

HISTORIC AND DESIGN REVIEW COMMISSION

August 05, 2015

Agenda Item No: 9

HDRC CASE NO: 2015-291
COMMON NAME: 100 E Crockett / Crockett Street Bridge
ZONING: UZROW
CITY COUNCIL DIST.: 1
DISTRICT: Alamo Plaza Historic District
LANDMARK: Crockett Street Bridge
APPLICANT: Brian Kuehl
OWNER: City of San Antonio
TYPE OF WORK: Crockett Street Bridge Improvements
REQUEST:

The applicant is requesting conceptual approval to rehabilitate the Crockett Street Bridge over the San Antonio River. The bridge is a lenticular pony truss that was built in 1891 and is eligible for listing in the National Register of Historic Places.

Within this rehabilitation, the applicant will remove and replace the concrete slab and sidewalks as well as the iron stringers; repair and replace structural connections; clean and paint existing elements, improve the existing drainage system, install new approach pavement, install illumination and landscape under the bridge within ten feet.

APPLICABLE CITATIONS:

UDC Section 35-643., Alteration, Restoration and Rehabilitation

In considering an application for a certificate to alter, restore, rehabilitate, or add to a building, object, site or structure the historic and design review commission shall be guided by the following general standards of the Secretary of the Interior's Standards for Rehabilitation in addition to any specific design guidelines included in this article:

- (a) Every reasonable effort shall be made to adapt the property in a manner which requires minimal alteration of the building, structure, object, or site and its environment.
- (b) The distinguishing original qualities or character of a building, structure, object, or site and its environment, shall not be destroyed. The removal or alteration of any historic material or distinctive architectural features should be avoided when possible.
- (c) All buildings, structures, objects, and sites shall be recognized as products of their own time. Alterations that have no historical basis and which seek to create an earlier appearance shall be discouraged.
- (d) Changes which may have taken place in the course of time are evidence of the history and development of a building, structure, object, or site and its environment. These changes may have acquired significance in their own right, and this significance shall be recognized and respected.
- (e) Distinctive stylistic features or examples of skilled craftsmanship which characterize a building, structure, object, or site shall be kept where possible.
- (f) Deteriorated architectural features shall be repaired rather than replaced, wherever possible. In the event replacement is necessary, the new material should reflect the material being replaced in composition, design, color, texture, and other visual qualities. Repair or replacement of missing architectural features should be based on accurate duplications of features, substantiated by historical, physical, or pictorial evidence rather than on conjectural designs or the availability of different architectural elements from other buildings or structures.
- (g) The surface cleaning of structures shall be undertaken with the gentlest means possible. Sandblasting, high pressure washes and other cleaning methods that will damage the historic building's materials shall not be undertaken.
- (h) Every reasonable effort shall be made to protect and preserve archaeological resources affected by, or adjacent to, any project.
- (i) Contemporary design for alterations and additions to existing properties shall not be discouraged when such alterations and additions do not destroy significant historical, architectural or cultural material, and such design is compatible with the size, scale, color, material, and character of the property, neighborhood or environment.
- (j) Wherever possible, new additions or alterations to buildings, structures, objects, or sites shall be done in such a manner

that if such additions or alterations were to be removed in the future, the essential form and integrity of the building, structure, object, or site would be unimpaired.

UDC Section 35-673. Site Design Standards

(c) **Topography and Drainage.** The natural contours of occasional hillsides and riverbanks contribute to the distinct character of the San Antonio River and shall be considered in site designs for new development. Site plans shall minimize the need for cut and fill. It should be considered as an opportunity for positive enhancements through the creative use of terraces and retaining walls.

(1) **Visual Impacts of Cut and Fill.** Divide a grade change of more than ten (10) vertical feet into a series of benches and terraces. Terrace steep slopes following site contours. When creating site benches, using sloped "transitional areas" as part of the required landscaping is appropriate.

(2) **Minimize the Potential for Erosion at the Riverbank.** Grade slopes at a stable angle not to exceed four to one (4:1) and provide plant material that will stabilize the soil such as vigorous ground covers, vines or turf planting that are native and noninvasive species as found on the permissible plant list maintained by the parks and recreation department. Use of stabilizing materials such as geo-web or geo-grid is permitted as long as plant material is used to conceal the grid.

Use of terraced walls is permitted when there is a slope of more than four to one (4:1).

(e) **Landscape Design.** Lush and varied landscapes are part of the tradition of the San Antonio River. These design standards apply to landscaping within an individual site. Additional standards follow that provide more specific standards for the public pathway along the river and street edges.

(1) **Provide Variety in Landscape Design.** Provide variety in the landscape experience along the river by varying landscape designs between properties. No more than seventy-five (75) percent of the landscape materials, including plants, shall be the same as those on adjacent properties. (see Figure 673-4)

(2) **Planting Requirements in Open Space Abutting the River.** On publicly-owned land leased by the adjoining property owner, if applicable, and/or within privately owned setbacks adjacent to the river, a minimum percentage of the open space, excluding building footprint, lease space under bridges and parking requirements, are required to be planted according to Table 673-2.

A. Planting requirements in RIO-4, RIO-5, and RIO-6 should continue the restoration landscape efforts along the river banks. Planting in these RIO districts is to be less formal so as to maintain the rural setting of the river.

B. In "RIO-3," if existing conditions don't meet the standards as set out in Table 673-2, the owner or lessee will not have to remove paving to add landscaping in order to meet the standards until there is a substantial remodeling of the outdoor area. Substantial remodeling will include replacement of seventy-five (75) percent of the paving materials, or replacement of balcony and stair structures.

(f) **Plant Materials.** A number of soil conditions converge in the San Antonio area to create unique vegetation ecosystems. Along the route of the San Antonio River, the soil conditions vary greatly from the northern boundary near Hildebrand to the city limits near Mission San Francisco de la Espada (Mission Espada) and therefore native and indigenous plants will vary accordingly. Landscaping should reflect the unique soil characteristics of the specific site.

(1) **Incorporate Existing Vegetation.** Extend the use of landscape materials, including plants, shrubs and trees that are used in the public areas of the river onto adjacent private areas to form a cohesive design.

(2) **Use indigenous and noninvasive species characteristic of the specific site as found on the permissible plant list maintained by the parks and recreation department or the Unified Development Code Plant List found in Appendix E.**

In "RIO-3," plantings of tropical and semi-tropical plants with perennial background is permitted.

(g) **Paving Materials.** An important San Antonio landscape tradition is the use of decorative surfaces for paving and other landscape structures. Paving materials and patterns should be carefully chosen to preserve and enhance the pedestrian experience.

(1) **Vary Walkway, Patio and Courtyard Paving to Add Visual Interest on the Riverside of Properties Abutting the River.** Pervious paving is encouraged where feasible and appropriate to the site.

A. A maximum of six hundred (600) square feet is allowed for a single paving material before the paving material must be divided or separated with a paving material that is different in texture, pattern, color or material. A separation using a different material must be a minimum of twenty-four (24) inches wide, the full width of the pathway.

B. A maximum of one hundred (100) lineal feet is allowed in a walkway before the pattern must change in districts "RIO-2," "RIO-3," and "RIO-4." A maximum of five hundred twenty-eight (528) lineal feet is allowed

before the pattern must change in districts "RIO-1," "RIO-5" and "RIO-6." The change of material at five hundred twenty-eight (528) lineal feet will define and delineate one-tenth-mile markers.

C. In "RIO-3," the Riverwalk pathway shall be delineated by using a separate material that is clearly distinguished from the adjacent patio paving materials. If the historic Hugman drawings indicate a sidewalk width and pattern on the site, that paving pattern and material shall be replicated.

(j) Lighting. Site lighting should be considered an integral element of the landscape design of a property. It should help define activity areas and provide interest at night. At the same time, lighting should facilitate safe and convenient circulation for pedestrians, bicyclists and motorists. Overspill of light and light pollution should be avoided.

(1) Site Lighting. Site lighting shall be shielded by permanent attachments to light fixtures so that the light sources are not visible from a public way and any offsite glare is prevented.

A. Site lighting shall include illumination of parking areas, buildings, pedestrian routes, dining areas, design features and public ways.

B. Outdoor spaces adjoining and visible from the river right-of-way shall have average ambient light levels of between one (1) and three (3) foot-candles with a minimum of 0.5-foot candles and a maximum of six (6) foot-candles at any point measured on the ground plane. Interior spaces visible from the river right-of-way on the river level and ground floor level shall use light sources with no more than the equivalent lumens of a one hundred-watt incandescent bulb. Exterior balconies, porches and canopies adjoining and visible from the river right-of-way shall use light sources with the equivalent lumens of a sixty-watt incandescent bulb with average ambient light levels no greater than the lumen output of a one hundred-watt incandescent light bulb as long as average foot candle standards are not exceeded. Accent lighting of landscape or building features including specimen plants, gates, entries, water features, art work, stairs, and ramps may exceed these standards by a multiple of 2.5. Recreational fields and activity areas that require higher light levels shall be screened from the river hike and bike pathways with a landscape buffer.

C. Exterior light fixtures that use the equivalent of more than one hundred-watt incandescent bulbs shall not emit a significant amount of the fixture's total output above a vertical cut-off angle of ninety (90) degrees. Any structural part of the fixture providing this cut-off angle must be permanently affixed.

D. Lighting spillover to the publicly owned areas of the river or across property lines shall not exceed one-half (½) of one (1) foot-candle measured at any point ten (10) feet beyond the property line.

(2) Provide Lighting for Pedestrian Ways That is Low Scaled for Walking. The position of a lamp in a pedestrian-way light shall not exceed fifteen (15) feet in height above the ground.

(3) Light Temperature and Color.

A. Light temperature and color shall be between 2500° K and 3500° K with a color rendition index (CRI) of eighty (80) or higher, respectively. This restriction is limited to all outdoor spaces adjoining and visible from the river right-of-way and from the interior spaces adjoining the river right-of-way on the river level and ground floor level. Levels shall be determined by product specifications.

(4) Minimize the Visual Impacts of Exterior Building Lighting.

A. All security lighting shall be shielded so that the light sources are not visible from a public way.

B. Lighting (uplighting and downlighting) that is positioned to highlight a building or outdoor artwork shall be aimed at the object to be illuminated, not pointed into the sky.

C. Fixtures shall not distract from, or obscure important architectural features of the building. Lighting fixtures shall be a subordinate feature on the building unless they are incorporated into the over-all design scheme of the building.

(5) Prohibited Lighting on the Riverside of Properties Abutting the River.

A. Flashing lights.

B. Rotating lights.

C. Chaser lights.

D. Exposed neon.

E. Seasonal decorating lights such as festoon, string or rope lights, except between November 20 and January 10.

F. Flood lamps.

(6) Minimize the visual impacts of lighting in parking areas in order to enhance the perception of the nighttime sky and to prevent glare onto adjacent properties. Parking lot light poles are limited to thirty (30) feet in height, shall have a 90° cutoff angle so as to not emit light above the horizontal plane.

FINDINGS:

- a. The Crockett Street Bridge was constructed in 1891 and is eligible for the National Register of Historic Places. The applicant has proposed to rehabilitate the structure, restoring it to its full load carrying capacity all while improving pedestrian access to and on the bridge as well as landscape design beneath the bridge at the San Antonio Riverwalk.
- b. The applicant has proposed to repair the existing iron floor beams, repair the existing iron truss members, repair various abutments, bearings and vertical end posts, install new stringers, remove all rust, repaint all new iron and steel to match the existing and cast a new concrete deck and sidewalk. This is consistent with the UDC Section 35-643 as well as the Secretary of the Interior's Standards regarding alteration, restoration and rehabilitation.
- c. In addition to the structural repair requests noted in finding b and exhibit 3.1 on page 3, the applicant has proposed to install a trench drain across Crockett street approximately five feet behind the eastern abutment, mill existing asphalt pavement from Losoya to N Presa, replace curbs from the western abutment to N Presa and install 2 inches of new asphalt pavement from Losoya to N Presa. The applicant has proposed general roadway and drainage repairs that are to match the existing. Staff finds these improvements appropriate.
- d. Per the UDC Section 35-673(f) regarding plant materials, projects along the Riverwalk should incorporate existing vegetation and use indigenous and noninvasive species. The applicant has proposed to replant the existing planters beneath the bridge while preserving a row of existing vegetation. The applicant is responsible for complying with the UDC regarding the appropriateness of specific plant materials.
- e. The applicant has proposed to introduce various lighting features both beneath the Crockett Street Bridge and in the surrounding area at the Riverwalk Level. The proposed lighting includes lighting in the existing planters, lighting in the existing fountain, casting a light pattern onto the river below, simple down lighting on the wall, fiber optic stars over river level seating, replacing bridge lighting and replacing pedestrian oriented lighting as needed at the Riverwalk level. Generally, the applicant's request is consistent with the UDC Section 35-673(j) regarding lighting, however, both the proposed painted mural and river projection shall be reviewed by Public Art San Antonio (PASA) per UDC Division 5.
- f. According to the UDC Section 35-643(a), every reasonable effort shall be made to adapt the property in a manner which requires minimal alteration of the building, structure, object, or site and its environment. To ensure that no irreparable damage is done, staff recommends that the applicant provide information regarding lighting fixtures and their mounting to any historic element. The applicant should provide this information prior to returning to the HDRC.

RECOMMENDATION:

Staff recommends approval based on findings a through e with the following stipulations:

- i. That the applicant provide additional information and specifications on the proposed fiber optic star lighting and additional information on the proposed painted mural and river projection as well as coordination with PASA regarding any proposed publicly displayed art.
- ii. That the applicant provide additional information regarding the proposed lighting fixtures and how they will be mounted to any historic element.

CASE MANAGER:

Edward Hall





N

Flex Viewer

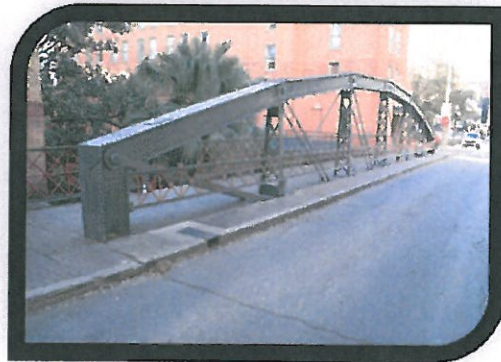
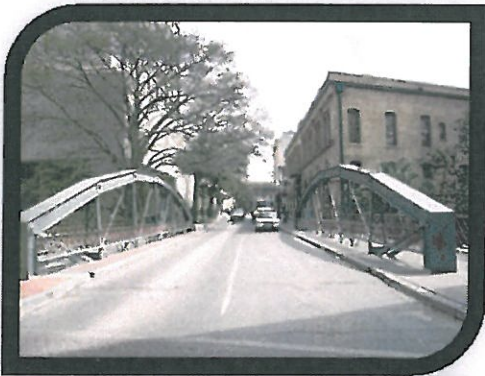
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CITY OF SAN ANTONIO

Crockett Street Bridge Rehabilitation Description & Exhibits for HDRC



JACOBS™

June
2015

1.0 INTRODUCTION

The City of San Antonio (COSA) Transportation and Capital Improvements (TCI) has hired Jacobs Engineering Inc. to provide civil engineering design services for the rehabilitation of the existing Crockett Street Bridge located in downtown San Antonio, Texas. The design services for the rehabilitation include a Preliminary Engineering Report (PER) and the development of the detailed plans, specifications, and estimate (PS&E). The PER was completed in August 2014 and describes the deficiencies verified through visual inspection and analysis. The PS&E is schedule to be completed in November 2015 with construction beginning in 2016.

This document provides a description and exhibits of the proposed concepts to rehabilitate the bridge. The rehabilitation includes the repair or replacement of deficient structural elements, approach pavement, illumination, and landscaping under the bridge and within 10-ft of the bridge edges. The objective of the rehabilitation is to re-establish the original load carrying capacity of the bridge.

The attached Exhibits include:

- Exhibit A – Photos
- Exhibit B – Site Plan
- Exhibit C – Conceptual Details
- Exhibit D – Specification of Materials
- Exhibit E – Preliminary Engineering Report

2.0 DESCRIPTION

The Crockett Street Bridge is a single span; riveted wrought iron, steel, and concrete; Lenticular Pony Truss supported on abutment walls over the San Antonio River and River Walk. The bridge was constructed in 1891 and is eligible for listing in the National Register of Historic Places (NRHP). The bridge had a few minor repairs over the years with the latest rehabilitation repairs documented in "As-Built" plans dated 1986. The National Bridge Inventory (NBI) number is 15-015-0-B083-10-001.

The overall length is 86'-0" and measures 84'-0" feet center to center. The single span consists of six structural panels, each having a length of 14 feet. Each panel is made up of an estimated 8 inch concrete deck and preformed metal pan forms that are supported by ten longitudinal stringers connected to transverse floor beams. There are five transverse floor beams, which transfer loads to the trusses. The end panels are supported by the outer floor beams and the abutment walls. Also, there are lateral brace members at each panel except in panel 1. The trusses on each edge of the bridge, consists of two end posts and five interior vertical towers. The vertical towers are made up of angles, plates, and lattice. The truss has top and bottom chords and

diagonal members. The top chords consist of riveted built-up plates and angle sections; the bottom chords are flat eye bars; and the diagonal members are rods. The primary connections for the trusses occur at each end of the floor beams and at top of the vertical towers. The connections are secured by 4 inch diameter pins. See Figure 1 for Truss 2 top chords, end posts and vertical towers and Figure 2 for bottom chords, floor beams, and stringers. The bridge has a 6'-7" sidewalk on each side and a 20'-0" roadway width. The sidewalks include pedestrian rails consisting of top and bottom horizontal members connected by thin strips of steel lattice supported by vertical and diagonal bar posts connected to the truss floor beams.

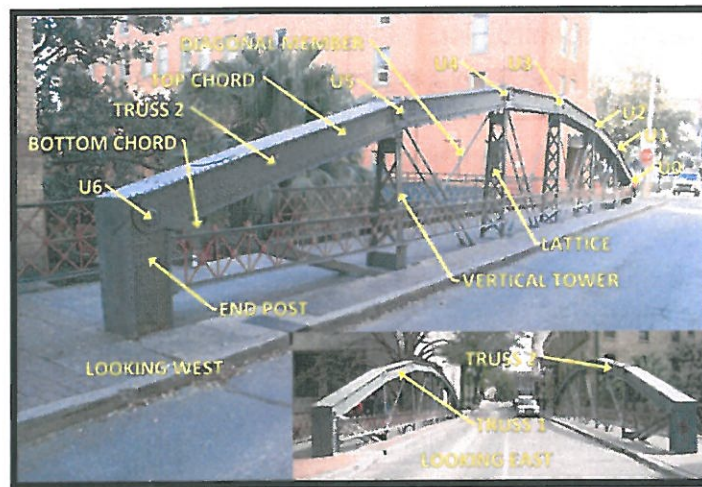


Figure 1: Truss 2 Top Chords, End Posts and Vertical Towers

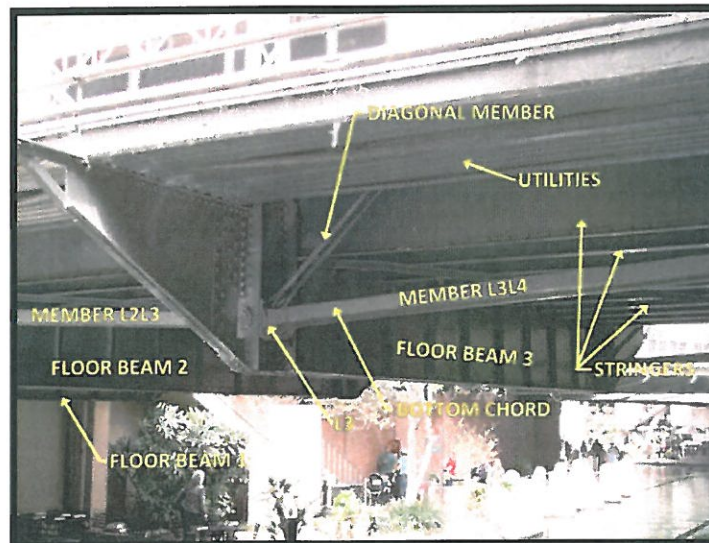


Figure 2: Truss Bottom Chords, Floor Beams and Stringers

3.0 NARRATIVE OF PROPOSED WORK

3.1 Structure

- 1) Temporarily close upper road and sidewalk surfaces.
- 2) Suspend overhead protection from truss to protect River walk.
- 3) Remove existing drain inlets, concrete slab, metal pan forms, and sidewalks.
- 4) All existing utilities on bridge remain supported by the floor beams.
- 5) Remove all existing iron stringers.
- 6) Remove existing paint, surface corrosion, and pack rust.
- 7) Repair iron floor beams.
 - a) Replace bottom angles with significant section loss.
 - b) Replace splice plates with significant section loss.
 - c) Replace stiffeners with significant section loss.
 - d) Replace cover plates connecting to vertical towers.
 - e) Repair connections between longitudinal stringers and floor beams.
- 8) Repair iron truss members
 - a) Repair damaged end post plates.
 - b) Repair/replace cracked or missing rivets.
 - c) Repair/replace cracked nuts at pins.
 - d) Repair/replace bolts at connections with severe corrosion and cracks.
 - e) Remove/clean pack rust on pins.
 - f) Prevent future spreading of crack on plate on truss one at node U1.
- 9) Assess and supplement abutments.
 - a) Expose abutment to visually assess the existing structural condition of the abutment walls.
 - b) Cast new concrete walls around back side and edges of abutments to protect truss bearings from soil and water.
- 10) Assess and repair bearings and truss vertical end posts.
 - a) Expose and assess existing condition of abutment bearings.
 - b) Expose and assess of existing condition of truss vertical end members.
 - c) Repair/replace all failed bearings and truss vertical end posts.
- 11) Install all new steel stringers to replace the ones removed.
- 12) Place new steel pan forms to replace the ones removed.
- 13) Repair damaged pedestrian rail components and supplement lattice and horizontal members with additional members to meet current requirements.
- 14) Primer and paint all iron and steel components to match existing colors.
- 15) Place new sealed expansion joints at each abutment

16) Cast new concrete deck and sidewalks

3.2 Roadway and Drainage

- 1) Place trench drain across Crockett street approximately 5-ft behind Eastern abutment. Drain will tap into existing storm drain under bridge that outflows into existing fountain at river level.
- 2) Mill existing asphalt pavement from Losoya Street to N. Presa Street
- 3) Replace curbs from Western abutment to N. Presa Street.
- 4) Place 2" of new asphalt pavement from Losoya Street to N. Presa Street

3.3 Landscape and Illumination

- 1) Replace plants with same plants as existing.
- 2) Paint mural on west abutment wall under bridge.
- 3) Place simple down lighting on mural under west end of bridge
- 4) Place small faux column under south-west side of bridge to frame mural.
- 5) Remove existing flood lights under bridge that shine onto fountains.
- 6) Place new lights in fountains and landscaping under bridge.
- 7) Place new light under bridge to cast pattern on river.
- 8) Place fiber optic star lighting over seating under west end of bridge.
- 9) Replace existing holiday lights on bridge edges with similar lights
- 10) Replace existing lights in top chords of trusses with similar lights
- 11) Remove existing can shaped lights under bridge and replace them with architectural fixtures.

Exhibit A – Photos



Figure 1: Northern Elevation of Crockett Bridge (Looking South)



Figure 2: Southern Elevation of Crockett Bridge (Looking North)



Figure 3: Southern Truss (Looking West toward N. Presa St.)



Figure 4: Northern Truss (Looking West toward N. Presa St.)



Figure 5: Crockett Bridge Section (Looking East toward Losoya St.)



Figure 6: Crockett Bridge at Night with Holiday Lights (Looking South-East from N. Presa St.)



Figure 7: Underside of Crockett Bridge (Looking East at East Abutment Wall)



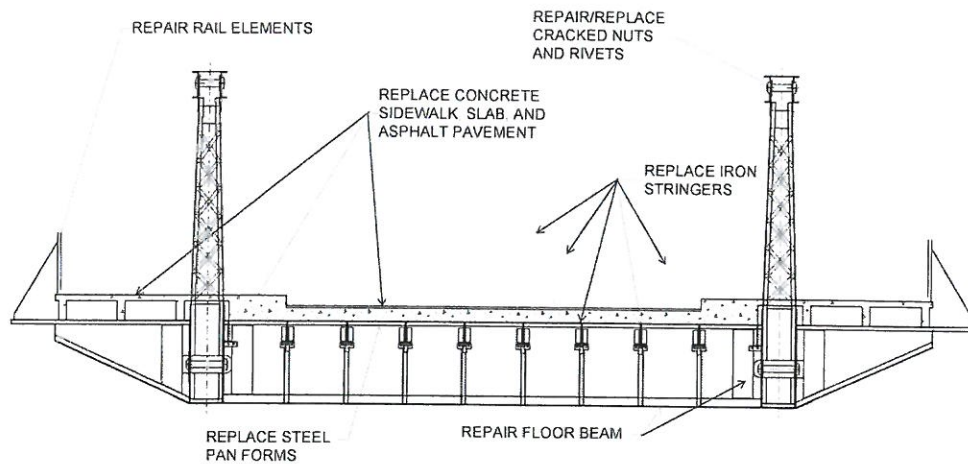
Figure 8: Underside of Crockett Bridge (Floor Beam and Stringers with corroded connections)

Exhibit B – Site Plan

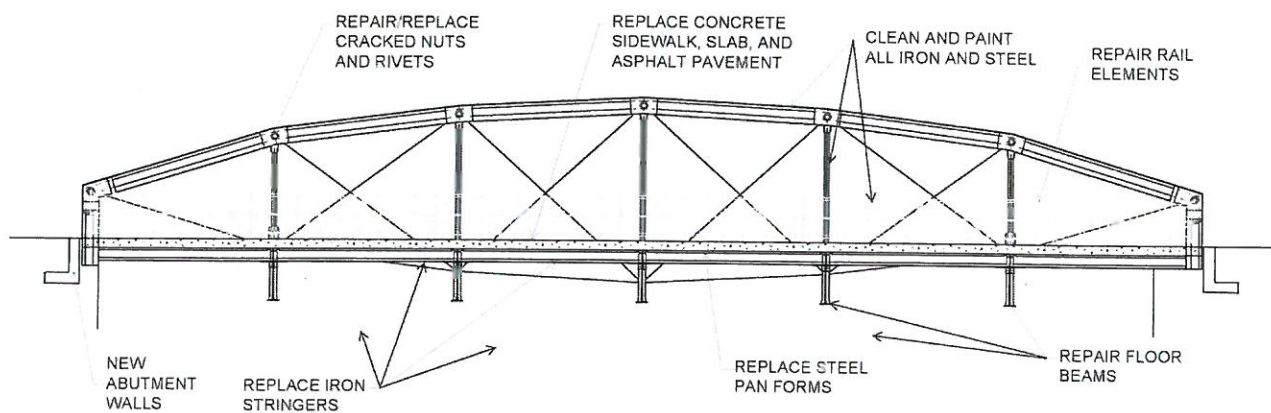


Exhibit C – Conceptual Details

C.1 Structure



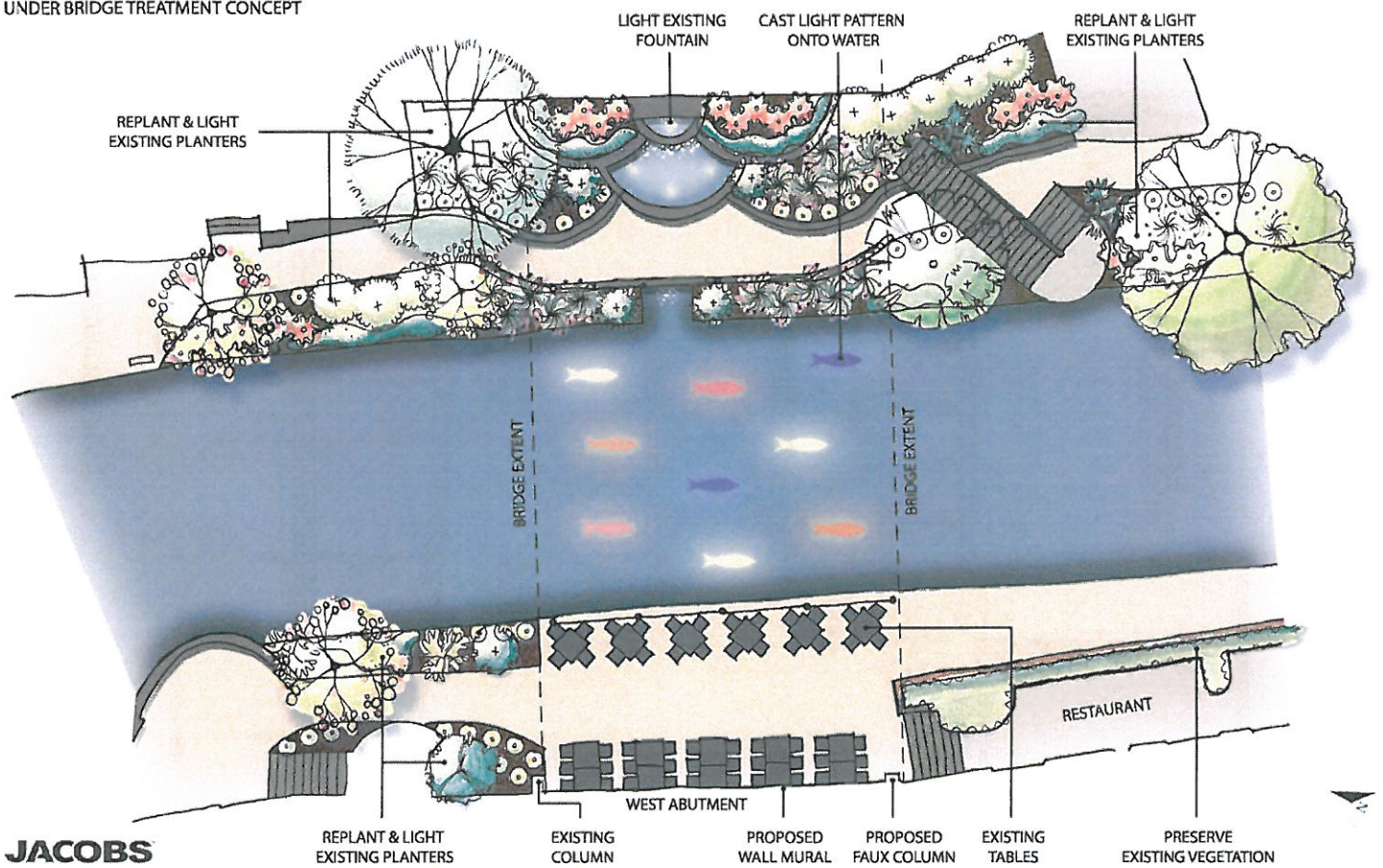
BRIDGE SECTION



BRIDGE ELEVATION

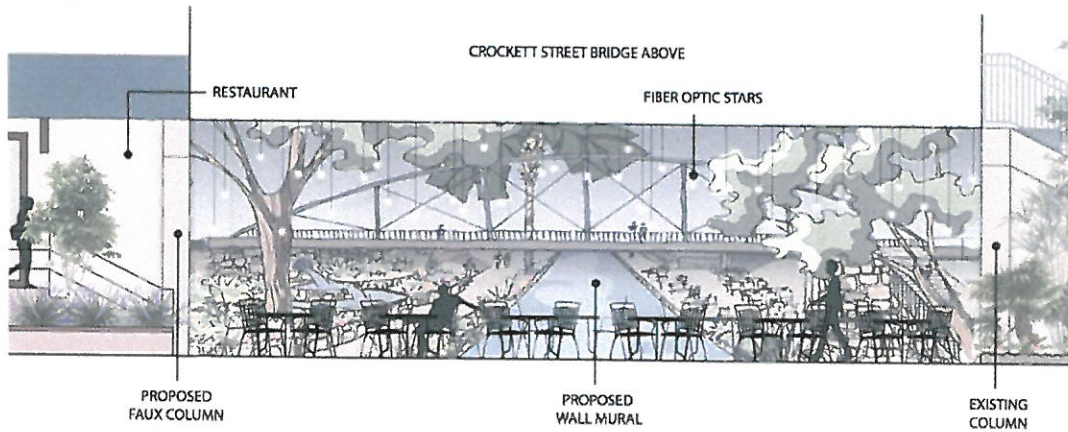
C.2 Landscape

CROCKETT STREET BRIDGE UNDER BRIDGE TREATMENT CONCEPT



CROCKETT STREET BRIDGE UNDER BRIDGE TREATMENT CONCEPT

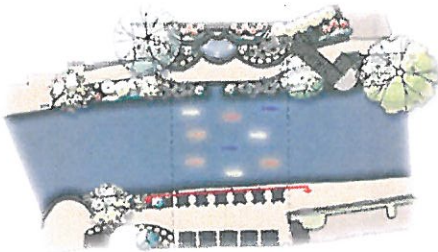
ELEVATION OF WEST ABUTMENT WALL:
SCALE: 1" = 5'



DESIGN ENHANCEMENTS:

- Replant existing planters
- Lighting in planters
- Lighting in fountain
- Light pattern cast onto water
- Painted mural on west abutment wall
- Simple down lighting on wall
- Faux column to frame wall mural
- Fiber optic stars over seating
- Replace existing bridge structure lighting as needed
- Replace existing light fixtures under bridge as needed for adequate lighting

PLAN:
SCALE: N.T.S.



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IMAGERY:



C.3 Illumination

