**HERITAGE PRESERVATION APPLICATION SUMMARY**

- **Property Location:** 501 Ramsey Street Northeast to 206 Island Avenue East
- **Project Name:** Boom Island-Nicollet Island Bridge Rehabilitation
- **Prepared By:** Aaron Hanauer, City Planner, (612) 673-2494
- **Applicant:** Minneapolis Park and Recreation Board
- **Project Contact:** Daniel Elias
- **Ward:** 3
- **Neighborhood:** Nicollet Island - East Bank, St. Anthony West
- **Request:** To allow rehabilitation of and alterations to the existing Boom Island-Nicollet Island Bridge (Bridge No. 93835).

**Required Applications:**

| Certificate of Appropriateness | To allow rehabilitation of and alterations to the existing Boom Island-Nicollet Island Bridge (Bridge No. 93835). |

**HISTORIC PROPERTY INFORMATION**

<table>
<thead>
<tr>
<th>Current Name</th>
<th>Boom Island-Nicollet Island Bridge (Bridge No. 93835)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Historic Name</td>
<td>Wisconsin Central Railroad Boom Island Bridge</td>
</tr>
<tr>
<td>Historic Address</td>
<td>Wisconsin Central Railroad over East Channel Mississippi River</td>
</tr>
<tr>
<td>Original Construction Date</td>
<td>1901</td>
</tr>
<tr>
<td>Original Architect</td>
<td>C.F. Loweth</td>
</tr>
<tr>
<td>Original Builder</td>
<td>Butler-Ryan Co., St. Paul MN</td>
</tr>
<tr>
<td>Original Engineer</td>
<td>C.F. Loweth</td>
</tr>
<tr>
<td>Historic Use</td>
<td>Railroad Bridge</td>
</tr>
<tr>
<td>Current Use</td>
<td>Bicycle &amp; Pedestrian Bridge</td>
</tr>
<tr>
<td>Proposed Use</td>
<td>Bicycle &amp; Pedestrian Bridge</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date Application Deemed Complete</th>
<th>March 16, 2018</th>
<th>Date Extension Letter Sent</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>End of 60-Day Decision Period</td>
<td>May 15, 2018</td>
<td>End of 120-Day Decision Period</td>
<td>N/A</td>
</tr>
</tbody>
</table>
**CLASSIFICATION**

<table>
<thead>
<tr>
<th>Classification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Historic District</td>
<td>St. Anthony Falls</td>
</tr>
<tr>
<td>Period of Significance</td>
<td>1848-1941</td>
</tr>
<tr>
<td>Criteria of Significance</td>
<td>Architecture, Commerce, Industry, Transportation</td>
</tr>
<tr>
<td>Date of Local Designation</td>
<td>1971</td>
</tr>
<tr>
<td>Date of National Register Listing</td>
<td>1971</td>
</tr>
<tr>
<td>Applicable Design Guidelines</td>
<td>St. Anthony Falls Historic District Design Guidelines</td>
</tr>
</tbody>
</table>

**SUMMARY**

**BACKGROUND.** The Boom Island-Nicollet Island Bridge, designated Bridge No. 93835, is a 175 foot, 8-panel pin-connected Pratt through truss steel bridge which connects Nicollet Island to Boom Island in the St. Anthony Falls Historic District. Notable for the v-lacing on the top of the end post and top chord, the bridge was designed by engineer C.F. Loweth and built by the Butler-Ryan Co. of St. Paul. The bridge was constructed in 1901 for the Wisconsin Central Railroad (later the Chicago & Great Western) to serve their yards on Boom Island, which replaced a number of lumberyards and sawmills that had burned 8 years earlier. The rail yard was cleared in the 1970’s to make way for the planned Interstate 335; when that project was abandoned the land was turned over to the Minneapolis Park and Recreation Board (MPRB) which converted the bridge to bicycle and pedestrian use, removing the rails and adding the currently existing timber deck and chain-link fencing.

In late 2013, the bridge was closed to emergency and maintenance vehicles after an inspection discovered significant deterioration. Emergency repairs were completed in July 2015 to replace the bearings on the north abutment and modify the ends of the stringers. The bridge was then reopened to emergency and maintenance vehicle traffic.

**APPLICANT’S PROPOSAL.** At the regular meeting of the Heritage Preservation Commission on Tuesday, January 31, 2017, the commission, notwithstanding staff’s recommendation, denied an application submitted by the Minneapolis Park and Recreation Board to allow rehabilitation and alterations to the existing Boom Island-Nicollet Island Bridge (PLAN3458). The HPC findings in denying the application were the following:

*Finding #1:* The timber ties, steel stringers, and other components of the deck system are integral components of the original bridge design.

*Finding #2:* The removal of the interior stringers and original timber ties and the introduction of a new, reinforced concrete deck system would significantly degrade the bridge’s historic integrity.

*Finding #3:* The conditions of approval recommended by staff would be insufficient to mitigate the loss of historic fabric and proposed structural changes to the functioning of the deck system.

After the denial, the MPRB revised their proposal and presented to the Heritage Preservation Commission as an informational item at the commission’s April 5, 2017 meeting. The revised proposal included several significant changes in response to the Commission’s findings. The revised proposal included additional steel repairs to restore the structural integrity of the existing exterior stringers, in-kind replacement of the existing timber ties and wood decking – largely retaining the bridge’s original structural design and avoiding the introduction of new, incompatible materials, and proposed removal of the interior stringers in a way that would allow for reinstallation of the elements at a later date.
The MPRB now proposes to rehabilitate the bridge for continued use by bicycles, pedestrians, and maintenance and emergency vehicles. The overall cost of the project is estimated at $2.2 million. Planned work is as follows (see staff report attachments on the proposed work compares to the previous proposal):

**Abutments:** Cracks and spalling to be repaired and sealed, top of backwall removed and replaced in-kind to support a new deck system. The applicant proposes to match color and texture of the existing concrete.

**Portals and Hip Joints:** No work is proposed to the hip joints and no changes are proposed to the portals.

**Floor Beams and Stringers:** The applicant proposes to replace the existing deck system, which rests upon the stringers, with new reinforced concrete panels spanning from floorbeam to floorbeam. The bottom cover plate and angles which make up the bottom flange of the floor beams will be removed for most of their length and replaced with a new welded web plate and bottom flange to match the existing height.

The exterior stringers will carry structural loads as they have historically. To do so, they must be repaired. The repairs to the exterior stringers will be surgical in nature. The 7 stringers which have holes in the middle of the bottom inside angles will have this bottom angle replaced in-kind; the connection angles and fill plates for these exterior stringers will be replaced in-kind as they possess the highest level of corrosion. In four locations, a repair plate will be added to the bottom of the angle.

The interior stringers are beyond repair and will be removed. In addition, the interior stringers need to be removed to allow for the structurally needed floor beam vertical repair plate. The holes and significant corrosion in the existing floor beam vertical web plate are between the interior and exterior stringers. With only 6” between the bottom angles of the exterior and interior angles, there is not enough space to adequately repair the floor beams if the interior stringers remain. The interior stringers will be replaced with a similar sized I-beam as a bid alternate if funds allow.

**Bottom Lateral Bracing:** The in-place bottom lateral bracing is mostly not original construction. The original elements will be retained, and the non-historic members will be replaced in-kind with new plates and shelf angles.

**Decking:** The proposed deck system will be similar to the current decking except the proposed timber planks and stringers will be 3x12 sections instead of 2x6 for greater durability.

**Timber Ties:** The timber ties need to be removed due to their condition but will be replaced in-kind. The proposed timber ties will have similar size and spacing, but the lengths will be longer to carry the loads from the deck to the stringers.

**Railing:** A new 42” metal railing will be installed that will consist of 4” wide tube posts, top rail and bottom rail sections and ¼ inch diameter cables that will be spaced at 3.5 inches, horizontally between the posts. The cables are thin and will not obscure the truss members.

**Bearings:** Emergency repairs in July 2015 replaced the existing bearings and modified the stringer ends on the north abutment. The applicant proposes replacement of the bearings on both abutments, and modification of the stringer ends (similar to the previous changes on the north end) and pouring of a new concrete bearing pad pedestal on the south abutment. These changes will be largely obscured between the two large truss bearings.

**Paint System:** The applicant proposes repainting of the truss and floor system to match the existing paint color, including a zinc-rich primer to extend the life of the existing steel members.
Lighting: The existing flood light on the north portal is to be replaced with a series of six new LED fixtures to evenly illuminate the bridge deck. Fixtures have been selected for minimal visual intrusion; new conduit will be painted to match the steel color and concealed within the truss wherever possible.

RELATED APPROVALS.

<table>
<thead>
<tr>
<th>Planning Case #</th>
<th>Application(s)</th>
<th>Description</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLAN3458-</td>
<td>Certificate of Appropriateness to allow</td>
<td>See above and attachments</td>
<td>Denied</td>
</tr>
<tr>
<td>January 31, 2017</td>
<td>for rehabilitation and alterations to the bridge</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

PUBLIC COMMENTS. A resolution from the Nicollet Island – East Bank Neighborhood Association (NIEBNA) was received in 2016 expressing support for vertical steel railings, consistent with the current proposal, and the use of wood planking similar to the existing decking. Any additional correspondence received prior to the public meeting will be forwarded on to the Heritage Preservation Commission for consideration.

ANALYSIS

CERTIFICATE OF APPROPRIATENESS

The Department of Community Planning and Economic Development has analyzed the application to allow rehabilitation of and alterations to the existing Boom Island-Nicollet Island Bridge (Bridge No. 93835) based on the following findings:

1. The alteration is compatible with the designation of the landmark or historic district, including the period and criteria of significance.

   The proposed alterations are compatible with and support the criteria and period of significance for the district. Most of the character-defining elements of the original 1901 truss will be preserved, with portions of the portals and hip joints to be replaced in-kind. Modifications to the floor beams will be visible only from underneath, as will removal of the interior stringers. The current wooden deck system and chain link fence were installed as part of the conversion to trail use and do not constitute historic elements of the bridge. The proposed new metal railing, while representing a change from the current condition, would be clearly differentiated from the historic fabric and generally compatible with the historic district. The proposed wood deck is also compatible with the historic appearance of the bridge, which photographs show featured wood-plank walkways on either side of the rails. The replacement of the timber ties also helps retain the historic appearance of the bridge.

   The bridge contributes significantly to the district because of its engineering and its relationship to transportation and the industrial development of the area; as conditioned, the proposed changes maintain these associations.

2. The alteration will ensure the continued integrity of the landmark or historic district.

   Integrity is the ability of a property to convey its significance. Both the National Register and the City of Minneapolis preservation regulations evaluate integrity based on the following seven aspects:

   Location: The proposed work will not impact the bridge’s location and will maintain the historic rail connection between Boom Island and Nicollet Island, as called for in the design guidelines.

   Design: Design is the combination of elements that create the form, plan, space, structure, and style of a property. The character-defining 9 panel pin-connected truss will be maintained, removal of the two interior stringers will be minimally visible and be done in a way that will allow for them to be inserted at a later date if funds become available. In addition, the new deck and steel railings – which replace non-historic elements – will be compatible with and not overwhelm the historic design.
**Setting:** Some limited approach work is proposed, however this work will not significantly alter the bridge’s setting. Though the surrounding area has changed significantly since rail use of the bridge was discontinued, the continuity of the former rail corridor between Boom Island to the North and the East Channel Rail crossing to the South will be maintained.

**Materials:** The steel truss itself will be maintained with select elements of the portals and hip joints to be replaced in-kind and only the two interior stringers to be removed (at this time). The steel rails were removed at the time of the trail conversion, so the replacement of the existing wood deck and wood ties with new wood systems and the replacement of the chain link fence with a more durable material will not adversely impact the bridge design.

**Workmanship:** Workmanship is the physical evidence of the crafts of a particular culture or people during any given period in history. The workmanship of the historic structure, most evident in its characteristic v-lacing on the end post and top chord, will not be negatively impacted by the proposed changes.

**Feeling:** Feeling is a property’s expression of the aesthetic or historic sense of a particular period of time. The applicant’s proposed revised deck and railing are compatible with the bridge’s historic condition. Staff finds that pursuit of the combined wood/concrete alternative would most maintain the historic feeling of the rail crossing (which featured wood-plank walkways on either side of the rails) by avoiding the appearance of a solid, unbroken surface of concrete and maintaining compatibility with the comparatively light and airy construction of the truss itself.

**Association:** Association is the direct link between an important historic event or person and a historic property. The bridge is significant as a contributing structure because of its function as a rail link between Boom and Nicollet Islands and its association with rail transportation and the industrial development of the surrounding area. This association will be maintained with the installation of new wood ties and decking.

3. The alteration is consistent with the applicable design guidelines adopted by the commission.

   The St. Anthony Falls Historic District Design Guidelines were adopted in 2012. The intent of the design guidelines are to protect the integrity and character of the district and to ensure that new development occurs in a manner that is sensitive to the historic character of this unique place. The following design guidelines are applicable to the proposal:

**Treatment of Historic Infrastructure Features**

While preserving a historically significant feature of early infrastructure as it exists is usually preferred, this may not always be feasible. Even so, retaining references of each feature is expected, and should be incorporated in new development in a manner that respects the value of the resource and aids in interpretation of the history of the district.

**Intent**

Historically significant features of early infrastructure should be preserved. Sensitive reinterpretations should be employed where new development occurs.

**Requirements**

5.1 **Preserve historically significant bridges.**

   a. Bridges from the period of significance are prominent features and should be kept intact.

5.3 **Preserve railroad corridors and spurs.**

   a. Existing non-active railroad corridors, spurs and tracks should be preserved in place.

   b. The adaptive reuse of railroad corridors and spurs to provide green space, view corridors or other amenity for use and enjoyment is the preferred treatment.

   c. The enclosure of rail corridors and spurs in a building is generally inappropriate. However, it will be considered if the design clearly interprets the historic function of the space and it can be demonstrated that site constraints make the reuse of the site not feasible.
d. Where they exist, incorporate railroad tracks into a design.

**Staff Comment:** The proposal is in compliance with the *St. Anthony Falls Historic District Design Guidelines*. The proposed work would preserve intact the major character-defining features of the historic Wisconsin Central Railway Boom Island Bridge while maintaining the associated rail corridor as a trail for public use and enjoyment.

**Open Space & Parks**

Historically there were few parks in the St. Anthony Falls Historic District. Today, nearly all the land adjacent to the Mississippi River is dedicated to parks and open space. The reuse of these former industrial and railroad transportation areas as recreational and scenic attractions is reflective of the evolving use and importance of the central riverfront within Minneapolis. This evolving use as a recreation and scenic attraction is paramount to initiatives to increase activity along the riverfront.

**Intent**

The historic development patterns and use of these areas is often evident in the orientation of and access to the sites, remnants of historic infrastructure buildings, and their vegetation. New designs for open spaces and parks should reflect the historic use of the site through design interpretation while allowing for designs that meet the needs for the current and proposed use of the site.

**Requirements**

6.7 New designs for open spaces and parks should be compatible and reflective of the historic context of the individual character areas.

a. Incorporate the remnants of historic infrastructure and buildings into new designs for open spaces and parks.

b. Retain the historic orientation and access patterns of sites.

c. Interpret the historic use of the site through new design elements.

d. The volunteer pattern of historic landscapes should be reflected in industrial settings.

e. In historic commercial and residential areas, traditional and contemporary vegetation plans for open spaces and parks are appropriate.

**Staff Comment:** The proposal is in compliance with the *St. Anthony Falls Historic District Design Guidelines*. The applicant’s proposal would continue to integrate the historic bridge structure as a key component of Boom Island Park and the overall riverfront park and trail network while retaining a historic access point to the Boom Island site and causing minimal disturbance to riparian vegetation.

**Boom Island**

Boom Island gained its name as the principal anchor for log booming companies that sorted logs for the appropriate mills located adjacent to the Falls. By the 1880s steam powered saw mills were constructed adjacent to the island. The shift from sawmilling to flour milling along the river resulted in a change in the use of Boom Island. By the early 1900s, the island became a rail yard for the Chicago & Great Western Railroad (Wisconsin Central Railroad). BF Nelson Lumber Company had an extensive sawmilling operation located adjacent to the island.

Over time the channel between Boom Island and the east bank of the river has been infilled. In 1982, the site was purchased by the Minneapolis Park and Recreation Board. It is a distinctive park in that it is very open to the river, comprising a marina and boat docking facility, and a much more formal, bulk-headed, urban promenade that brings visitors to the river’s edge.

**Intent**

Retain the island’s ability to convey its historic uses and connections to other resources within the St. Anthony Falls Historic District.

**Requirement**
10.54 Retain the historic bridge structure and its connection to Nicollet Island.

**Staff Comment:** The Boom Island section of the *St. Anthony Falls Historic District Design Guidelines* calls for retention of the Wisconsin Central Railway Boom Island Bridge and encourages “interpretive signage and other features that convey the historic uses of the area.” CPED is not recommending interpretive signage with this proposal as this proposal is more in keeping with the historic character of the bridge and will not adversely impact the bridge’s historic design integrity. In addition, the applicant has noted that the Minneapolis Park and Recreation Board has a master plan for signage that highlights other historic amenities in the area, but not this bridge. In addition, the applicant notes that current funding sources for this project cannot be spent on further interpretation and that grant funding would have to be secured.

4. *The alteration is consistent with the applicable recommendations contained in The Secretary of the Interior’s Standards for the Treatment of Historic Properties.*

The project will not impair the significance and integrity of the contributing structure as evidenced by the consistency of alterations with *The Secretary of the Interior’s Standards for the Treatment of Historic Properties.* The following *Standards for Rehabilitation* are most applicable to the proposed project:

- A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.
- The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.
- Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.
- Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a historic property shall be preserved.
- Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.
- New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.
- New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

The bridge will continue to be used in a manner compatible with its original purpose. Major, character-defining features of the historic truss will be retained, with most elements to be retained and limited replacement in-kind. The interior stringers will be removed in a way that will allow new interior stringers to be inserted if funding becomes available. Removal of the original timber ties will be mitigated through the use of new timber ties. Both the new deck and steel railings will largely replace non-historic materials dating to the bridge’s conversion to trail use and their possible future removal would leave the essential form and integrity of the bridge intact.

5. *The alteration is consistent with the spirit and intent of the preservation ordinance, the applicable policies of the comprehensive plan, and the applicable preservation policies in small area plans adopted by the city council.*

The proposed work is consistent with the *Minneapolis Plan for Sustainable Growth*, the City’s Comprehensive Plan. The following preservation policies of the plan are most applicable to this proposal:

**Heritage Preservation Policy 8.1:** Preserve, maintain, and designate districts, landmarks, and historic resources which serve as reminders of the city’s architecture, history, and culture.
8.1.1 Protect historic resources from modifications that are not sensitive to their historic significance.

8.1.3 Encourage new developments to retain historic resources, including landscapes, incorporating them into new development rather than removal.

Heritage Preservation Policy 8.5: Recognize and preserve the important influence of landscape on the cultural identity of Minneapolis.

8.5.1 Identify and protect important historic and cultural landscapes.

8.5.2 Encourage planting and maintenance of street trees and other natural elements in historic districts to promote livability.

The preservation ordinance is intended to promote the recognition, preservation, protection and reuse of historic districts, to promote the economic growth and general welfare of the city, to further educational and cultural enrichment, and to implement the policies of the comprehensive plan. The proposed work allows the bridge to be rehabilitated while respecting its historical significance, retaining the bridge for continued trail use with modifications that are sensitive to its historic character. The bridge will continue to provide interpretation of the area’s historic use and rehabilitation work will maintain natural landscape elements of the riverbank. As conditioned, the proposed work is consistent with the spirit and intent of the preservation ordinance as well as the applicable policies of the Comprehensive Plan.

RECOMMENDATIONS

The Department of Community Planning and Economic Development recommends that the Heritage Preservation Commission adopt staff findings for the applications by the Minneapolis Park and Recreation Board for the property located between 501 Ramsey Street Northeast and 206 Island Avenue East in the St. Anthony Falls Historic District:

A. Certificate of Appropriateness.

Recommended motion: Approve the certificate of appropriateness to allow rehabilitation of and alterations to the existing Boom Island-Nicollet Island Bridge (Bridge No. 93835), subject to the following conditions:

1. Approval of the final plans by the Department of Community Planning and Economic Development.

2. By ordinance, approvals are valid for a period of two years from the date of the decision unless required permits are obtained and the action approval is substantially begun and proceeds in a continuous basis toward completion. Upon written request and for good cause, the planning director may grant up to a one year extension if the request is made in writing no later than January 17, 2019.

3. By ordinance, all approvals granted in this Certificate of Appropriateness shall remain in effect as long as all of the conditions and guarantees of such approvals are observed. Failure to comply with such conditions and guarantees shall constitute a violation of this Certificate of Appropriateness and may result in termination of the approval.

ATTACHMENTS

1. PLAN Maps
2. Project description
3. Aerials
4. Rehabilitation plan
5. Photographs
6. Construction details
7. Plan set
8. Public comments
Minneapolis Park and Recreation Board

NAME OF APPLICANT

Minneapolis Park and Recreation Board

WARD

PROPERTY ADDRESS

501 Ramsey Street Northeast to 206 Island Avenue East

FILE NUMBER

PLAN3458
Bridge No. 93835 – Pedestrian Truss over Mississippi East Channel (Boom Island) Rehabilitation

Application to Minneapolis Heritage Preservation Commission for a Certificate of Appropriateness for Alterations within a Historic District

Table of Contents:

1. Application Worksheet
2. Narrative
   i. Statement of Proposed Use
   ii. Description of the Project
   iii. Statement Addressing Applicable Findings
3. Site Plan
4. Photographs/Images of the Existing Condition of the Bridge
   i. Elevation
   ii. View of Deck
   iii. Views of Deteriorated Components (Abutment Concrete Spalls and Cracks, Interior Stringers, Deck, Portal Members)
5. Construction Details of Proposed Repairs
   i. Proposed Deck System
   ii. Proposed Floor Beam Repairs
6. Copy of Letter of Notification to Groups
7. Notification Mailing Labels
Bridge No. 93835 – Pedestrian Truss over Mississippi East Channel (Boom Island) Rehabilitation

Application to Minneapolis Heritage Preservation Commission for a Certificate of Appropriateness for Alterations within a Historic District

2. NARRATIVE

i. Statement of Proposed Use

Bridge No. 93835 is a steel truss bridge which connects Nicollet Island to Boom Island in the St. Anthony Falls Historic District. Likely built in 1901, the bridge was first a railroad bridge for the Wisconsin Central Railroad. Wisconsin Central Railroad owned a rail yard on Boom Island after the 1893 fire destroyed the original lumberyards. The rail yard was cleared in the 1970s and the bridge was turned over to the Minneapolis Park and Recreation Board (MPRB). In the 1970s the railroad tracks were removed and the existing timber deck was added on top of the railroad timber ties to facilitate vehicular and pedestrian traffic. The chain-link fence was also added for safety. In late 2013, the bridge was closed to vehicular traffic because of significant steel deterioration. Emergency repairs were completed in July 2015 to replace the existing bearings on the north abutment and modify the ends of the stringers which corroded completely away. After the emergency repairs, maintenance vehicles could travel on the bridge. The intent of this project is to rehabilitate the bridge to allow continued pedestrian use for the next 50-75 years and permit maintenance vehicles on the bridge. The overall bridge repair project budget is $2.2M with $1.8M anticipated for construction. The $1.8M estimated construction cost includes two bid alternates: $25K for a proposed lighting system and $400K to replace the interior stringers. The bid alternates will be included in the project if the bids are favorable.

ii. Description of the Project

Abutments:

The abutments are cracked and spalled. The spalls will be repaired and the cracks will be sealed. In addition, the top of the abutment backwall will be removed and replaced in-kind to provide support for the proposed deck system. The proposed abutment concrete will match the color and texture of the existing concrete.

Portals:

The existing lower horizontal angle of the portals is deteriorated. This angle will be removed and replaced in-kind.

Floor Beams:

The floor beams are a built-up member consisting of back-to-back 6”x6” angles on the top and bottom with a vertical web plate between the angles. A horizontal cover plate is above and below the angles. The bottom legs of the bottom two angles have significant corrosion between the exterior stringers. The web plate has high levels of corrosion; at least 2 web plates have holes.

The bottom angles are beyond the condition where a repair plate and a good coat of paint can repair the floor beam. The bottom cover plate, angles, and 3” of the bottom of the vertical web plate will be removed. A new vertical web plate will be added to compensate for the section
loss in the existing vertical plate. A new horizontal plate will be welded to the bottom of the new vertical plate. This detail retains the historic “I” shape of the floor beams. The repair does not replace the bottom angles in kind because built-up members are more likely to accumulate pack rust.

**Exterior Stringers:**

The exterior stringer sections are similar to the floor beams; they consist of back-to-back 6”x6” angles riveted to the top and bottom of a vertical web plate. They are connected to the floor beam vertical web plate with connection angles and a hidden fill plate. All exterior stringers possess corrosion on the inside bottom angle at the floor beams. About 11 of the 16 exterior stringers have severe deterioration at this location. 7 of the exterior stringers have holes through the bottom angle in the center of the bays. One exterior stringer has a hole in the vertical web plate. All of the connection angles are corroded.

The repairs to the exterior stringers will be surgical in nature. The 7 stringers which have holes in the middle of the bottom inside angles will have this bottom angle replaced in-kind; the angle is beyond repair. In addition, the connection angles and fill plates for these exterior stringers will be replaced in-kind as they possess the highest level of corrosion. In four locations, the bottom of the inside angle has significant deterioration only by the web. A repair plate will be added to the bottom of the angle in these locations. The hole in the vertical web plate of one exterior stringer will be covered with repair plates. The repair plates are longer than the hole so that the load in the existing vertical plate can transfer to the new repair plates on either side of the hole. On the Boom Island Park side of all floor beams, the connection angles and fill plates need to be replaced to accommodate the plate height required for the floor beam repair. These will be replaced in-kind and button head bolts will be used in the same holes as the existing rivets.

**Interior Stringers:**

The two interior stringers exhibit the worst deterioration. The bottom leg of the bottom angle has through corrosion in many locations; otherwise, the leg is so thin that it will disappear with the minimal cleaning required to adhere any paint system to preserve the remaining steel. There is significant corrosion in the top leg of the bottom angles as well. The vertical plate is not visible in this location, but it can be reasonably assumed to be deteriorated behind the angle. The vertical web plate would be significantly damaged if the bottom angles are removed.

The interior stringers are beyond repair and will be removed. In addition, the interior stringers need to be replaced to allow for the structurally needed floor beam vertical repair plate. The holes and significant corrosion in the existing floor beam vertical web plate are between the interior and exterior stringers. With only 6” between the bottom angles of the exterior and interior angles, there is not enough space to adequately repair the floor beams if the interior stringers remain. The interior stringers will be replaced with a similar sized I-beam as a bid alternate if funds allow.

**Bottom Lateral Bracing:**

The bottom lateral bracing has been modified since original construction. The bracing elements between the stringers include welds, which wouldn’t have been a practice at the time of original construction. In addition, a plate and shelf angle on the outside of the exterior stringers are not
part of the original construction as they are welded to the likely original lateral bracing angle and exterior stringer. Some of the existing plates are severed; others have significant corrosion.

The bottom lateral bracing will be replaced in-kind with new plates and shelf angles. The likely original lateral bracing angle will be cut at the place where it connects to the existing plate. The portion that was connected to the plate will be removed and a new angle will be attached on top to connect the original angle to the new plate. See included photographs for the severed location of the original angle – this is where the original angle will be cut at all other locations. “LOWER LATERAL BRACING REPLACEMENT” detail on Plan Sheet 14 shows the proposed in-kind replacement.

**Decking:**

The deck, which is in poor condition, consists of timber stringers which run the length of the bridge and are attached to the timber ties. Transverse timber planks, which make up the visual deck surface, are attached on top of the timber stringers. The transverse timber planks are loose, cracked, decayed, cupped, and splitting. Many of the nail heads are pushed up and bent over; these are creating tripping hazards. Due to the condition of the timber, all timber planks and stringers will be replaced. The proposed deck system will be similar except the proposed timber planks and stringers will be 3x12 sections instead of 2x6 for greater durability. The MPRB conducted a study on timber planks and stringers after the Plank Road project exhibited quick deterioration to the timber sections. These details incorporate the findings of that study.

**Timber Ties:**

The in-place timber ties are likely not original but have been replaced one by one based on their condition. All or some of the timber ties were likely replaced when the timber deck was installed in the 1970s. Based on a recent inspection, the timber ties are cracked, decayed, splitting and contain white rot. The timber ties need to be removed due to their condition. The proposed timber ties lengths will have similar size and spacing, but the lengths will be longer. For a railroad bridge, the timber ties only need to carry load from exterior stringer to exterior stringer – not curb to curb. For a pedestrian bridge, the timber ties need to carry the load from curb to curb. See “PLAN VIEW” on Plan Sheet 16 for a typical timber tie configuration. Sections B-B and C-C on Plan Sheet 15 show how the timber ties will be spaced on and around the floor beams and abutments. This matches the current configuration.

**Railing:**

Historically the bridge did not have a fence. The in-place chain-link fence needs to be removed to repair the deck. Due to the condition, this railing will not be reinstalled. A new 42” metal railing will be installed. It will consist of 4” wide tube posts, top rail, and bottom rail sections. ¼ inch diameter cables will be spaced at 3.5 inches, horizontally between the posts. The cables are thin and will not obscure the truss members.

**Bearings:**

Emergency repairs were completed in July 2015 to replace the existing bearings and modify the ends of the stringers which corroded completely away on the west abutment (Boom Island Park side). The bearings on both abutments will be replaced as part of this project. The ends of the exterior stringers on the east abutment will be modified, similar to the ends on the west abutment, due to significant corrosion. The bottom half of the stringers, which sits on the
bearing, has through hole corrosion and will not be able to transfer the necessary load in years to come. After the ends of the stringers are modified, a concrete pedestal will be poured for a bearing pad. See Plan Sheet 17 for details. The modifications to the ends of the exterior stringers and new concrete pedestal will be obscured between the two large truss bearings.

**Paint System:**

The original paint system has failed. The entire truss will be cleaned and painted. The steel members will be blasted to a level of SSPC 6, which is less than the typical SSPC 10 used for steel bridges. This level of surface preparation will remove paint and minimize damage to the 1901 steel. The proposed paint system will include a zinc-rich primer to extend the life of the existing steel and a penetrating sealer to minimize the development of pack rust in the built-up truss members.

**Timber Walls:**

Timber walls hold up the trail in all four corners of the bridge. These walls were likely placed in 1901 to support the railway, but wood would not be expected to have a service life over 40 years. The timber members were likely replaced throughout the lifetime of the railway. The timber walls have significant decay, splitting, swelling, and are loose. Their lifespan is limited. In addition, they would not be able to accommodate any construction loads required to rehabilitate the bridge.

The timber walls will be reconstructed. The existing horizontal and vertical timbers will be removed. The vertical members will be replaced in-kind, but the horizontal members will be replaced with wider sections to accommodate the railing that is required for safety reasons on top of the walls. The combined drop and steep slopes at the bottom of the wall require the railing protection to prevent people from falling down the steep slopes.

**Lighting:**

The existing flood light on the north portal currently does not work. The existing light system will be removed as part of this project. If the bids are favorable, an alternate will be included to add a proposed LED lighting system in a manner that makes the fixtures appear secondary to the structure. Efforts will be made to conceal the fixtures. Lighting will evenly illuminate the bridge deck.

**iii. Statement Addressing Applicable Findings:**

The repairs are consistent with The Secretary of the Interior’s Standards for Treatment of Historic Properties. The original 1901 truss members are being preserved and replaced in-kind where necessary. The interior stringers will be removed and replaced with similar I-shaped sections if the bids are favorable. The floor beam geometry will be slightly modified, but the changes will be largely unnoticed by the public; the changes will only be seen by canoeists. The current deck system and fence are not part of the original bridge structure and will be removed. The proposed deck system is similar to existing; new timber ties will be used, but the timber stringers and transverse timber planks will be 3x12 pieces for durability. The proposed railing will not obscure the historic truss members.

3. **SITE PLAN**
<table>
<thead>
<tr>
<th>Scope of the Work</th>
<th>January 10, 2017 Heritage Preservation Commission Meeting – Application Denied</th>
<th>April 5, 2017 Heritage Preservation Meeting - Discussion Item April 17, 2018 Heritage Preservation Commission Meeting – Revised Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abutments</td>
<td>The spalls will be repaired and the cracks will be sealed. The proposed abutment concrete will match the color and texture of the existing concrete.</td>
<td>No Change</td>
</tr>
<tr>
<td>Portals/Hip Joints</td>
<td>This angle will be removed and replaced in-kind. The existing plate will be removed, the pack rust will be cleaned, and the existing plate will be reinstalled.</td>
<td>No work will occur on the hip joints. No Change to portals.</td>
</tr>
<tr>
<td>Floor Beams</td>
<td>For the floor beams, the bottom cover plate, angles, and 3” of the bottom of the vertical web plate will be removed. A new vertical web plate will be added to compensate for the section loss in the existing vertical plate. A new horizontal plate will be welded to the bottom of the new vertical plate. The repair does not replace the bottom angles in kind because built-up members are more likely to accumulate pack rust.</td>
<td>No change.</td>
</tr>
<tr>
<td>Exterior Stringers</td>
<td>The proposed deck system will not bear on the stringers. The exterior stringers will remain as-is for historic appearances only.</td>
<td>The exterior stringers will carry structural loads as they have historically. To do so, they must be repaired. The repairs to the exterior stringers will be surgical in nature. The 7 stringers which have holes in the middle of the bottom inside angles will have this bottom angle replaced in-kind; the connection angles and fill plates for these exterior stringers will be replaced in-kind as they possess the highest level of corrosion. In four locations, a repair plate will be added to the bottom of the angle.</td>
</tr>
<tr>
<td>Interior Stringers</td>
<td>Because the stringers will not be required structurally and their close spacing inhibits the floor beam repairs, the two interior stringers will be removed and not replaced.</td>
<td>The interior stringers are beyond repair and will be removed. In addition, the interior stringers need to be removed to allow for the structurally needed floor beam vertical repair plate. The holes and significant corrosion in the existing floor beam vertical web plate are between the interior and exterior stringers. With only 6” between the bottom angles of the exterior and interior angles, there is not enough space to adequately repair the floor beams if the interior stringers remain. The interior stringers will be replaced with a similar sized I-beam as a bid alternate if funds allow.</td>
</tr>
<tr>
<td>Bottom Lateral Bracing</td>
<td>The bottom lateral bracing will be removed and not replaced.</td>
<td>The in-place bottom lateral bracing is mostly not original construction. The original elements will be retained, and the non-historic members will be replaced in-kind with new plates and shelf angles.</td>
</tr>
<tr>
<td>------------------------</td>
<td>---------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Decking</td>
<td>The proposed deck system is a precast concrete deck spanning from floor beam to floor beam.</td>
<td>The proposed deck system will be similar to the current decking except the proposed timber planks and stringers will be 3x12 sections instead of 2x6 for greater durability.</td>
</tr>
<tr>
<td>Timber Ties</td>
<td>The original timber ties need to be removed and are not planned for replacement. This is due to the lack of space between the top of the floor beam and the top of the stringers.</td>
<td>The timber ties need to be removed due to their condition but will be replaced in-kind. The proposed timber ties will have similar size and spacing, but the lengths will be longer to carry the loads from the deck to the stringers.</td>
</tr>
<tr>
<td>Railing</td>
<td>The chain-link fence will be removed and replaced with a vertical picket type railing on a concrete curb.</td>
<td>A new 42” metal railing will be installed that will consist of 4” wide tube posts, top rail and bottom rail sections and ¼ inch diameter cables that will be spaced at 3.5 inches, horizontally between the posts. The cables are thin and will not obscure the truss members.</td>
</tr>
<tr>
<td>Bearings</td>
<td>After the ends of the stringers are modified, a concrete pedestal will be poured for a bearing pad. The modifications to the ends of the exterior stringers and new concrete pedestal will be obscured between the two large truss bearings.</td>
<td>No Change</td>
</tr>
<tr>
<td>Paint System</td>
<td>The entire truss will be cleaned and painted.</td>
<td>No Change</td>
</tr>
<tr>
<td>Timber Walls</td>
<td>The timber walls will be reconstructed.</td>
<td>No Change</td>
</tr>
<tr>
<td>Lighting</td>
<td>An alternate will be included to add a proposed LED lighting system in a manner that makes the fixtures appear secondary to the structure. Efforts will be made to conceal the fixtures.</td>
<td>No Change</td>
</tr>
</tbody>
</table>

The funding for the Bridge No. 93835 Rehabilitation project does not require State Historic Preservation Office review.
4. PHOTOGRAPHS/IMAGES OF THE EXISTING CONDITION OF THE BRIDGE

i. Elevation

Existing Elevation

ii. View of the Deck

Condition of Existing Timber Deck
Condition of Existing Timber Deck

iii. Views of Deteriorated Components

Cracks and Spalls on North Abutment; temporary repairs to the stringer supports are also visible; corrosion visible on bottom angles of interior and exterior stringers; limited space can be seen between exterior and interior stringers – spacing is the same along the entire length of the bridge
Cracks and Spalls on South Abutment

North Portal Lower Horizontal; can see additional plates and missing parts of angle; South Portal similar
Typical Floor Beam - deterioration outside of stringers; propose to remove bottom angles to end of cover plate seen above.

Typical Floor Beam and Interior Stringers; the bottom leg of the angle for the floor beam is completely deteriorated
Typical Floor Beam and Stringers; Interior stringer is to the left and exterior stringer is to the right.

Typical Floor Beam and Interior Stringers – note hole in floor beam web plate
Typical Floor Beam – bottom leg of angles; severe deterioration begins under stringer; mainly only cover plate

Typical Floor Beam and Interior Stringers
Typical Interior Stringer - bottom leg of angle is gone which upper leg is almost gone.

Bottom Lateral Bracing – severed from non-original plate. There is where new lateral bracing will be added to historic angle. Welds to attach the angle to the exterior stringer shows this was added later.
5. CONSTRUCTION DETAILS OF PROPOSED REPAIRS

i. Proposed Deck System

In addition to the floor beams, the existing stringers are deteriorated, and the timber ties and non-original deck are decayed. The timber deck, timber ties, and non-original chain link fence will be removed. The interior stringers possess the worst deterioration and need to be removed.

The proposed deck will be similar to the existing deck system except the size of the timber stringers and transverse planks will be 3x12 instead of 2x6 for greater durability. The proposed timber ties will have similar size and spacing but the lengths will be longer. For a railroad bridge, the timber ties only need to carry load from exterior stringer to exterior stringer, thus the ties typically ended just beyond the stringer. For a pedestrian bridge, the timber ties need to carry load out to the curb.

The interior stringers are shown lighter. These will be replaced as a bid alternate; they will be replaced if funds allow.
ii. Proposed Floor Beam Repairs

The existing floor beam is a built-up member consisting of back-to-back 6”x6” angles on the top and bottom with a vertical plate between the angles and horizontal cover plates below and above the angles. The bottom two angles have significant deterioration. We are removing the two deteriorated bottom angles and 3” off the bottom of the vertical plate which is also deteriorated.

The two interior strings have the worst deterioration and will be removed. If they were to remain, their close spacing would inhibit access to adequately repair the floor beams to support the stringers and deck system.

The existing vertical plate has deterioration above the existing 6”x6” bottom angles where the stringers tie into the floor beam. Our proposed repair includes a new vertical plate which will extend up as shown to compensate for the section loss in the existing vertical plate. In addition, a new horizontal plate will be welded to the bottom of the new vertical plate. This detail retains the historic “I” shape of the floor beams.

We are not suggesting to replace the existing bottom angles in kind because built-up members are more likely to accumulate pack rust.
GENERAL NOTES:
The general notes contained herein are intended to feature broad requirements of the construction and are not comprehensive. Additional plans and specifications are contained throughout the plans and specifications.

The bridge can accommodate the weight of a 160 vehicle in its current condition.

Dimensions shall not be determined by scaling from drawings.

The dimensions and elevations of the inplace structure as shown in the plans shall be considered approximate.

Plan details are based on field measurements from several dates and are not final. The contractor shall make field measurements as necessary prior to construction to establish dimensions and elevations of inplace bridge elements to assure proper fit in final work.

All reinforcement to be epoxy coated.

The first digit of each bar mark indicates the bar size using U.S. customary designations.

The use of plane-cutting torch shall not be used to remove rivets or cut bolt heads from any element to remain in place on the bridge.

Patterns for steel repair connections shall be included in the repair work to which it pertains.

All bolted connections shall be made with bolts having mechanical characteristics as shown in Table 4.5 and in the respective Section.

Bolt holes shall be drilled in their position and not in the rebars. All steel to be placed shall be firmly clamped together by temporary means other than welding during field placing operations or while welding inplace. Holes shall be high-strength with new and inplace steel to be clamped together by temporary means other than welding during field placing operations or while welding inplace. Holes shall be high-strength with new and inplace steel.

The use of a plane-cutting torch for making new holes will not be permitted, unless noted otherwise.

All bolted field connections for steel bridges shall be installed using direct tension indicator (DTI) systems.

See specifications for rivet removal procedure.

TREE CLEARING:
Clear trees, shrubs, and plants within 1 foot of each of any walls as determined by the engineer. All four corners, clear and enlarge tree area above and below the inplace timber wall in an area as identified by the engineer.

BID ALTERNATES:
These plans and specifications include two bid alternatives.

Bid Alternative 1 is to provide new lighting provided on sheets B7 to E1.

Bid Alternative 2 is to replace the interior stainless, the details to replace the interior stainless are provided on sheets D9 to E9.
REPAIR IDENTIFICATION
- Reconstruct bearings (sheets 27-38)
- Floor beam repair (sheet 12)
- New timber deck and ties (sheets 15-16)
- New metal filler plates (sheets 19-22)
- Portal repair (sheet 13)
- 100% missing and new (sheet 10)
- Extension stringer repair type 1 (sheet 18-20)
- Lateral bracing replacement (sheet 24)
- Extension stringer web strengthening (sheet 12)
- Extension stringer repair type 2 (sheet 12-17)
- Extension stringer repair type 3 (sheet 12-13)
- Extension stringer repair type 4 (sheet 12-12)
- Extension stringer repair type 5 (sheet 12-12)

REMOVALS
- Remove inplace timber deck and ties (sheet 5)
- Remove interior stringer (sheet 41)
- Remove lower horizontal portal members (sheet 41)
- Remove inplace fence (sheet 10)
- Remove inplace bearings (sheet 41)
- Remove portion of exterior stringer at bearing (sheet 41)
- Remove inplace section inside angle of exterior stringer (sheet 31)
- Remove inplace connection plates and flange plates between floor beams and stringers on boom island from side of floor beam (sheet 4-31)
- Remove inplace lateral bracing (sheet 51)
- Remove inplace connection plates and flange plate between floor beams and stringers on both sides of floor beam (sheet 4-31)

PAINT SYSTEM
- Clean and prime all inplace steel to remain, after all removals. If inplace steel will be covered with repair steel members, clean and prime prior to installation of repair steel members.
- Paint all inplace and new steel per specifications.

NOTE:
- As directed by the engineer in the field, quantity assumed to be a location.
WEST ABUTMENT ELEVATION

CONCRETE SURFACE REPAIR DETAIL
LOOKING AT SECTION THRU SPALL AND CRACK

- CONCRETE SURFACE REPAIR NOTES:
  REMOVE ALL UNSOUND CONCRETE.

- IF REINFORCEMENT IS EXPOSED, REMOVE CONCRETE TO A MINIMUM
  OF 1/2" BEYOND REPAIR UNTIL A 2" LENGTH SHOWS NO CORROSION.

- SAW CUT AT LEAST 3/4" DEEP AT THE EDGES OF REPAIR AREA.
  IF REPAIR AREA IS MORE THAN 2 INCHES DEEP AND 1 FOOT WIDE,
  PLACE ADDITIONAL REINFORCEMENT.

- APPLY AND CURE NON-SHIFTING GROUT IN ACCORDANCE WITH
  MANUFACTURER'S RECOMMENDATIONS TO ORIGINAL SURFACE PROFILE.

EAST ABUTMENT ELEVATION

NOTES:
- STRUCTURAL CRACK: SEE CONCRETE SURFACE REPAIR DETAIL.
- SPALL: SEE CONCRETE SURFACE REPAIR DETAIL.
PLAN VIEW

TYPICAL TIE SPACING TO ACCOMMODATE RAILING POST LOCATIONS

SECTION A-A

SECTION B-B

NOTES:

SEE SHEET 15 FOR TIMBER NOTES.

1. 1/2" x 10" LONG HEAVY LAG SCREW WITH BSS NUT AND WASHER AS EACH STRINGER CONVERGING HEAD FOR FLUSH SURFACE, PRESSURE TREATED PLANK WITH SD NO HOLE, PRESSURE STRINGERS WITH SD NO HOLE, TREAT MIDDLE WITH ACS PRESERVATIVE.

2. 1/2" x 10" LONG HEAVY LAG SCREW WITH BSS NUT AND WASHER AS EACH STRINGER CONVERGING HEAD FOR FLUSH SURFACE, PRESSURE TREATED PLANK WITH SD NO HOLE, TREAT MIDDLE WITH ACS PRESERVATIVE, COUNTER SINK HEAD FOR FLUSH SURFACE.

3. 3/8" x 10" LONG HEAVY LAG SCREW WITH BSS NUT AND WASHER AS EACH STRINGER CONVERGING HEAD FOR FLUSH SURFACE, PRESSURE TREATED PLANK WITH SD NO HOLE, TREAT MIDDLE WITH ACS PRESERVATIVE, COUNTER SINK HEAD FOR FLUSH SURFACE.

4. TYPICAL TIE AND RAILING POST CONFIGURATION BETWEEN PANEL POINTS, PANEL POINTS 1/4" AND LEAVE NO FLOOR SEAMS AND NO WAVE TIE.
### Bill of Materials - Lateral Bracing Replacement

<table>
<thead>
<tr>
<th>Item</th>
<th>Qty</th>
<th>Nails/Reqs</th>
<th>Lbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>New 1(\frac{3}{4}) x 1(\frac{1}{8})&quot; (Type A)</td>
<td>4</td>
<td>24</td>
<td>2.00</td>
</tr>
<tr>
<td>New 1(\frac{3}{4}) x 1(\frac{1}{8})&quot; (Type A)</td>
<td>4</td>
<td>24</td>
<td>2.00</td>
</tr>
<tr>
<td>New 1(\frac{3}{4}) x 1(\frac{1}{8})&quot; (Type B)</td>
<td>12</td>
<td>24</td>
<td>2.00</td>
</tr>
</tbody>
</table>

**Notes:**

- Bill of materials are listed for contractor's convenience and are not intended to be comprehensive material summaries.
- Details on this sheet represent an interior stringer replacement alternate 2. If interior stringer replacement alternate 2 is chosen by owner, details on this sheet replace all details provided on sheet 3.
- 10°-24°, one piece plate shall be cut in field once contractor has determined correct measurements.

**Sheet Information:**

- Revision: 3 of 5
- Sheet No.: 25 of 27 sheets
CONSTRUCTION NOTES:

1) THE EXACT REMOVAL LIMITS OF PATH SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER. BITUMINOUS SURFACES DESIGNATED FOR REMOVAL SHALL BE SAW CUT TO FULL DEPTH OF SURFACE PRIOR TO REMOVAL.
2) EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO BEGINNING OF ANY EARTH DISTURBANCE.
3) ALL CONSTRUCTION RELATED TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO BEGINNING OF ANY PORTION OF DEMOLITION.
4) CONTRACTOR SHALL PROTECT ALL ITEMS NOT DESIGNATED FOR REMOVAL, ANY ITEMS THAT ARE DAMAGED OR REMOVED WITHOUT PRIOR CONSENT OF THE ENGINEER SHALL BE REPAIRED OR REPLACED TO NEW OR LIKE NEW CONDITIONS AT NO COST TO OWNER.
5) PROTECT TRAIL STEPS DURING CONSTRUCTION AND MAINTAIN ACCESS TO STAIRS.
6) WOOD WALLS ARE IN PLACE TIMBER WALLS. SEE BRIDGE PLANS.
7) REGRADE EXISTING GRAVEL TRAIL TO DRAIN AND MATCH EXISTING TRAIL.

TOP SOIL CONSTRUCTION NOTE:

1) DURING EXCAVATION TOPSOIL SHALL BE STOCKPILED SEPARATELY, CARE SHOULD BE TAKEN DURING EXCAVATION/BACKFILLING OPERATIONS NOT TO BLEND IN CLAYS, SAND, ETC., WITH TOP SOIL.
2) A MINIMUM OF 6" OF TOPSOIL SHALL BE PLACED OVER ALL EXCAVATED DISTURBED AREAS PRIOR TO ANY SEEDING OPERATIONS.
CONSTRUCTION NOTES:

1) THE EXACT REMOVAL LIMITS OF PATH SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER. BITUMINOUS SURFACES DESIGNATED FOR REMOVAL SHALL BE SAWN TO FULL DEPTH OF SURFACE PRIOR TO REMOVAL.
2) EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO BEGINNING OF ANY EARTH DISTURBANCE.
3) ALL CONSTRUCTION RELATED TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO BEGINNING OF ANY PORTION OF DEMOLITION.
4) CONTRACTOR SHALL PROTECT ALL ITEMS NOT DESIGNATED FOR REMOVAL.
5) TRANSPORTATION OF MATERIALS TO SITE SHALL BE CTED TO NOT DAMAGE OR REMOVE ANY PORTION OF DEMOLITION.
6) PROTECT TRASH STEPS DURING CONSTRUCTION.
7) GRADE SWALE AT 0.75% RUNNING SLOPE FROM TRENCH DRAIN ON BOOM ISLAND SIDE. SEE SWALE SECTION SHEET C4.03.
CONSTRUCTION NOTES:
1) RESeed LAY DOWN AREA AND WITHIN CONSTRUCTION LIMITS.
2) MAINTAIN ACCESS TO STAIRS DURING CONSTRUCTION.
# Stage 1 Tabulation

<table>
<thead>
<tr>
<th>ID</th>
<th>Sign Assembly</th>
<th>Designator</th>
<th>Size</th>
<th>Quant.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MB CC DOT (Z1)</td>
<td>R11-2</td>
<td>48&quot; X 30&quot;</td>
<td>7</td>
</tr>
<tr>
<td>2</td>
<td>SET IN</td>
<td>WA-9</td>
<td>30&quot; X 24&quot;</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>SET IN</td>
<td>WA-9</td>
<td>30&quot; X 24&quot;</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>SET IN</td>
<td>WA-9</td>
<td>30&quot; X 24&quot;</td>
<td>10</td>
</tr>
<tr>
<td>5</td>
<td>MB CC DOT (Z1)</td>
<td>WA-9</td>
<td>30&quot; X 24&quot;</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>MB CC DOT (Z1)</td>
<td>WA-9</td>
<td>30&quot; X 24&quot;</td>
<td>5</td>
</tr>
<tr>
<td>7</td>
<td>MB CC DOT (Z1)</td>
<td>WA-9</td>
<td>30&quot; X 24&quot;</td>
<td>4</td>
</tr>
<tr>
<td>8</td>
<td>MB CC DOT (Z1)</td>
<td>WA-9</td>
<td>30&quot; X 24&quot;</td>
<td>3</td>
</tr>
</tbody>
</table>
EROSION PREVENTION PRACTICES

The location of areas not to be disturbed must be delineated on the project before site work begins. Disturbance on steep slopes (>33%) shall be minimized. Where required, techniques such as phasing and stabilizing practices designed for steep slopes shall be used.

All exposed soils must be stabilized as soon as possible, but in no case later than 14 days after the construction activity has temporarily or permanently ceased.

For public waters that have been promulgated "work in water restrictions" during fish-spawning time frames, all exposed soil areas that are within 200 feet of the water's edge, and drain to these waters must be completely stabilized within 24 hours during the time period.

Stormwater conveyance channels shall be routed to avoid undisturbed areas. Erosion controls and velocity dissipation devices shall be used at outlets within and along the length of any constructed conveyance system.

The normal wetted perimeter of all ditches or swales, including storm-water management pond slopes, that drain waters from the site shall be stabilized within 200' of any property edge or drainage ditch, including storm sewer inlets, within 24 hours of connection.

Stabilization of the remaining portions of any temporary or permanent ditches or swales within 14 calendar days after connecting to a surface water or property edge and construction in that portion of the ditch has temporarily or permanently ceased.

Temporary or permanent ditches or swales used as sediment containment during construction do not need to be stabilized within temporary period of use and shall be stabilized within 24 hours after no longer used as sediment containment.

Mud, hydraulic, talc/ker, or similar practice shall not be used in any portion of a temporary or permanent drainage ditch. Refer to erosion and sediment control plan for temporary and permanent stabilization measures for ditches and swales.

Stormwater discharges shall be directed to vegetated areas where feasible. Velocity dissipation devices shall be used at discharge point.

Phased construction will be used to extend practical or as indicated in the plans to minimize exposed soils.

Rapid stabilization shall be of type and quantity indicated in the project specifications. Additional rapid stabilization may be necessary if there is minimal erosion throughout the duration of the project. Type and quantity shall be determined by the engineer or inspector prior to installation. In extreme cases, the contractor shall use any available rapid stabilization to immediately mitigate erosion, then further remedy the situation with approval by owner or engineer.

SEDIMENT CONTROL PRACTICES

Practices must be established on all down gradient streamers and be located up gradient of any buffer zones.

Permanent controls must be in place before up gradient land-disturbing activities begin and shall remain in place until final stabilization.

All sediment controls practices shall be re-installed if they have been adjusted or removed to accommodate short-term activities and replaced immediately after the short-term activity has ceased. Short-term activities shall be performed as quickly as possible. Sediment control practices shall be re-installed even before the next precipitation event if the activity is not complete.

All storm drains must be protected by appropriate BMPs during construction until all sources to the inlet have been stabilized. Inlet protection may be removed for specific safety concerns identified by the Permittee or jurisdictional authority. The removal shall be documented in the SWPPP and retained on site. Temporary stockpiles must have silt fence or other effective sediment controls and shall not be placed in surface waters or natural water bodies.

Vehicle tracking BMPs shall be installed to minimize track out of sediment from the construction site. Method shall be approved by engineer prior to commencement of construction activities. Street sweeping shall be used if vehicle tracking BMPs are not adequate to prevent sediment from being tracked onto the street.

Soil compaction shall be minimized and topsoil shall be preserved, unless infeasible or if construction activities dictate soil compaction or topsoil stripping.

A 50-foot natural buffer, or redundant BMPs (where a buffer is infeasible) must be maintained when a surface water is located within 50 feet of disturbance activities and site runoff flow to the surface water.

If polymers, flocculants, or other sedimentation treatment chemicals are used on site, 1) conventional erosion and sediment controls shall be viewed prior to chemical placement, 2) chemicals shall be chosen based on soil type, and expected turbidity, pH, and flow rate of stormwater flowing into the treatment system, and 3) chemicals shall be used with accepted engineering practices and dosing specifications.

POLLUTION PREVENTION

Building practices that have the potential to leak pollutants must be under cover to prevent discharge or protected by an effective means designed to minimize contact with stormwater.

Pesticides, herbicides, insecticides, fertilizers, treatment chemicals, and landscape materials must be under cover.

Hazardous materials and toxic waste must be properly stored in sealed containers to prevent spills, leaks or other discharge. Restricted access storage areas must be provided to prevent violation.

Solid waste must be stored, collected, and disposed of in compliance with Minn. R.C. 7075.

Portable toilets must be positioned so that they are secure and will not be tipped or knocked over. Sanitary waste must be disposed of properly in accordance with Minn. R.C. 7075.

Discharge of gelled or liquid chemicals, including fire retardants, to any area where chemical or fuel will be loaded or unloaded shall be prevented using drip pans or absorbents. Supplies shall be available at all times to clean up discharged materials and that an appropriate disposal method must be available for recovered hazardous waste.

Exterior pumps or equipment washing on the project site shall be limited to when the site is clear of water. Runoff from the washing area shall be contained in a sediment basin or other similarly effective controls and waste from the washing activity must be properly disposed of. No engine driving is allowed on site. Effective containment for all liquid and solid wastes generated by equipment and other wastewater related to construction activities shall be effectively contained. Liquid and solid wastewater shall not contact the ground, and containment must be sufficient to prevent it from resulting in runoff from the workshop area or facility. A sign must be installed adjacent to each wastewater facility that requires site personnel to utilize the proper facilities for disposal of all other wastewater.

INVESTIGATION & MAINTENANCE

A trained person shall routinely inspect the entire construction site at least once every 7 days during active construction and within 24 hours after a rainfall event greater than 0.5 inches in 24 hours. Following an inspection event, the next inspection must be conducted within 7 days.

All inspections and maintenance conducted during construction must be recorded within 24 hours in writing and records must be retained. Inspection report forms are available in the Project Specifications. Inspection report forms other than those provided shall be approved by the engineer.

Where parts of the project site have permanent cover, but work remains on other parts of the site, inspections may be reduced to one inspection per month.

Where the site has permanent cover on all exposed areas and no construction activity is occurring anywhere on site, the site must be inspected during non-frozen conditions at least once per month for 12 months. Following the 12-month period of permanent coverage and no construction activity, inspections shall be terminated until construction activity resumes or notification from MPCA has been received that erosion has been detected on site.

During frozen ground conditions, inspections may be suspended and shall resume within 24 hours after runoff occurs or 24 hours prior to resuming construction activity, whichever is first.

Inspection and maintenance shall resume until another Permittee has obtained coverage under this Permit or the project is undergoing Final Stabilization, and MPCA has been notified.

All erosion prevention and sediment control BMPs shall be inspected to ensure integrity and effectiveness during all routine and post-rainfall inspections. All non-functional BMPs must be repaired, replaced, or supplemented with equivalent BMPs by the end of the next business day after discovery, or as soon as field conditions allow.

All perimeter control devices must be repaired, replaced, or supplemented when they become non-functional or the sediments reaches one half (1/2) of the height of the device. These repairs must be made by the end of the next business day after discovery, or as soon as field conditions allow.

Surface waters, including drainage ditches and conveyance systems, must be inspected for erosion and sediment deposition during each inspection. All ditches and sediment deposits in drainage ways, catch basins, and other drainage systems shall be removed. The removal and stabilization must take place within seven (7) days of discovery unless precluded by legal, regulatory, or other access constraints. The Permittee is responsible for obtaining all applicable permits prior to commencing any work in surface waters.

Construction site vehicle exit locations must be inspected for evidence of off-site sediment tracking onto paved surfaces. Tracked sediment must be removed from all paved surfaces both on and off site within 24 hours of discovery, or as soon as field conditions allow.

Erosion and Sedimentation Control Notes

2. Permanent stormwater management system is constructed, meets all requirements of the Permit, and is as operated as designed. "Temporary or permanent sedimentation basins that are to be used as permanent water quality management basins have been cleaned of any accumulated sediment. All sediment has been removed from conveyance systems, and ditches are stabilized with permanent cover.

All temporary synthetic and structural erosion prevention and sediment control BMPs have been removed. BMPs designed to decompose on site may be left in place.

4. For residential construction only, individual lots are considered finally stabilized if the structural features are finished, temporary erosion control and drain under system control has been completed and the residence has been sold to the homeowner. Also, the "Houseowner Fact Sheet" has been provided to the homeowner.
PARTIAL SITE PLAN - EXISTING CONDITION
FOR REFERENCE ONLY

LEGAL:
1. T&R GROUND MOUNTED SERVICE AND LIGHTING CABINET WITH 
   W32 SOCKET (SEE DETAIL SHEET)
2. T&R PIPE FROM SERVICE CABINET TO EXISTING IOEL WOOD
3. R&R POWER DISCONNECT ENCLOSURE, SERVICE HEAD AND OTHR 
   EQUIPMENT PER W32 IF SPSTI
4. POWER CONNECTION BY IOEL ENERGY, CONTACT DAN WESNER 
   AT 612-380-4513.

SHEET 1 Sheet 3

SCALE 1" = 50' 

MINNEAPOLIS PARK AND RECREATION BOARD
724 SIBLEY ST. NE
MINNEAPOLIS, MN 55413

I hereby certify that this plan, specification or report was 
prepared by me or under my direct supervision and that I 
am a duly licensed Engineer under the laws of the State 
of Minnesota.

BRIDGE NO. 28283 REHABILITATION

SPECIFIC NOTES:
1. EXISTING SERVICE CABINET.
2. LOCATION OF EXISTING LIGHT POLE. SEE 2/12.
3. EXISTING BRIDGE

LEGEND:
- LIGHT POLE
- HANGRAIL
- GROUND MOUNTED SERVICE CABINET

Feet

0 50 100
GENERAL NOTES:
A. All conduit, conduit fittings, junction boxes, light fixtures, and transformer enclosure shall be painted to match bridge color, verify color.
B. All conduit exposed above grade shall be AVAC steel, provide conduit supports not more than 6'-0" on center when exposed.
C. All conduit, conduit fittings, and junction boxes to be concealed or mounted such that view from bridge deck is minimized.
D. Cover and protect concrete slabs, curbs, and gutters as required to prevent undermining, distress and damage due to work in this contract. All damaged concrete to be replaced at contractors expense.
E. Locations and sizes of all underground utilities shown are approximate only. Verify all utilities before contractor is responsible for repair to any damaged underground utilities.
F. Contractor responsible for locating and predrilling all utility holes, excluding private utilities, contact Gopher State One Call prior to any excavation.

SPECIFIC NOTES:
1. Disconnect and remove existing light fixture and all associated mounting brackets/devices.
2. Disconnect and remove existing 3/4" conduit and all associated mounting brackets/devices to light pole, remove conductors to light pole.
3. Maintain conduit stub for new extension of conduit.
4. Electrical contractor shall grind smooth bridge members at all removed conduit and fixture mounting points.

PLAN

SECTION A-A

PARTIAL BRIDGE PLAN - ELECTRICAL - DEMOLITION

SHEET 1 OF 13

MINNEAPOLIS PARK AND RECREATION BOARD
724 SIBLEY ST. NE
MINNEAPOLIS, MN 55413

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly licensed Engineer under the laws of the State of Minnesota.
GENERAL NOTES:
A. ALL CONDUIT, CONDUIT FITTINGS, JUNCTION BOXES, LIGHT FIXTURES, AND TRANSFORMER ENCLOSURE SHALL BE PAINTED TO MATCH BRIDGE COLOR.
B. ALL CONDUIT EXPOSED ABOVE GRADE SHALL BE RIGID STEEL. PROVIDE CONDUIT SUPPORTS NOT MORE THAN 5'-0" ON CENTER WHEN EXPOSED.
C. ALL CONDUIT, CONDUIT FITTINGS, AND JUNCTION BOXES TO BE CONCEALED OR MOUNTED SUCH THAT VIEW FROM BRIDGE DECK IS MINIMIZED. COLLAR ALL CONDUIT SUPPORTS IN OWNER AND ENGINEER PRIOR TO INSTALLATION.
D. COVER AND PROTECT CONCRETE SLABS, CURB, AND GUTTERS AS REQUIRED TO PREVENT UNDERMINING, DISTRESS, AND DAMAGE DUE TO WORK IN THIS CONTRACT. ALL DAMAGED CONCRETE TO BE REPLACED AT CONTRACTOR'S EXPENSE.
E. LOCATIONS AND SIZES OF ALL UNSPOTTED UTILITY SHOWN ARE APPROXIMATE ONLY. VERIFY ALL UTILITIES. CONTRACTOR RESPONSIBLE FOR REPAIR TO ANY DAMAGED UNDERGROUND UTILITY.
F. CONTRACTOR RESPONSIBLE FOR LOCATING AND PROTECTING ALL SITE UTILITIES, INCLUDING PRIVATE UTILITIES. CONTACT INCLUDER STATE ONE CALL PRIOR TO ANY EXCAVATION.

SPECIFIC NOTES:
1. TYPE A LIGHT FIXTURE SEE 1/63 AND 2/63.
2. POWER DISTRIBUTION JUNCTION BOX, SEE 1/63.
3. 1/2" OD X 3/4" ID, 20° 30′, MOUNT ON TOP OF UPPER CROSS ARM.
4. TRANSFORMER ENCLOSURE, MOUNT TO SIDE OF BEAM. APPROXIMATE DIMENSIONS 1'-6" X 3'-0" X 6'-0".
5. REMOVE EXISTING CONDUIT, PROVIDE NEW CONDUIT CONCEALED IN TRUCK COORDINATE PLACEMENT WITH ENGINEER AND OWNER EXTEND FROM EXISTING LIGHT POLE TO NEW TRANSFORMER ENCLOSURE.

PHOTO - ELECTRICAL

SECTION A-A

BRIDGE SECTION - ELECTRICAL

PARTIAL BRIDGE PLAN - ELECTRICAL

PLAN

E2
**LEFT FIXTURE SCHEDULE**

<table>
<thead>
<tr>
<th>LETTER TYPE</th>
<th>FIXTURE TYPE</th>
<th>VOLT</th>
<th>FLUOR</th>
<th>HID</th>
<th>LED</th>
<th>MOUNTING</th>
<th>LAMP</th>
<th>CONTROL</th>
<th>MANUFACTURER'S CATALOG NUMBERS</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AA SMALL CYLINDER FLOODLIGHT 120/12 X SURFACE NOTE 1 SQUARE CUT ADJUSTABLE VISOR, GLASS LENS, REPLACEABLE LAMPS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SURFACE</td>
<td>NOTE 1</td>
<td>NOTE 2, 3</td>
<td>TOUCHSTONE, FIXTURE # A212-SQ-CC, TRANSFORMER # TR75 USC-CKO OR APPROVED EQUAL</td>
<td>NOTE 2, 3</td>
</tr>
</tbody>
</table>

**NOTES:**

1. MR 16, 7 WATT, 20 DEGREE BEAM SPREAD, 80 CRI, 3000K LED.
2. CUSTOM COLOR TO MATCH BRIDGE, VERIFY COLOR WITH OWNER/ARCHITECT.
3. TRANSFORMER, (1) THUS. PROVIDE CUSTOM KNOCK OUTS AS REQUIRED BY DESIGN AND CABINET MOUNTING ORIENTATION.

**SPECIFIC NOTES:**

1. TYPE "AA" FIXTURE, SEE 2/E3 AND 3/E3.
2. 1/2"/CON, 2#14 + GND.
3. 4" SQUARE, WEATHERPROOF, POWER DISTRIBUTION JUNCTION BOX MOUNT ON TOP OF UPPER CONCRETE DECK.
4. APPROXIMATE DIAMETER OF ILLUMINATION AT BRIDGE DECK, ANTICIPATED TO BE 0.6-1.0foot-cones in 8" DIAMETER CIRCLE WITH FIXTURE IN VERTICAL ORIENTATION. CONTRACTOR SHALL FIELD AMOUNT AND PROVIDE ALLOWANCE FOR ONE NIGHT TIME ADJUSTMENT AS DIRECTED BY OWNER AND ENGINEER.
5. TYPE "AA" FIXTURE AND JUNCTION BOX ON OPPOSITE SIDE OF PLATE.
6. CONSULT TRANSITION TO OPPOSITE SIDE OF PLATE TO BE ROUTED OVER TOP OF ANGLE, NOT BELOW.
7. BOTTOM OF REFLECTOR TO BE FLUSH WITH BOTTOM ANGLE OF PLATE.
8. 4" SQUARE, WEATHERPROOF JUNCTION BOX MOUNT ON VERTICAL FACE OF PLATE, PROVIDE 3/4"GAGES AS REQUIRED.
9. CONCEAL ON TOP OF ANGLE.
10. CONCEAL IN TRUSS.
11. OFFSET CONNECTION FROM TRUSS TO ANGLE.

**DRAWING NO.**

BRIDGE NO. 93835 REHABILITATION MINNEAPOLIS PARK AND RECREATION BOARD 24 SIBLEY ST. NE MINNEAPOLIS, MN 55413

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly licensed Engineer under the laws of the State of Minnesota.
1. **Scope:**
   - This section includes all relevant information and requirements necessary for the installation and operation of the electrical system. It covers the design, installation, and maintenance of electrical components, including but not limited to:
     - Electrical submittal drawings
     - Electrical plans and specifications
     - Electrical materials and equipment
     - Electrical installation and testing procedures
     - Electrical code compliance

2. **Results:**
   - The following sections detail the electrical system's design, installation, and maintenance requirements.
   - Each section includes a description of the electrical system components, installation procedures, and maintenance schedules.
   - A comprehensive list of electrical materials and equipment is provided.
   - Detailed electrical plans and specifications are included.

3. **Conclusion:**
   - The electrical system design meets all necessary code requirements.
   - Installation and maintenance procedures ensure the system's reliability and safety.
   - Proper electrical materials and equipment selection is critical for system performance.

---

**SECTION I. GENERAL**

1. **Scope:**
   - This section includes all relevant information and requirements necessary for the installation and operation of the electrical system. It covers the design, installation, and maintenance of electrical components, including but not limited to:
     - Electrical submittal drawings
     - Electrical plans and specifications
     - Electrical materials and equipment
     - Electrical installation and testing procedures
     - Electrical code compliance

2. **Results:**
   - The following sections detail the electrical system's design, installation, and maintenance requirements.
   - Each section includes a description of the electrical system components, installation procedures, and maintenance schedules.
   - A comprehensive list of electrical materials and equipment is provided.
   - Detailed electrical plans and specifications are included.

3. **Conclusion:**
   - The electrical system design meets all necessary code requirements.
   - Installation and maintenance procedures ensure the system's reliability and safety.
   - Proper electrical materials and equipment selection is critical for system performance.
Date: October 15, 2016

To: Whom it may Concern

RE: NIEBNA preferences for Nicollet Island – Boom Island bridge materials and design

At the NIEBNA Board meeting on October 13, 2016 Daniel Elias from the Minneapolis Park and Recreation Board (MPRB) presented and discussed plans to repair the bridge between Boom Island and Nicollet Island. Multiple alternatives were presented for deck material, railing design and other design details.

The MPRB soliciting public comments regarding which of the alternatives should be adopted. Daniel encouraged people to make their preferences known either by returning the paper ballot he handed out at the meeting or by using the on-line survey at the project web site here.

In addition, the NEBNA Board adopted the following resolution by unanimous vote:

**Resolved:** The NIEBNA Board specifies as its preferred options the following:

a) for Decking, Option 1 (wood planking similar to the existing decking) and  

b) for Railings, Option 4 (vertical steel members)

Please contact me with any questions.

For the Nicollet Island – East Bank Neighborhood Association

/s/ P. Victor Grambsch

P. Victor Grambsch  
President