discriminate in the hire, employment, compensation, work classifications, conditions or terms, promotion or demotion, or termination of employment of any individual. No person shall discriminate in limiting membership, conditions of membership or termination of membership in any labor union or apprenticeship program.**

Discriminatory Effects: **No person shall adopt, enforce or employ any policy or requirement which has the effect of creating unequal opportunities according to actual or perceived age, arrest record, color, disability, educational association, familial status, family responsibilities, gender expression, gender identity, genetic information, height, HIV status, marital status, national origin, political beliefs, race, religion, sex, sexual orientation, source of income, veteran status, victim of domestic violence or stalking, or weight for an individual to obtain housing, employment or public accommodation, except for a bona fide business necessity. Such a necessity does not arise due to a mere inconvenience or because of suspected objection to such a person by neighbors, customers or other persons.**

Nondiscrimination by City Contractors: **All contractors proposing to do business with the City of Ann Arbor shall satisfy the contract compliance administrative policy adopted by the City Administrator in accordance with the guidelines of this section. All city contractors shall ensure that applicants are employed and that employees are treated during employment in a manner which provides equal employment opportunity and tends to eliminate inequality based upon any classification protected by this chapter. All contractors shall agree not to discriminate against an employee or applicant for employment with respect to hire, tenure, terms, conditions, or privileges of employment, or a matter directly or indirectly related to employment, because of any applicable protected classification. All contractors shall be required to post a copy of Ann Arbor's Non-Discrimination Ordinance at all work locations where its employees provide services under a contract with the city.**

Complaint Procedure: **If any individual believes there has been a violation of this chapter, he/she may file a complaint with the City's Human Rights Commission. The complaint must be filed within 180 calendar days from the date of the individual's knowledge of the allegedly discriminatory action or 180 calendar days from the date when the individual should have known of the allegedly discriminatory action. A complaint that is not filed within this timeframe cannot be considered by the Human Rights Commission. To file a complaint, first complete the complaint form, which is available at www.a2gov.org/humanrights. Then submit it to the Human Rights Commission by e-mail (hrc@a2gov.org), by mail (Ann Arbor Human Rights Commission, PO Box 8647, Ann Arbor, MI 48107), or in person (City Clerk's Office). For further information, please call the commission at 734-794-6141 or e-mail the commission at hrc@a2gov.org.**

Private Actions For Damages or Injunctive Relief: **To the extent allowed by law, an individual who is the victim of discriminatory action in violation of this chapter may bring a civil action for appropriate injunctive relief or damages or both against the person(s) who acted in violation of this chapter.**

THIS IS AN OFFICIAL GOVERNMENT NOTICE AND
MUST BE DISPLAYED WHERE EMPLOYEES CAN READILY SEE IT.

ATTACHMENT G

CITY OF ANN ARBOR LIVING WAGE ORDINANCE

RATE EFFECTIVE APRIL 30, 2026 - ENDING APRIL 29, 2027

$17.42 per hour
If the employer provides health care benefits*

$19.42 per hour
If the employer does **NOT** provide health care benefits*

Employers providing services to or for the City of Ann Arbor or recipients of grants or financial assistance from the City of Ann Arbor for a value of more than $10,000 in a twelve-month period of time must pay those employees performing work on a City of Ann Arbor contract or grant, the above living wage.

ENFORCEMENT

The City of Ann Arbor may recover back wages either administratively or through court action for the employees that have been underpaid in violation of the law. Persons denied payment of the living wage have the right to bring a civil action for damages in addition to any action taken by the City.

Violation of this Ordinance is punishable by fines of not more than $500/violation plus costs, with each day being considered a separate violation. Additionally, the City of Ann Arbor has the right to modify, terminate, cancel or suspend a contract in the event of a violation of the Ordinance.

* Health Care benefits include those paid for by the employer or making an employer contribution toward the purchase of health care. The employee contribution must not exceed $.50 an hour for an average work week; and the employer cost or contribution must equal no less than $1/hr for the average work week.

The Law Requires Employers to Display This Poster Where Employees Can Readily See It.

For Additional Information or to File a Complaint contact
Colin Spencer at 734/794-6500 or cspencer@a2gov.org

APPENDIX A - SAMPLE CONTRACT

PROFESSIONAL SERVICES AGREEMENT BETWEEN [TBD] AND THE CITY OF ANN ARBOR FOR [TBD]

This agreement ("Agreement") is between the City of Ann Arbor, a Michigan municipal corporation, 301 E. Huron St. Ann Arbor, Michigan 48104 ("City"), and [TBD], a(n) [TBD] _____, [TBD], [TBD], [TBD] [TBD] ("Contractor"). City and Contractor agree as follows:

1. DEFINITIONS

Administering Service Area/Unit means [TBD].

Contract Administrator means [TBD], acting personally or through any assistants authorized by the Administrator/Manager of the Administering Service Area/Unit.

Deliverables means all documents, plans, specifications, reports, recommendations, and other materials developed for and delivered to City by Contractor under this Agreement.

Effective Date means the date this Agreement is signed by the last party to sign it.

Project means [TBD].

Services means [TBD] as further described in Exhibit A.

2. DURATION

A. The obligations of this Agreement shall apply beginning on the Effective Date and this Agreement shall remain in effect until satisfactory completion of the Services unless terminated as provided for in this Agreement.

3. SERVICES

A. Contractor shall perform all Services in compliance with this Agreement. The City retains the right to make changes to the quantities of Services within the general scope of the Agreement at any time by a written order. If the changes add to or deduct from the extent of the Services, the compensation shall be adjusted accordingly. All such changes shall be executed under the conditions of the original Agreement.

B. Quality of Services under this Agreement shall be of the level of quality performed by persons regularly rendering this type of service. Determination of acceptable quality shall be made solely by the Contract Administrator.

C. Contractor shall perform Services in compliance with all applicable statutory, regulatory, and contractual requirements now or hereafter in effect. Contractor shall also comply with and be subject to City policies applicable to independent contractors.

D. Contractor may rely upon the accuracy of reports and surveys provided by the City, except when a defect should have been apparent to a reasonably competent professional or when Contractor has actual notice of a defect.

4. INDEPENDENT CONTRACTOR

A. The parties agree that at all times and for all purposes under the terms of this Agreement each party's relationship to any other party shall be that of an independent contractor. Each party is solely responsible for the acts of its own employees, agents, and servants. No liability, right, or benefit arising out of any employer-employee relationship, either express or implied, shall arise or accrue to any party as a result of this Agreement.

B. Contractor does not have any authority to execute any contract or agreement on behalf of the City, and is not granted any authority to assume or create any obligation or liability on the City's behalf, or to bind the City in any way.

5. COMPENSATION OF CONTRACTOR

A. The total amount of compensation paid to Contractor under this Agreement shall not exceed $0.00, which shall be paid upon invoice by Contractor to the City for services rendered according to the schedule in Exhibit B. Compensation of Contractor includes all reimbursable expenses unless a schedule of reimbursable expenses is included in an attached Exhibit B. Expenses outside those identified in the attached schedule must be approved in advance by the Contract Administrator.

B. Payment shall be made monthly following receipt of invoices submitted by Contractor and approved by the Contract Administrator, unless a different payment schedule is specified in Exhibit B.

C. Contractor shall be compensated for additional work or Services beyond those specified in this Agreement only when the scope of and compensation for the additional work or Services have received prior written approval of the Contract Administrator.

D. Contractor shall keep complete records of work performed (e.g. tasks performed, hours allocated, etc.) so that the City may verify invoices submitted by Contractor. Such records shall be made available to the City upon request and submitted in summary form with each invoice.

6. INSURANCE/INDEMNIFICATION

A. Contractor shall procure and maintain from the Effective Date or Commencement Date of this Agreement (whichever is earlier) through the conclusion of this Agreement, such insurance policies, including those required by this Agreement, as will protect itself and the City from all claims for bodily injury, death, or property damage that may arise under this Agreement; whether the act(s) or omission(s) giving rise to the claim were made by Contractor, Contractor's subcontractor, or anyone employed by Contractor

or Contractor's subcontractor directly or indirectly. Prior to commencement of work under this Agreement, Contractor shall provide documentation to the City demonstrating Contractor has obtained the policies and endorsements required by this Agreement. Contractor shall provide such documentation in a form and manner satisfactory to the City. Currently, the City requires insurance to be submitted through its contractor, myCOI. Contractor shall add registration@mycoitracking.com to its safe sender's list so that it will receive necessary communication from myCOI. When requested, Contractor shall provide the same documentation for its subcontractors.

B. All insurance providers of Contractor shall be authorized to do business in the State of Michigan and shall carry and maintain a minimum rating assigned by A.M. Best & Company's Key Rating Guide of "A-" Overall and a minimum Financial Size Category of "V". Insurance policies and certificates issued by non-authorized insurance companies are not acceptable unless approved in writing by the City.

C. To the fullest extent permitted by law, Contractor shall indemnify, defend, and hold the City and its officers, employees, and agents harmless from all suits, claims, judgments, and expenses, including attorney's fees, resulting or alleged to result, from an act or omission by Contractor or Contractor's employees or agents occurring in the performance or breach of this Agreement, except to the extent that any suit, claim, judgment, or expense are finally judicially determined to have resulted from the City's negligence, willful misconduct, or failure to comply with a material obligation of this Agreement. The obligations of this paragraph shall survive the expiration or termination of this Agreement.

D. Contractor is required to have the following minimum insurance coverage:

1. Professional Liability Insurance or Errors and Omissions Insurance protecting Contractor and its employees - $1,000,000.

2. Commercial General Liability Insurance equivalent to, as a minimum, Insurance Services Office form CG 00 01 04 13 or current equivalent. The City of Ann Arbor shall be an additional insured. There shall be no added exclusions or limiting endorsements that diminish the City's protections as an additional insured under the policy.

$1,000,000	Each occurrence as respect Bodily Injury Liability or Property Damage Liability, or both combined
$2,000,000	Per project General Aggregate
$1,000,000	Personal and Advertising Injury

3. Worker's Compensation Insurance in accordance with all applicable state and federal statutes; also, Employers Liability Coverage for:

Bodily Injury by Accident - $500,000 each accident
Bodily Injury by Disease - $500,000 each employee
Bodily Injury by Disease - $500,000 each policy limit

4. Motor Vehicle Liability Insurance equivalent to, as a minimum, Insurance Services Office form CA 00 01 10 13 or current equivalent. Coverage shall include all owned vehicles, all non-owned vehicles and all hired vehicles. The

City of Ann Arbor shall be an additional insured. There shall be no added exclusions or limiting endorsements that diminish the City's protections as an additional insured under the policy. The limits of liability shall be $1,000,000 for each occurrence as respects Bodily Injury Liability or Property Damage Liability, or both combined.

5. Umbrella/Excess Liability Insurance shall be provided to apply in excess of the Commercial General Liability, Employers Liability and the Motor Vehicle coverage enumerated above, for each occurrence and for aggregate in the amount of $1,000,000.

E. Commercial General Liability Insurance and Motor Vehicle Liability Insurance (if required by this Agreement) shall be considered primary as respects any other valid or collectible insurance that the City may possess, including any self-insured retentions the City may have; and any other insurance the City does possess shall be considered excess insurance only and shall not be required to contribute with this insurance. Contractor agrees to waive any right of recovery by its insurer against the City for any insurance listed herein.

F. Insurance companies and policy forms are subject to approval of the City Attorney, which approval shall not be unreasonably withheld. Documentation must provide and demonstrate an unconditional and unqualified 30-day written notice of cancellation in favor of the City of Ann Arbor. Further, the documentation must explicitly state the following: (a) the policy number(s); name of insurance company; name(s), email address(es), and address(es) of the agent or authorized representative; name and address of insured; project name; policy expiration date; and specific coverage amounts; (b) any deductibles or self-insured retentions, which may be approved by the City in its sole discretion; (c) that the policy conforms to the requirements specified. Contractor shall furnish the City with satisfactory certificates of insurance and endorsements prior to commencement of any work. If any of the above coverages expire by their terms during the term of this Agreement, Contractor shall deliver proof of renewal and/or new policies and endorsements to the Administering Service Area/Unit at least ten days prior to the expiration date.

7. WAGE AND NONDISCRIMINATION REQUIREMENTS

A. Nondiscrimination. Contractor shall comply, and require its subcontractors to comply, with the nondiscrimination provisions of MCL 37.2209. Contractor shall comply with the provisions of Section 9:158 of Chapter 112 of Ann Arbor City Code and assure that Contractor's applicants for employment and employees are treated in a manner which provides equal employment opportunity.

B. Living Wage. If Contractor is a "covered employer" as defined in Chapter 23 of Ann Arbor City Code, Contractor must comply with the living wage provisions of Chapter 23 of Ann Arbor City Code, which requires Contractor to pay those employees providing Services to the City under this Agreement a "living wage," as defined in Section 1:815 of the Ann Arbor City Code, as adjusted in accordance with Section 1:815(3); to post a notice approved by the City of the applicability of Chapter 23 in every location in which regular or contract employees providing services under this Agreement are working; to maintain records of compliance; if requested by the City, to provide documentation to verify compliance; to take no action that would reduce the

compensation, wages, fringe benefits, or leave available to any employee or person contracted for employment in order to pay the living wage required by Section 1:815; and otherwise to comply with the requirements of Chapter 23.

8. REPRESENTATIONS AND WARRANTIES BY CONTRACTOR

A. Contractor warrants that the quality of Services shall conform to the level of quality performed by persons regularly rendering this type of service.

B. Contractor warrants that it has all the skills, experience, and professional and other licenses necessary to perform the Services.

C. Contractor warrants that it has available, or will engage at its own expense, sufficient trained employees to provide the Services.

D. Contractor warrants that it has no personal or financial interest in this Agreement other than the fee it is to receive under this Agreement. Contractor certifies that it will not acquire any such interest, direct or indirect, which would conflict in any manner with the performance of the Services. Contractor certifies that it does not and will not employ or engage any person with a personal or financial interest in this Agreement.

E. Contractor warrants that it is not, and shall not become overdue or in default to the City for any contract, debt, or any other obligation to the City, including real and personal property taxes. Further Contractor agrees that the City shall have the right to set off any such debt against compensation awarded for Services under this Agreement.

F. Contractor warrants that its bid or proposal for services under this Agreement was made in good faith, that it arrived at the costs of its proposal independently, without consultation, communication, or agreement for the purpose of restricting competition as to any matter relating to such costs with any competitor for these services; and no attempt has been made or will be made by Contractor to induce any other person or entity to submit or not to submit a bid or proposal for the purpose of restricting competition.

G. The person signing this Agreement on behalf of Contractor represents and warrants that they have express authority to sign this Agreement for Contractor and agrees to hold the City harmless for any costs or consequences of the absence of actual authority to sign.

H. The obligations, representations, and warranties of this section 8 shall survive the expiration or termination of this Agreement.

9. OBLIGATIONS OF THE CITY

A. The City shall give Contractor access to City properties and project areas as required to perform the Services.

B. The City shall notify Contractor of any defect in the Services of which the Contract Administrator has actual notice.

10. ASSIGNMENT

A. Contractor shall not subcontract or assign any portion of any right or obligation under this Agreement without prior written consent from the City. Notwithstanding any consent by the City to any assignment, Contractor shall at all times remain bound to all warranties, certifications, indemnifications, promises, and performances required of Contractor under the Agreement unless specifically released from the requirement in writing by the City.

B. Contractor shall retain the right to pledge payments due and payable under this Agreement to third parties.

11. TERMINATION OF AGREEMENT

A. If either party is in breach of this Agreement for a period of 15 days following receipt of notice from the non-breaching party with respect to the breach, the non-breaching party may pursue any remedies available against the breaching party under applicable law, including the right to terminate this Agreement without further notice. The waiver of any breach by any party to this Agreement shall not waive any subsequent breach by any party.

B. The City may terminate this Agreement, on at least 30 days' advance notice, for any reason, including convenience, without incurring any penalty, expense, or liability to Contractor, except the obligation to pay for Services actually performed under the Agreement before the termination date.

C. Contractor acknowledges that if this Agreement extends for several fiscal years, continuation of this Agreement is subject to appropriation of funds through the City budget process. If funds are not appropriated or otherwise made available, the City shall have the right to terminate this Agreement without penalty at the end of the last period for which funds have been appropriated or otherwise made available by giving written notice of termination to Contractor. The Contract Administrator shall give Contractor written notice of such non-appropriation within 30 days after the Contract Administrator has received notice of such non-appropriation.

D. The expiration or termination of this Agreement shall not release either party from any obligation or liability to the other party that has accrued at the time of expiration or termination, including a payment obligation that has already accrued and Contractor's obligation to deliver all Deliverables due as of the date of termination of the Agreement.

12. REMEDIES

A. This Agreement does not, and is not intended to, impair, divest, delegate, or contravene any constitutional, statutory, or other legal right, privilege, power, obligation, duty, or immunity of the parties.

B. All rights and remedies provided in this Agreement are cumulative and not exclusive, and the exercise by either party of any right or remedy does not preclude the exercise

of any other rights or remedies that may now or subsequently be available at law, in equity, by statute, in any other agreement between the parties, or otherwise.

C. Absent a written waiver, no act, failure, or delay by a party to pursue or enforce any right or remedy under this Agreement shall constitute a waiver of that right with regard to any existing or subsequent breach of this Agreement. No waiver of any term, condition, or provision of this Agreement, whether by conduct or otherwise, shall be deemed or construed as a continuing waiver of any term, condition, or provision of this Agreement. No waiver by either party shall subsequently affect the waiving party's right to require strict performance of this Agreement.

13. NOTICE

All notices and submissions required under this Agreement shall be delivered to the respective party in the manner described herein to the address stated below or such other address as either party may designate by prior written notice to the other. Notices given under this Agreement shall be in writing and shall be personally delivered, sent by next day express delivery service, certified mail, or first class U.S. mail postage prepaid, and addressed to the person listed below. Notice will be deemed given on the date when one of the following first occur: (1) the date of actual receipt; (2) the next business day when notice is sent next day express delivery service or personal delivery; or (3) three days after mailing first class or certified U.S. mail.

If Notice is sent to Contractor:

[TBD]
ATTN: [TBD]
[TBD]
[TBD], [TBD] [TBD]

If Notice is sent to the City:

City of Ann Arbor
ATTN: [TBD]
301 E. Huron St.
Ann Arbor, Michigan 48104

With a copy to: The City of Ann Arbor
ATTN: Office of the City Attorney
301 East Huron Street, 3rd Floor
Ann Arbor, Michigan 48104

14. CHOICE OF LAW AND FORUM

This Agreement will be governed and controlled in all respects by the laws of the State of Michigan, including interpretation, enforceability, validity and construction, excepting the principles of conflicts of law. The parties submit to the jurisdiction and venue of the Circuit Court for Washtenaw County, State of Michigan, or, if original jurisdiction can be established, the United States District Court for the Eastern District of Michigan, Southern Division, with respect to any action arising, directly or indirectly, out of this Agreement or the performance or breach of this Agreement. The parties stipulate that the venues referenced in this Agreement are convenient

and waive any claim of non-convenience.

15. OWNERSHIP OF DOCUMENTS

Upon completion or termination of this Agreement, all Deliverables prepared by or obtained by Contractor as provided under the terms of this Agreement shall be delivered to and become the property of the City. Original basic survey notes, sketches, charts, drawings, partially completed drawings, computations, quantities, and other data shall remain in the possession of Contractor as instruments of service unless specifically incorporated in a Deliverable, but shall be made available, upon request, to the City without restriction or limitation on their use. The City acknowledges that the documents are prepared only for the Services. Prior to completion of the Services the City shall have a recognized proprietary interest in the work product of Contractor.

16. CONFLICTS OF INTEREST OR REPRESENTATION

Contractor certifies it has no financial interest in the Services to be provided under this Agreement other than the compensation specified herein. Contractor further certifies that it presently has no personal or financial interest, and shall not acquire any such interest, direct or indirect, which would conflict in any manner with its performance of the Services under this Agreement.

Contractor agrees to advise the City if Contractor has been or is retained to handle any matter in which its representation is adverse to the City and to obtain the City's consent therefor. The City's prospective consent to Contractor's representation of a client in matters adverse to the City, as identified above, will not apply in any instance where, as the result of Contractor's representation, Contractor has obtained sensitive, proprietary, or otherwise confidential information of a non-public nature that, if known to another client of Contractor, could be used in any such other matter by the other client to the material disadvantage of the City. Each matter will be reviewed on a case by case basis.

17. SEVERABILITY OF PROVISIONS

Whenever possible, each provision of this Agreement will be interpreted in a manner as to be effective and valid under applicable law. However, if any provision of this Agreement or the application of any provision to any party or circumstance is prohibited by or invalid under applicable law, that provision will be ineffective to the extent of the prohibition or invalidity without invalidating the remainder of the provisions of this Agreement or the application of the provision to other parties and circumstances.

18. EXTENT OF AGREEMENT

This Agreement, together with all Exhibits constitutes the entire understanding between the City and Contractor with respect to the subject matter of the Agreement and it supersedes, unless otherwise incorporated by reference herein, all prior representations, negotiations, agreements, or understandings, whether written or oral. Neither party has relied on any prior representations in entering into this Agreement. No terms or conditions of either party's invoice, purchase order, or other administrative document shall modify the terms and conditions of this Agreement, regardless of the other party's failure to object to such terms or conditions. This Agreement shall be binding on and shall inure to the benefit of the parties to this Agreement and their permitted

successors and permitted assigns and nothing in this Agreement, express or implied, is intended to or shall confer on any other person or entity any legal or equitable right, benefit, or remedy of any nature whatsoever under or by reason of this Agreement. This Agreement may only be altered, amended, or modified by written amendment signed by Contractor and the City. This Agreement may be executed in counterparts, each of which shall be deemed an original, but all of which together shall be deemed to be one and the same agreement.

19. ELECTRONIC TRANSACTION

The parties agree that signatures on this Agreement may be delivered electronically or by facsimile in lieu of an physical signature and agree to treat electronic or facsimile signatures as binding.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK; SIGNATURE PAGES FOLLOW]

[TBD]

By: _____

Name: _____

Title: _____

Date: _____

CITY OF ANN ARBOR

By: _____

Name: Milton Dohoney Jr.

Title: City Administrator

Date: _____

Approved as to substance:

By: _____

Name: _____

Title: _____

Date: _____

Approved as to form:

By: _____

Name: Atleen Kaur

Title: City Attorney

Date: _____

EXHIBIT A

Scope of Services

EXHIBIT B

Compensation