Beckett Bridge

Project Development & Environment (PD&E) Study

from **Chesapeake Drive** *to* **Forest Avenue**

Tarpon Springs, Pinellas County, FL

Pinellas County Project ID: PID 2161 • ETDM #: 13040

FDOT Financial Project ID: 424385-1-28-01

Cultural Resource Section 106 Effects Consultation Case Study Report

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EXECUTIVE SUMMARY

Pinellas County, in coordination with the Florida Department of Transportation (FDOT) District Seven, the United States Coast Guard (USCG), and the Federal Highway Administration (FHWA), is conducting a Project Development and Environment (PD&E) Study (FDOT Financial Project ID No.: 424385-1-28-01) to evaluate alternatives to remove, rehabilitate or replace the existing Beckett Bridge (Bridge no. 154000) in Tarpon Springs, Pinellas County, Florida. The existing bridge was originally constructed in 1924 as a timber structure with a steel movable span. The fixed timber approach spans were replaced with concrete approach spans in 1956. Since 1956, major repairs were performed in 1979, 1996, and in 2011. Despite these repairs, major rehabilitation or replacement of the bridge is needed to keep the bridge open and operating, safely and efficiently.

This Cultural Resource Section 106 Effects Consultation Case Study Report for Beckett Bridge PD&E Study was prepared for Pinellas County in coordination with the FDOT, District Seven, USCG, and the FHWA by Janus Research in conjunction with URS. In accordance with the provisions of the Section 106 of the *National Historic Preservation Act (NHPA) of 1966* (Public Law 89-665, as amended), as implemented by 36 CFR Part 800 (*Protection of Historic Properties*, revised January 2001), this Case Study Report documents potential effects of the proposed alternatives improvements to the National Register of Historic Places (National Register)–eligible resources within the project area of potential effects (APE).

A Cultural Resource Assessment Survey (CRAS) was prepared by Janus Research in February of 2013 to document cultural resources within the APE. One newly recorded historic resource, the Beckett Bridge (8PI12017), has been determined eligible for listing in the National Register in Pinellas County as an individual historic resource. The bridge is eligible under Criterion A for its contributions to the patterns of development and transportation in the State, and under Criterion C for its distinct engineering. It is one of a few known, pre-1965, highway single-leaf rolling-lift bascule bridges remaining in Florida. The remaining resources (8PI12043-8PI12055, 8PI12068, 8PI12069) were determined ineligible for listing in the National Register as individual historic resources or as part of a historic district. The State Historic Preservation Officer (SHPO) concurred with the overall findings of the CRAS report on April 11, 2013 (Appendix A). However, in order to expedite the determination of significance for the Beckett Bridge, prior to the

completion of the final CRAS report, a Determination of Eligibility for the bridge was prepared (Appendix B). FHWA agreed that the Beckett Bridge was individually eligible for listing in the National Register on September 17, 2012, and the SHPO concurred with this finding on October 8, 2012 (Appendix A).

Based upon the Section 106 process, potential effects that the improvements may have on the identified National Register–eligible Beckett Bridge were evaluated. Subsequently, this report includes a summary description of the project and a summary description of the significant bridge. The Criteria of Adverse Effect, as defined in 36 CFR Part 800.5, were applied to the bridge and the subsequent analysis of effects is also discussed in this report. This document evaluates the alternatives that have been presented as part of the PD&E Study, and the effects these alternatives may have on the National Register–eligible Beckett Bridge.

In summary, the No-Build Alternative will result in a no adverse effect finding. The remaining alternatives, including the rehabilitation and build alternatives, will have an adverse effect on the Beckett Bridge. The Recommended Alternative will also have an adverse effect on the Beckett Bridge.

Public involvement was conducted as part of the Section 106 process, including the Alternatives Public Meeting on January 23, 2013, the Public Hearing on February 26, 2014, and several meetings specific to the Section 106 process. A Cultural Resource Committee (CRC) was established to include affected and interested parties: FDOT, FHWA, SHPO, USCG, City of Tarpon Springs, Pinellas County, Tarpon Springs Yacht Club, and the Tarpon Springs Historical Society. These CRC Meetings took place October 29, 2012 and March 13, 2013, and focused on the Section 106 process, proposed alternatives, and potential effects to the historic bridge. The input obtained from the meeting participants assisted in the further development of alternatives. A third CRC meeting was held on April 24, 2014, following confirmation of the Preferred Alternative as the Recommended Alternative by the Pinellas County Commission at the Commission's April 15, 2014 meeting. Minimization and mitigation options were discussed at this meeting.

In response to a request by SHPO and the CRC at the October 29, 2012 meeting, evaluation of an additional rehabilitation alternative that provided wider sidewalks on both sides of the bridge was conducted. The results of this evaluation were presented to FHWA, FDOT and SHPO

representatives at an additional meeting held in Tallahassee on June 11, 2013. The evaluation showed that widening the sidewalks would require modification or replacement of the bascule piers, the two remaining structural elements of the original bridge. Accordingly, SHPO requested evaluation of an additional rehabilitation concept that would provide a single, code-compliant sidewalk, rather than sidewalks on both sides of the bridge. Two concepts, one which required widening and one which involved only reconfiguration of the existing bridge geometry were evaluated. A summary of the evaluation, which indicated that both concepts would require replacement of the bascule leaf and substantial modification or replacement of the bascule piers, was provided to SHPO, FHWA and FDOT in a technical memorandum dated July 5, 2013.

A presentation was also made to the Tarpon Springs Historical Society at their meeting on January 16, 2014 to review the alternatives considered to date, including the additional rehabilitation concepts developed and evaluated after the Public Workshop.

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1.0 INTRODUCTION

Pinellas County, in coordination with the Florida Department of Transportation (FDOT) District Seven, the United States Coast Guard (USCG), and the Federal Highway Administration (FHWA), is conducting a Project Development and Environment (PD&E) Study (FDOT Financial Project ID No.: 424385-1-28-01) to evaluate alternatives to remove, rehabilitate or replace the existing Beckett Bridge (Bridge no. 154000) in Tarpon Springs, Pinellas County, Florida. The existing bridge was originally constructed in 1924 as a timber structure with a steel movable span. The fixed timber approach spans were replaced with concrete approach spans in 1956. Since 1956, major repairs were performed in 1979, 1996, and in 2011. Despite these repairs, major rehabilitation or replacement of the bridge is needed to keep the bridge open and operating, safely and efficiently.

This Cultural Resource Section 106 Effects Consultation Case Study Report was prepared for Pinellas County in coordination with the FDOT, District Seven, USCG, and the FHWA by Janus Research in conjunction with URS. In accordance with the provisions of the Section 106 of the *National Historic Preservation Act (NHPA) of 1966* (Public Law 89-665, as amended), as implemented by 36 CFR Part 800 (*Protection of Historic Properties*, revised January 2001), this Case Study Report documents potential effects of the proposed alternatives improvements to the National Register of Historic Places (National Register)–eligible resources within the project area of potential effects (APE).

A Cultural Resource Assessment Survey (CRAS) was prepared by Janus Research in February of 2013 to document cultural resources within the APE. One newly recorded historic resource, the Beckett Bridge (8PI12017), has been determined eligible for listing in the National Register in Pinellas County as an individual historic resource. The bridge is eligible under Criterion A for its contributions to the patterns of development and transportation in the State, and under Criterion C for its distinct engineering. It is one of a few known, pre-1965, highway single-leaf rolling-lift bascule bridges remaining in Florida. FHWA agreed that the Beckett Bridge was individually eligible for listing in the National Register on September 17, 2012, and the SHPO concurred with this finding on October 8, 2012 (Appendix A).

Based upon the Section 106 process, potential effects that the improvements may have on the identified National Register–eligible Beckett Bridge were evaluated. Subsequently, this report includes a summary description of the project and a summary description of the significant bridge. The Criteria of Adverse Effect, as defined in 36 CFR Part 800.5, were applied to the significant bridge and the subsequent analysis of effects is also discussed in this report.

A summary of the consultation with affected parties and general public involvement efforts during the study was presented in Chapter 10 of the Preliminary Engineering Report prepared for this project. A copy of Chapter 10 is included in Appendix C of this report. In addition, copies of agendas, power-point slides and meeting notes for the CRC meetings and relevant agency meetings are included. Selected information provided to the public at the Alternatives Workshop and Public) are also included in Appendix C. The Public Hearing Transcript, advertisements, Notification letters, Mailing lists, Sign-in-Sheets and actual comments received are included in the Comments and Coordination Report, published separately for this project.

2.0 PROJECT DESCRIPTION

Pinellas County, in coordination with the FDOT District Seven, and the FHWA is conducting a PD&E Study to evaluate alternatives to remove, rehabilitate or replace the existing Beckett Bridge (Bridge no. 154000) in Tarpon Springs, Pinellas County, Florida. The existing bridge was originally constructed in 1924 as a timber structure with a steel movable span. The fixed timber approach spans were replaced with concrete approach spans in 1956. The bridge has been determined to be eligible for listing in the National Register. Eligibility is based on the bridge's contribution to early development of the area (Criterion A) and because it is one of a few known, pre-1965, highway single-leaf rolling-lift bascule bridges remaining in Florida (Criterion C). Since 1956, major repairs were performed in 1979, 1998, and in 2011. Despite these repairs, major rehabilitation or replacement of the bridge is needed to keep the bridge open and operating, safely and efficiently.

The project limits extend along Riverside Drive from Chesapeake Drive across Whitcomb Bayou to Forest Avenue, a distance of approximately 0.3 mile (**Figure 2.1**). The existing two-lane bridge connects areas west and north of the Bayou to downtown Tarpon Springs. The bridge is also located on a popular route for access to Fred Howard Park, a Pinellas County park located approximately 3.1 miles west on the Gulf of Mexico. Riverside Drive/North Spring Boulevard is an extension of Tarpon Avenue, which is a designated evacuation route. Beckett Bridge provides access to major north/south arterials including Alternate US 19 and US 19 for coastal residents during hurricane evacuation. The bridge also provides access for emergency vehicles, including police, ambulance and fire. Some larger emergency vehicles (and most school buses) are prohibited from crossing the bridge because it is currently posted for legal loads limited to 2-ton Single Unit Trucks and 15-ton Combination Trucks. Alternate routes (that do not require crossing of the Beckett Bridge) are available for travel to and from the areas mentioned above, and for emergency response. However, these detour routes are longer, depending on the specific origin and destination.

Beckett Bridge is owned and operated by Pinellas County. A bridge tender is only present when required to open the drawbridge for a vessel; there are no full-time bridge tenders. USCG drawbridge opening regulation (33CFR117.341) states that "The draw of the Beckett Bridge, mile 0.5, at Tarpon Springs, Florida shall open on signal if at least two hours' notice is given."

Figure 2.1 – Project Location

Whitcomb Bayou connects to the Gulf of Mexico via the Anclote River to the north. Boats docked along Whitcomb, Spring, and Minetta Bayous, and along artificial canals which connect to the southeastern portion of the Whitcomb Bayou, must pass the Beckett Bridge to access the Gulf of Mexico.

2.1 PROJECT NEED

The bridge is considered functionally obsolete. This designation is based primarily on the substandard clear roadway width of only 20 feet and substandard roadway safety features. The existing typical section consists of one, 10-foot wide travel lane in each direction and 2-foot 2-inch-wide sidewalks separated by a curb on both sides of the bridge (**Figure 2.2**).

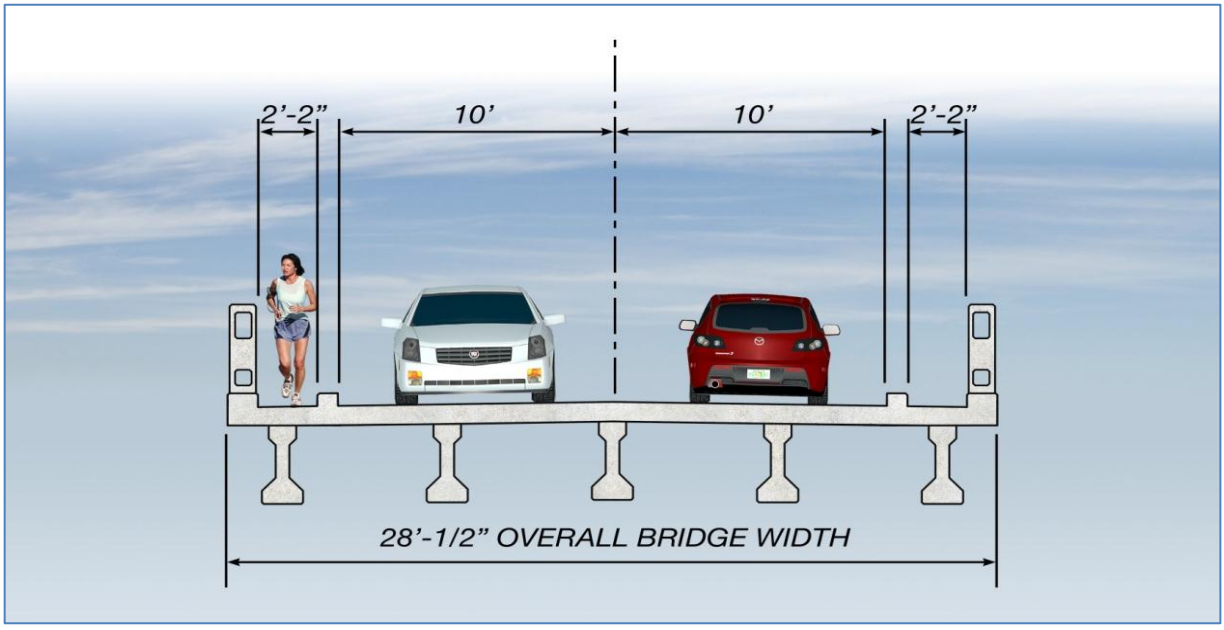

Figure 2.2 – Existing Bridge Typical Section

Minimum required lane and shoulder widths prescribed by the American Association of State Highway and Transportation Officials (AASHTO) are not met. The sidewalks on the bridge are narrow and do not meet current accessibility requirements established by the Americans with Disabilities Act (ADA). The bridge railings do not meet current standards for pedestrian safety or geometric and crash testing safety standards for vehicles. Approach guardrail and transitions and end treatments also do not meet current safety standards. (For additional information about current design standards that apply to a new bridge, Chapter 4, Design Criteria, of the Preliminary Engineering Report prepared for this study is included in Appendix D.)

According to recent (07/31/12) FDOT inspection reports, the existing bridge has an overall Structure Inventory and Appraisal Sufficiency Rating of 44.9 out of 100. (Sufficiency ratings are a method of evaluating highway bridges by calculating a numeric value between 0 and 100, indicative of bridge sufficiency to remain in service). Although the bridge is not considered Structurally Deficient, the bridge has a substandard load carrying capacity requiring weight restrictions. The bridge is currently posted for legal loads limited to 2-ton Single Unit Trucks and 15-ton Combination Trucks. This weight restriction prohibits large emergency vehicles and most full-sized school busses from traveling over the Beckett Bridge.

There are no official USCG navigational clearance guidelines for this waterway at this location. The existing vertical clearance at the fenders is six feet. The tip of the bascule leaf overhangs the fender with the leaf fully raised, limiting the clearance for a portion of the channel between the fenders. It is likely that unlimited vertical clearance was provided for the entire width channel when the bridge was originally constructed. The existing horizontal clearance between the fenders is 25 feet.

3.0 ALTERNATIVES CONSIDERED

The following alternatives were evaluated during the PD&E study:

- No-Build - Maintain Existing Bridge
- No-Build - Remove Existing Bridge (includes alternate routing of traffic)
- Rehabilitation of the Existing Bridge
- Replace with a new Movable Bridge
- Replace with a new Fixed Bridge

Based on potential social and environmental impacts and input from the community, the No-Build with Removal of the Existing Bridge and the Replacement of the Existing Bridge with a New Fixed Bridge alternatives were eliminated from further consideration. Based on a request from SHPO, three additional rehabilitation concepts that provided wider sidewalks were also evaluated and then eliminated from further consideration.

An Alternatives Evaluation Matrix which compares alternatives is provided in **Table 3.1**. This matrix was included in the Public Hearing Handout.

3.1 NO-BUILD ALTERNATIVE

The No-Build Alternative includes only routine maintenance to keep the bridge open to traffic until safety issues would require it to be closed. Evaluation of future improvements would occur at a later date. The No-Build with Removal of the Existing Bridge Alternative would result in routine maintenance in the near future with the intent to demolish the bridge when it is no longer safe for traffic and no plans to replace it with a new one. The concept plans for these alternatives are included in Appendix E.

3.2 REHABILITATION ALTERNATIVE

The existing bridge service life can be extended with extensive repairs and modifications, implementation of measures that slow the rate of concrete and structural steel deterioration, replacement of severely deteriorated structural elements, replacement of worn, deteriorated, and outdated electrical and mechanical systems and replacement of substandard bridge railings.

Table 3.1 – Evaluation Matrix

Impact Evaluation Criteria	No Build	No Build/Remove Bridge	Rehabilitation	New Low-Level Movable Bridge	New Mid-Level Fixed Bridge Option A	New Mid-Level Fixed Bridge Option B
Roadway/Bridge Issues						
Width of Vehicular Travel Lanes	10 feet	N/A	10 feet	11 feet	11 feet	11 feet
Shoulders	None	N/A	None	5.5 feet	4.5 feet	4.5 feet
Sidewalks	2'2"	N/A	2'2"	6 feet– Both Sides	6 feet – One Side Only	6 feet – One Side Only
Meets Current Design/Safety Standards	No	N/A	No	Yes	Yes	Yes
Structural Deficiencies Corrected	No	N/A	Yes	Yes	Yes	Yes
Vertical/Horizontal Channel Clearance	6 feet/25 feet	N/A	6 feet/25 feet	7.8 feet/25 feet	28 feet/25 feet	28 feet/25 feet
Bridge Openings	No Change	N/A	No Change	Minimal to No Change	None	None
Right of Way Issues						
Overall Bridge Width	28 feet	N/A	28 feet	47.2 feet	39.6 feet	39.6 feet
Right-of-Way Required	None	None	None	None	2 acres	2 acres
Relocations	None	None	None	None	5 Residences	3 Residences, 7 Mobile Homes
Other Impacts	None	None	None	None	Yacht Club Parking Driveways on South Side, East of Bridge	Yacht Club Parking Driveways on South Side, East of Bridge
Environmental Impacts						
Impacts to Historic Bridge	None	High	High	High	High	High
Wetlands	None	Low	Low	0.03 acre	0.02 acre	0.02 acre
Wildlife	None	Low	Low	Low	Low	Low
Parks/Recreation	None	None	None	None	None	None
Visual Impacts	None	None	Low	Low	High	High
Noise Impacts (Permanent)	None	None	None	Low	Low	Low
Costs						
Total Project Costs[1]	N/A	$0.9 M (Demolition)	$9.5 M	$15.8 M	$15.0 M (ROW Costs= $4.0 M)	$13.9 M (ROW Costs=$2.9 M)
Construction Impacts						
Detour Duration	N/A	Permanent	6 months	12 months	24 months	24 months
Total Construction Time	N/A	N/A	12 months	24 months	24 months	24 months
Anticipated Service Life (2010)	10 years or less	10 years or less	25-30 years	75 years	75 years	75 years

[1] Costs include demolition, roadway and bridge construction, mobilization, maintenance of traffic, aesthetic enhancements, engineering design, construction engineering inspection (CEI) and contingency.

However, even after major rehabilitation, due to its age and condition, it is anticipated that the bridge will require significant ongoing maintenance and periodic additional major repairs with corresponding disruptions to traffic. Rehabilitation to restore structural capacity, bring the bridge rails up to current safety standards, and mitigate future settlement would involve replacement of the bascule leaf (the steel draw span), the operating system (electrical and mechanical), and construction of crutch bents at each approach bent. These improvements, in conjunction with continued maintenance and periodic repair and/or rehabilitation, could extend the service life of the bridge 25 to 30 years (from 2013). It is not practical to extend the life of the bridge indefinitely.

Generally, if proposed improvements include substantial modification to the superstructure or substructure, the USCG is likely to require that the navigational clearances be improved to meet current USCG guide clearances for the affected waterway. However, there are no USCG guide clearances for the channel over which the Beckett Bridge is constructed. Accordingly, it is anticipated that the USCG will permit the proposed improvements described below for the Rehabilitation Alternative provided the proposed clearances are at least the same as the existing clearances. No changes in the navigational clearances are proposed. Replacement of the fender system would require a USCG permit.

The proposed Rehabilitation Alternative would include the following work and would extend the service life of the bridge a maximum of 25-30 years. This alternative will not change the geometry (typical section) of the existing bridge:

- Replace the sand-cement riprap at the abutments.
- Replace substandard approach guardrails.
- Remove all existing pile jackets and install new cathodic protection jackets on all concrete bent piles as well as steel bascule pier helper piles.
- Repair deteriorated concrete of the pile bent caps, bascule pier and rest pier, and provide cathodic protection in the form of zinc spray metalizing.
- Install crutch bents at Bents 2, 3, 4, 5, 8, 9, 10.
- Replace substandard concrete bridge railings with new traffic railings meeting crash testing requirements of NCHRP 350 (i.e. FDOT Standard Index 422 – 42" Vertical Face Traffic Railing).

- Hydro-blast the deteriorated concrete deck surface and install a new concrete overlay.
- Replace the expansion joints.
- Repair deteriorated concrete of the deck underside, beams and diaphragms, and provide cathodic protection in the form of zinc spray metalizing.
- Rehabilitate the control house including roof, windows and door or replace the control house.
- Replace the bascule leaf including counterweight, open steel and concrete filled grid deck.
- Replace the bascule span main drive machinery as well as the span locks and live load shoes.
- Replace the bascule span electrical system.
- Replace the bascule span traffic gates.
- Replace the bascule span barrier gate.
- Replace the fender system.

The following slides from the Public Hearing presentation illustrate some of the repairs proposed for the Rehabilitation Alternative (**Figures 3.2 through 3.8**).

Figure 3.2 – Repair Features of the Rehabilitation Alternative

Figure 3.3 – Original 1924 Elements of the Beckett Bridge

Figure 3.4 – Rehabilitation Repairs – Cathodic Protection Jackets and Bents

Figure 3.5– Rehabilitation Repairs – Replacement of Guard Rail, Bridge Rail, Traffic and Barrier Gates, and Control House

Figure 3.6 – Rehabilitation Repairs – Replacement of Electrical Systems, Machinery, and Bridge Fender

Figure 3.7 – Rehabilitation Repairs – Bridge Deck Concrete Overlay and Expansion Joint Replacement

Figure 3.8 – Rehabilitation Repairs – Concrete Repairs to Underside of Deck, Bent Caps, and Bascule Piers

3.3 Additional Rehabilitation Alternatives Evaluated After the Alternatives Public Meeting at the Request of the State Historic Preservation Officer

The Rehabilitation Alternative discussed in Section 3.2 (above) and the build alternatives discussed in Sections 3.3.1 and 3.3.2 (below) were presented at an Alternatives Public Meeting on January 23, 2013. Based on potential social and environmental impacts and input from the community, the No-Build with Removal of the Existing Bridge and the Replacement of the Existing Bridge with a New Fixed Bridge alternatives were eliminated from further consideration. The majority of written comments received from the public after the Alternatives Public Meeting supported the Rehabilitation and/or Replacement with a New Movable Bridge alternatives. Many members of the community also expressed support for improvements to the existing pedestrian facilities. The No-Build Alternative will remain viable through the remainder of the PD&E Study.

The Rehabilitation Alternative, as presented to the public at the January 23, 2013 Alternatives Public Meeting, and presented to the CRC on March 13, 2013 does not include widening the existing bridge. At the March 13, 2013 CRC meeting, representatives of the SHPO stated that the SHPO strongly supported rehabilitation of the existing bridge in lieu of constructing a replacement bridge. The CRC recognized that widening the sidewalks on the existing bridge, which are only 2'-2" wide, was warranted to provide a safe facility and acknowledged input from the community on this issue. Accordingly, the CRC and SHPO requested that the project team develop and evaluate a second rehabilitation alternative which included widening the existing sidewalks. Accordingly, the project engineers developed another alternative which will be referred to as the Rehabilitation with Widening Alternative in this document.

The results of the evaluation of the Rehabilitation with Widening Alternative were presented to SHPO, FHWA and FDOT staff on June 11, 2013 in Tallahassee. SHPO concurred that this alternative did not promote preservation of the existing bridge and requested evaluation of additional rehabilitation concepts that provided a single wider sidewalk on one side of the existing bridge. Accordingly, two concepts, one which required minimal widening and one which reconfigured the existing bridge geometry without widening, were developed and evaluated. The results of this evaluation were summarized in a memorandum from Jim Phillips, dated July 5, 2013 (also included in Appendix C) which was provided to SHPO, FDOT and FHWA for their review. The following sections summarize the evaluation of these additional concepts.

3.3.1 Evaluation of the Rehabilitation with Widening Alternative

Please refer to the power point presentation included in Appendix C that was presented at the June 11, 2013 meeting referenced above for additional graphics used to explain the evaluation of the Rehabilitation with Widening Alternative.

3.3.1.1 Development of a Minimum Acceptable Typical Section for Rehabilitation

The first step in development of the Rehabilitation with Widening Alternative was to establish the *minimum acceptable typical section*. Pinellas County, in coordination with FDOT District 7 staff, determined that widening the existing bridge would require compliance with the Florida Green Book to bring the bridge up to acceptable minimum current safety standards. Accordingly, a minimum acceptable typical section was developed based on these criteria. This typical section consists of two 11-foot travel lanes, one in each direction, 3-foot wide shoulders on both sides and 5.5 foot wide sidewalks on both sides of the bridge. This typical section is shown below in **Figure 3.9**. The total width of the bridge would be 42 feet, which is substantially more than the existing bridge which is approximately 28 feet wide.

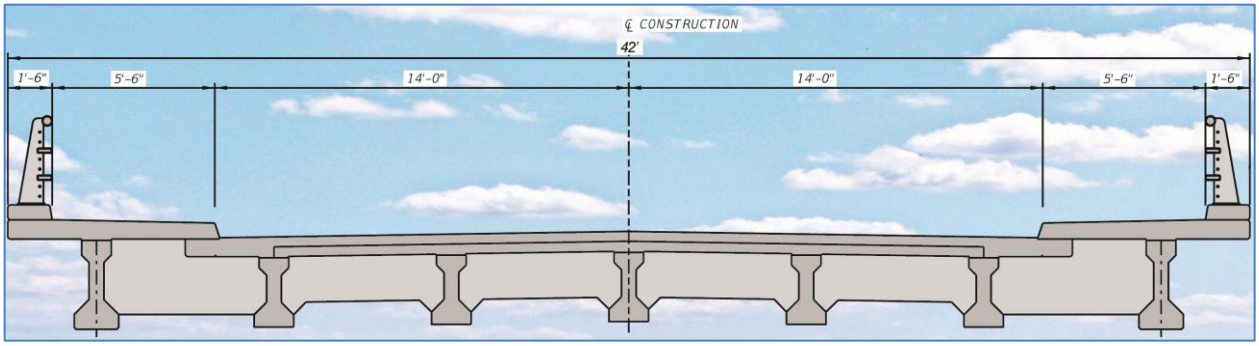

Figure 3.9 – Minimum Acceptable Typical Section

3.3.1.2 Description of Required Improvements to the Bascule Span and Approach Spans Required to Construct the Rehabilitation with Widening Alternative

Detailed engineering analysis indicates that the additional weight of the wider roadway (which provides the minimum acceptable typical section with shoulders, described above) and the proposed sidewalks cannot be accommodated by the existing bascule span or bascule pier.

Major modifications would be required to the existing bascule span, bascule pier and approach spans to accommodate the additional load and wider typical section. These include:

- The existing 28 foot wide steel bascule leaf will be replaced with a 42 foot wide bascule leaf.

- The bascule pier (the structure that supports the leaf) will be replaced to accommodate the wider bascule leaf and larger counterweight.
- The approach spans will be widened by adding two new prestressed concrete beams, one along each side of the bridge, to support the wider bridge deck.
- The existing bridge railing will be replaced with a light-weight steel, crash tested railing.

Other Structural Improvements include the following:

- The existing pile bents will be replaced.
- The bridge abutments will be replaced.
- The Control House will be relocated 7 feet to the north.
- Cathodic protection will be required in the remaining existing concrete elements of the bridge.

3.3.1.3 Conclusion

Rehabilitation of the existing bridge will require that the bridge meet current minimum safety standards. Widening of the bridge to provide shoulders and wider sidewalks will result in substantial alteration to the look of the bridge and will require substantial modifications to the existing bascule piers. The original historic bascule span will also be replaced. The final structure will no longer resemble the historic bridge.

3.3.2 Evaluation of Rehabilitation Alternative which Provides a Single Code Compliant Sidewalk without Widening, or with Minimal Widening of the Existing Bridge

At the June 11, 2013 meeting in Tallahassee, attended by URS, Pinellas County, FDOT, FHWA, and SHPO, representatives from SHPO requested consideration of an additional concept that would modify the existing bridge cross section to accommodate a single, code compliant, sidewalk, rather than two sidewalks has had been previously proposed. This section summarizes URS's technical evaluation of concepts with a sidewalk on one side only. The first concept evaluated the possibility of providing a single sidewalk without widening. The second concept evaluated providing a single sidewalk with minimal widening of the existing bridge. This evaluation was provided to SHPO, FHWA and FDOT (via email) in a memo dated July 5, 2013. This memo is included in Appendix C.

3.3.2.1 Reconfiguration of the Existing Bridge without Widening

The most desirable concept from a historic preservation perspective would be to avoid widening of the bridge and simply rework the arrangement of lanes and sidewalk(s) within the width of the existing bridge (28'-0½"). A modified section of the narrowest practical width would include minimum shoulders, a traffic railing (barrier) on the south side, two travel lanes, a sidewalk on a raised curb on the north side, and a traffic railing at the back of sidewalk. Assuming that design exceptions are granted for lane width (to allow two 10-foot wide lanes rather than the 11-foot minimum) and shoulder width (to allow a 2.5-foot shoulder adjacent to a traffic railing and a 1.5-foot shoulder adjacent to the curb rather than the 3-foot minimum required) the minimum clear roadway width for this configuration is 24 feet. With a minimum 5.5 foot wide sidewalk and two traffic railings (1.5' on the south side adjacent to traffic and 1'-1" at the back of sidewalk on the north side) the minimum bridge width that would accommodate this section is 32'-1", which is 4'-0½" wider that the existing bridge. Therefore, the existing bridge width is not sufficient to support two lanes and a single sidewalk without widening and consequently, this alternative is not possible as a rehabilitation option for the existing bridge. Therefore, a variation on this alternative was also evaluated as described below.

3.3.2.2 Reconfiguration of the Existing Bridge with Minimal Widening

The next most desirable concept from a historic preservation perspective would be one that limits bridge widening and associated impacts such that the existing bascule piers can be saved, even if the bascule cannot be saved. As discussed in the June 11, 2013 meeting, if the bridge is widened, the new bridge section must meet minimum standards. The minimum width of a bridge featuring a single sidewalk under this scenario would include 3-foot wide shoulders, a traffic railing on the south side (1.5'), two 11-foot wide travel lanes, a 5.5-foot wide sidewalk on a raised curb on the north side, and a traffic railing at the back of sidewalk (1'-1") on the north side. The clear roadway with of this section is 28 feet and the overall width is 36'-1". To accommodate this section the bridge would need to be widened by 8'-0½".

The technical issues associated with widening the bridge by 8'-0½"were examined. The evaluation included calculating live load distribution factors (as an indicator of the increase in live load on a main girder due to widening) and approximating dead and live load changes associated with the proposed modifications. The analysis also included determining

approximate span balance conditions and corresponding density of the counterweight needed to balance the bridge. The following summarizes the technical challenges disclosed in this investigation:

- As with any solution, the current live load (HL-93) is approximately 32% heavier than the original design load (HS-15 assumed based on year of construction).
- Live load distribution factor for the main girders of the bascule span would increase by 117%.
- The net of the above is an increased live load on the main girders that is 2.8 times the original design load.
- The movable span dead load (weight) would increase by approximately 49%.
- The density of the counterweight would need to be increased to approximately 360 per cubic foot (pcf) to properly balance the bascule span (note that the AASHTO recommended maximum density for counterweight concrete is 280 pcf).

Based on this evaluation it is our conclusion that widening the bridge to include a single sidewalk that meets current design criteria is not technically feasible unless the bascule pier is replaced as well. The increased dead load and live loads are beyond what the existing foundations can handle without extensive strengthening. The physical size of the existing bascule pier footing precludes increasing the size of the counterweight and the density required of the existing size counterweight is well in excess of that recommended by AASHTO.

3.3.2.3 Conclusion

The existing bridge width is not sufficient to support two lanes and a single sidewalk without widening. In comparison to the widening concepts originally developed with two sidewalks (presented in Section 3.3.1 of this report), a single sidewalk concept does not offer any significant improvements or reductions in impacts for the scope of bridge rehabilitation. Both require complete replacement of the bascule span and bascule piers which are the only remaining elements of the original 1924 bridge.

3.4 BUILD ALTERNATIVES

All bridge replacement alternatives considered will be constructed in approximately the same location (on the same alignment) as the existing bridge to minimize impacts. One movable bridge alternative and two fixed bridge alternatives have been developed. Concept plans and profile exhibits for all build alternatives are included in Appendix E. Alternate corridors for bridge location will not be evaluated due to the extent of development in the vicinity of the existing bridge. Capacity improvements will not be considered.

3.4.1 Low-Level Movable Bridge Alternative

The total length of the proposed movable span bridge is 360 feet. The bridge includes a 123-foot long east approach, 152-foot long west approach, and an 85-foot long bascule span. A continuous superstructure is proposed to reduce future deck joint maintenance and provide for a smoother ride. The substructure for the prestressed slab unit spans are bents or piers supported on prestressed concrete piles or drilled shafts and feature reinforced concrete caps.

A single-leaf bascule span is proposed at the navigation channel. The proposed configuration is similar to that of the existing bridge. The bascule leaf pivots open toward one side of the channel to provide unlimited vertical clearance over the channel with the leaf in the fully open position. The bascule leaf will consist of steel main girders, floor beams, stringers, and a solid surface deck. The counterweight will consist of concrete and steel ballast for balancing the leaf. The bascule pier will be supported by prestressed concrete piles or drilled shafts and feature steel and/or concrete structures to support the control house, pier deck and machinery as required for the selected design. The rest pier, which supports the tip of the bascule span when in the fully closed position, will be similar to the other bents or piers.

The new movable bridge will feature traffic control safety devices that are required for movable bridges. These elements include traffic signals and traffic warning gates on both approaches and a resistance barrier gate on the rest pier side of the bascule span. The bridge will also feature a fender system equipped with standard navigation lights and clearance signs. The concept plan for this alternative is located in Appendix E.

3.4.1.1 Proposed Movable Bridge Typical Section

The proposed bridge typical section for the Movable Bridge Alternative has a total out-to-out width of 47.2 feet as shown in **Figure 3.10**. The typical section includes two, 11-foot wide travel lanes with 5.5-foot shoulders that can function as undesignated bicycle lanes. Sidewalks, six feet wide, are proposed on both sides of the bridge.

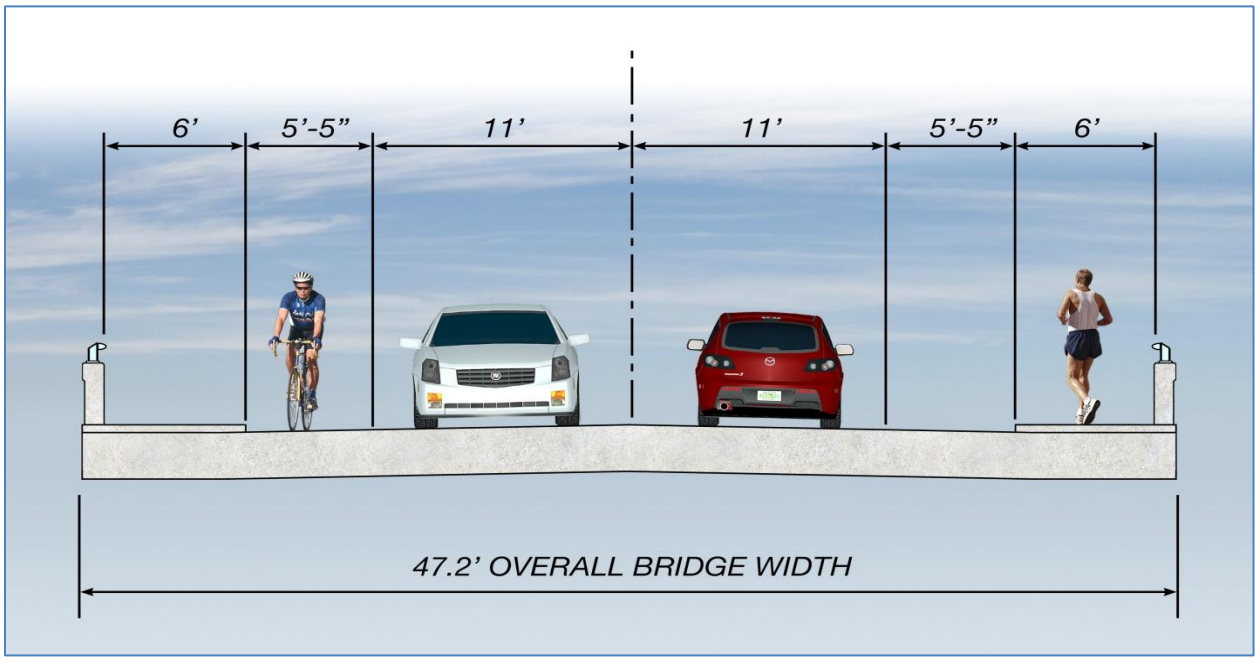

Figure 3.10 – Proposed Movable Bridge Typical Section

3.4.1.2 Proposed Roadway Sections

The proposed roadway section for the Movable Bridge Alternative west of the bridge consists of two 10-foot wide through lanes, one in each direction, and 5.5-foot wide outside shoulders that can function as undesignated bicycle lanes. Because of the limited right of way (ROW), a six-foot wide sidewalk is proposed only on the north side of the roadway. No sidewalks are proposed on the south side of the roadway, adjacent to the Bayshore Mobile Home Park (MHP). East of the bridge, the roadway section consists of two 11-foot wide through lanes, one in each direction, and 5.5-foot wide outside shoulders that can function as undesignated bicycle lanes. Six-foot wide sidewalks are proposed on both sides of the roadway. **Figures 3.11 and 3.12** illustrate the proposed roadway sections for the west and east sides of the bridge, respectively.

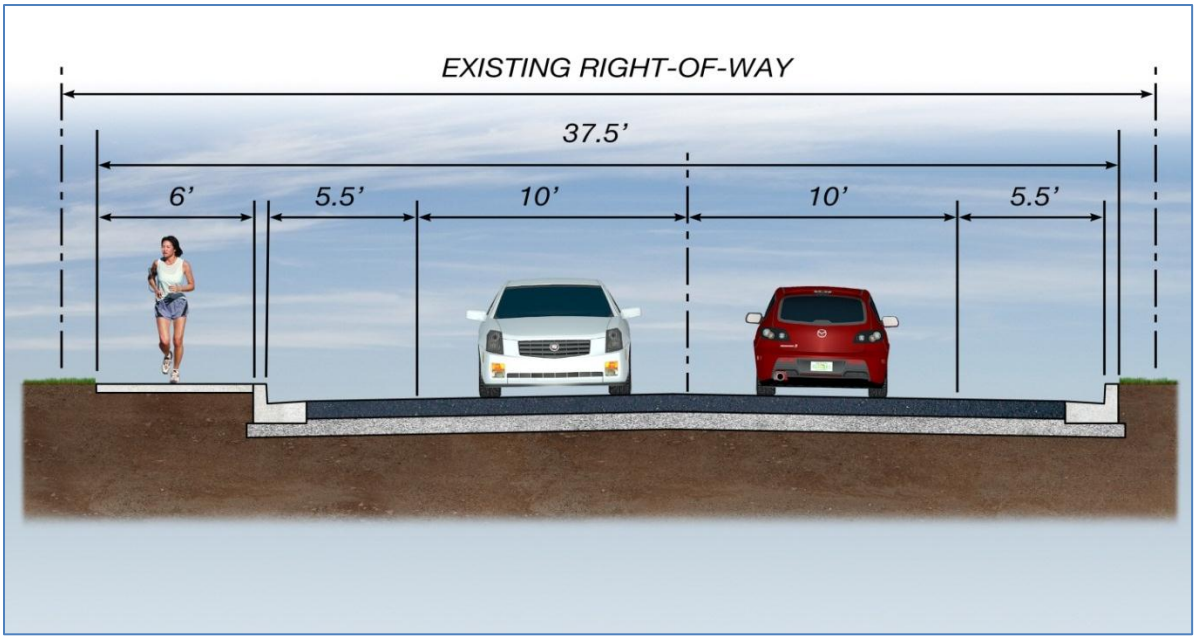

Figure 3.11 – Proposed Roadway Section West of Proposed Movable Bridge

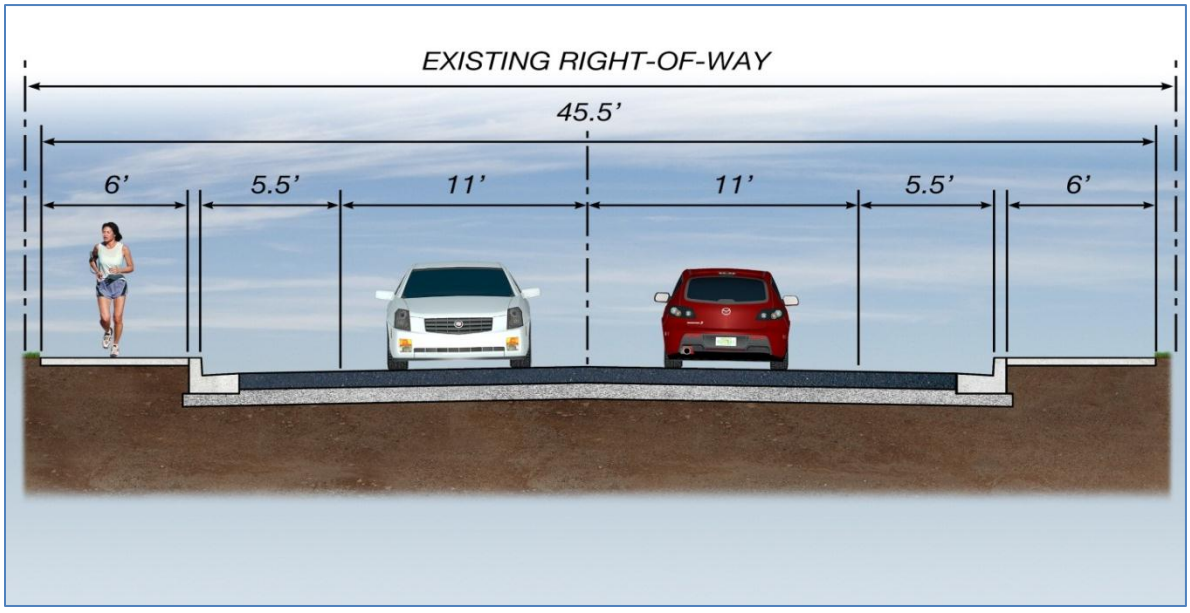

Figure 3.12 – Proposed Roadway Section East of Proposed Movable Bridge

3.4.2 Mid-Level Fixed Bridge Alternatives

Two options, A and B, were developed for the fixed bridge alternative. Both options provide approximately 28 feet of vertical clearance over Whitcomb Bayou and 25 feet of horizontal clearance between fenders for vessels traveling on the waterway. The proposed maximum grade is 5%. The total length of the proposed fixed span bridge is 720 feet.

Both fixed bridge options require acquisition of additional ROW. Although the proposed roadway typical sections were developed to tie into the existing roadway ROW once the bridge structure returns to existing grade, impacts from gravity walls required to contain the fill for the much steeper slope of these alternatives block access to existing properties. Construction of new access roads is required to maintain access to the Bayshore MHP on the west side and to Venetian Court east of the bridge. The two fixed bridge options differ in the properties that are impacted to maintain access. Option A impacts the residential parcels on the north side of Riverside Drive. Option B impacts the Bayshore MHP on the south side of the roadway. Both options impact a portion of the Tarpon Springs Yacht Club property to provide access to Venetian Court. More detail about the impacts of each option is provided later in this section.

The proposed bridge typical section for the fixed bridge alternative options has an out to out width of 39.6 feet. It consists of two, 11-foot travel lanes, 4.5-foot shoulders (which can be used as undesignated bicycle lanes) on both sides and a six-foot sidewalk on the north side of the bridge. To minimize impacts to property owners, a sidewalk is not proposed on the south side of the bridge (**Figure 3.13**). Shoulder widths for the fixed bridge alternative are limited to 4.5 feet to avoid additional ROW impacts.

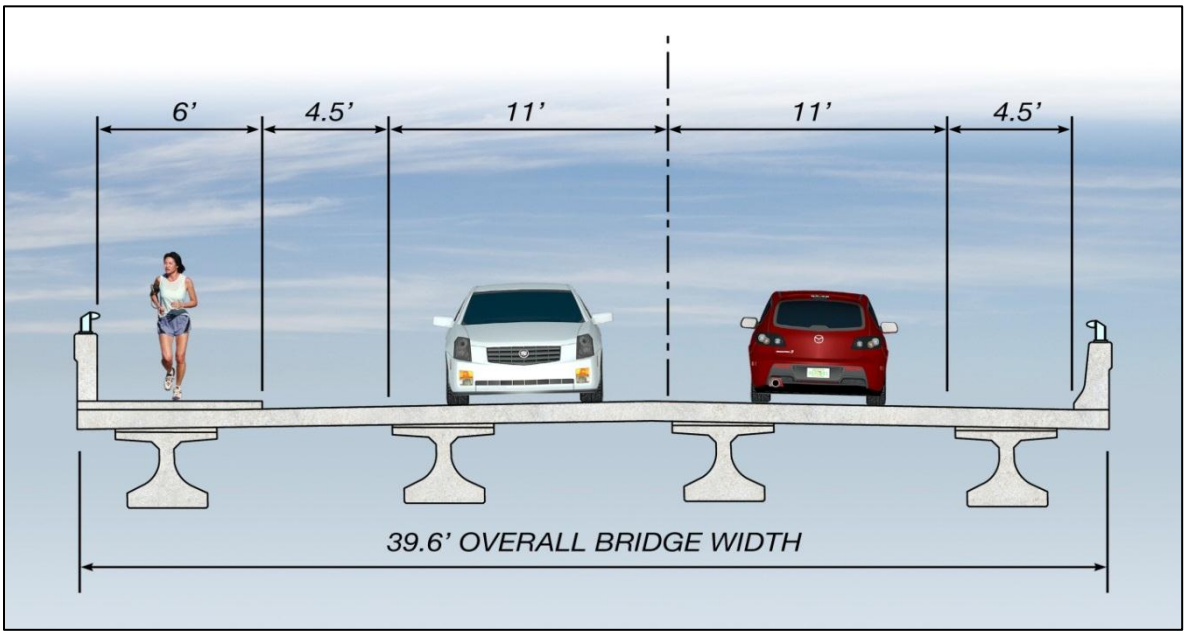

Figure 3.13 – Proposed Fixed Bridge Typical Section

The proposed roadway section west of the bridge consists of two, 10-foot wide travel lanes, a 5.5-foot wide shoulder, a six-foot wide sidewalk on the north side of the bridge, and a 5.5-foot wide shoulder on the south side of the bridge. Because of limited ROW, a sidewalk is not proposed on the south side of the bridge. Although the roadway section is 37 feet wide, the total width of the proposed section, including bridge railings in areas where the roadway is constructed on a raised embankment between retaining walls, is 39.6 feet. This section can be constructed in the approximately 40 feet of existing ROW.

East of the bridge, the proposed roadway section provides two, 11-foot wide travel lanes, a 5.5-foot wide shoulder and six-foot wide sidewalk on the north side of the bridge. A sidewalk is not proposed on the south side of the bridge to minimize impacts to adjacent property owners. Although the roadway section is 39 feet wide, the total width of the proposed section, including bridge railings in areas where the roadway is constructed on a raised embankment between retaining walls, is 41.6 feet. This section on embankment will require acquisition of some right-of-way on the north side of the road between Pampas Avenue and Forest Avenue, where the ROW narrows. **Figures 3.14 and 3.15** illustrate the proposed roadway sections for the fixed bridge alternatives, and the concept plans for these alternatives are found in Appendix E.

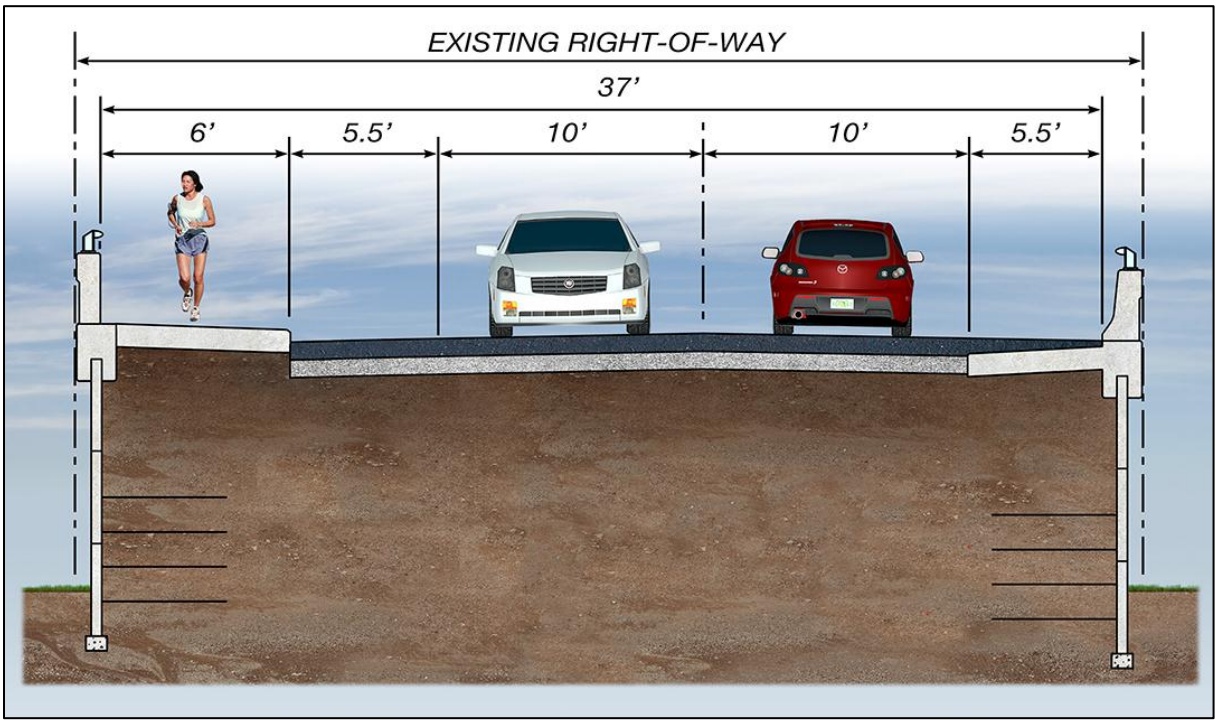

Figure 3.14 – Proposed Roadway Section West of Proposed Fixed Bridge

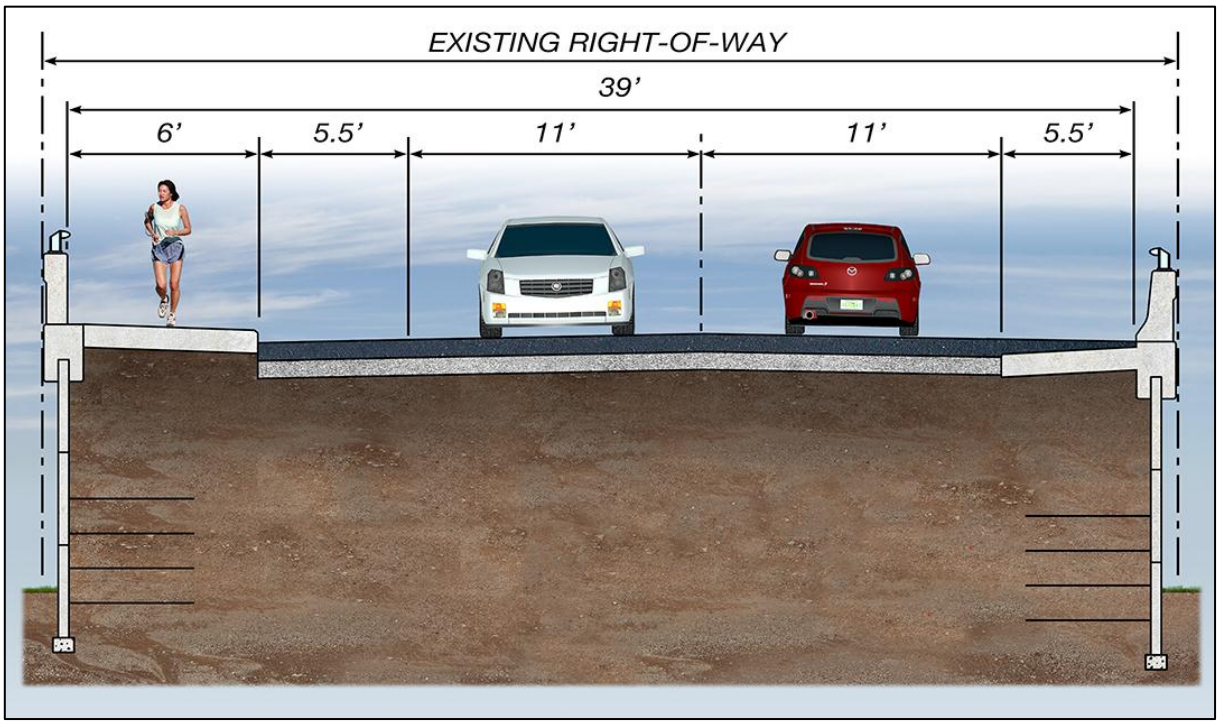

Figure 3.15 – Proposed Roadway Section East of Proposed Fixed Bridge

3.4.1.3 Fixed Bridge Alternative – Option A

The roadway profile at the intersection of Chesapeake Drive and Riverside Drive will be only about one to two feet above existing grade. A proprietary retaining wall system, such as Mechanically Stabilized Earth (MSE) walls, will be required on both sides of the roadway from Chesapeake Drive to station 134+42, where the bridge begins. The wall will begin just east of Chesapeake Drive on the north side of Riverside Drive and extend approximately 360 feet east. On the south side of the roadway, the wall will begin just west of Chesapeake Drive and extend approximately 420 feet east. The height of the wall will increase to approximately 19 feet above existing ground, just west of the entrance driveway to the Bayshore MHP.

East of the proposed bridge, an MSE wall will extend approximately 340 feet on the north side and about 400 feet on the south side. The wall will end west of Forest Avenue where the approach roadway will return to the existing grade.

The proposed retaining wall will block access to Riverside Drive for five single family residences west of the bridge, on the north side of the roadway, and access to the Bayshore MHP on the south side of the roadway. A new access road for the Bayshore MHP will be constructed north of Riverside Drive, where the five single family residences are located. The access road will connect with Chesapeake Drive and extend east through these five parcels immediately

adjacent to the north side of the roadway. The access road will then turn south and extend under the proposed bridge to connect to the Bayshore MHP driveway. The minimum vertical clearance at the Bayshore MHP driveway will be 14'6". The five single family residences impacted are expected to require relocation.

On the east side of the bridge, the proposed bridge will eliminate access to Riverside Drive from Venetian Court and Pampas Avenue. An extension of Venetian Court will be constructed from Pampas Avenue through the vacant lot adjacent to the Tarpon Springs Yacht Club (which is owned by the Yacht Club), extend under the proposed bridge, and tie into the existing Venetian Court. A minimum vertical clearance of 14'6" is provided at Venetian Court.

Direct access to Riverside Drive for the single family residence on the corner of Pampas Avenue and Riverside Drive will be eliminated by the proposed retaining wall. Access from this location and from Venetian Court to Riverside Drive can be accomplished by traveling north on Pampas Avenue, turning east on High Street and south on Forest Avenue. The single family residence driveway located at approximately Station 145+20 will be modified (raised) to provide direct access to Riverside Drive. Vehicular access to private docks located south of Riverside Drive in the area between Station 144+00 and 145+20 will be blocked by the proposed retaining wall.

3.4.1.4 Fixed Bridge Alternative – Option B

The proposed Fixed Bridge Alternative (Option B) will provide approximately 28 feet of vertical clearance at the fenders over Whitcomb Bayou and 25 feet of horizontal clearance between fenders for vessels traveling on the waterway. The proposed maximum grade is five percent. The total length of the proposed fixed span bridge is 720 feet.

The roadway is raised about one to two feet above existing grade at Chesapeake Drive. A retaining wall on both sides of the roadway will extend approximately 429 feet east, and vary in height from 1-22 feet. The height of the wall will be approximately 22 feet at the location of the existing entrance driveway to the Bayshore MHP. East of the proposed bridge, along the north side of the road, the retaining wall will extend from the end of the bridge approximately 340 feet, to west of Forest Avenue where the approach roadway will return to the existing grade. East of the proposed bridge, along the south side of the road, the retaining wall will extend from the end of the bridge approximately 400 feet. The wall will be approximately 21 feet high at the east end of the bridge.

The proposed retaining wall will block access to Riverside Drive for five single family residences west of the bridge, immediately north of the roadway, and access to the Bayshore MHP south of the roadway. An access road will be constructed through the impacted parcels to provide access to Chesapeake Drive for the two waterfront parcels in this area. It is anticipated that three relocations on the north side of the road will be required. The Riverside Drive driveway entrance to Bayshore MHP will be eliminated. Construction of a new entrance and exit for the MHP at Chesapeake Drive, south of Riverside Drive, will impact approximately seven mobile home lots on the west end of the MHP.

As in Alternative A above, the proposed fixed bridge will eliminate the access to Riverside Drive from Venetian Court and Pampas Avenue. An extension of Venetian Court will be constructed from Pampas Avenue through the vacant lot adjacent to the Tarpon Springs Yacht Club, and extend under the proposed bridge with a minimum vertical clearance of 14'6". Although the proposed connector for this option minimizes impacts to the Tarpon Springs Yacht Club property, the connector will extend through the vacant residential lot just east of the Venetian Court intersection south of Riverside Drive and connect to Venetian Court.

Direct access to Riverside Drive for the single family residence on the corner of Pampas Avenue and Riverside Drive will be eliminated by the proposed retaining wall. Access from this location and Venetian Court to Riverside Drive can be accomplished by traveling north on Pampas Avenue, turning east on High Street and south on Forest Avenue. The single family residence driveway at approximately station 145+20 will be modified (raised) to provide direct access to Riverside Drive. Vehicular access will be blocked to docks located south of Riverside Drive in this area.

3.4.2 Selection of a Recommended Alternative

As a result of a detailed comparative analysis of alternatives, which considered environmental, physical, cultural and socio-economic impacts, public input, local government coordination, state and federal agency coordination, engineering issues and project costs and the need for a safe efficient transportation facility, *Replacement of the Existing Bridge with a new Movable Bridge* was selected as the Recommended Alternative. This alternative has minimal environmental impacts (except for the removal of the historic Beckett Bridge), minimal impacts to the surrounding community and adequately meets the transportation need. No additional ROW is required for construction of a new movable bridge on approximately the same alignment as the existing bridge.

Under Section 106, mitigation for demolition of the existing bridge will be required by the SHPO and FHWA. The Recommended Alternative, and information about all alternatives considered during the study, was presented at a Public Hearing, held on February 26, 2014. The Recommended Alternative will require approval by FHWA. The No-Build Alternative will remain a viable alternative until after the Public Hearing.

4.0 HISTORICAL OVERVIEW

The following section includes the historical overview that was originally included in the CRAS report (Janus Research 2013). Included are the time periods from the historical overview that apply to the historic resources covered in this case study report.

4.1 FLORIDA BOOM PERIOD (1920–1930)

As World War I ended, prosperity began to spread once again throughout the U.S. Florida, in particular, experienced this upswing as construction, production, and population in the state quickly increased. People were drawn to the year-round warm weather; automobiles and improved roads made the state more accessible; and Florida did not have the state income or inheritance taxes of other states (Curl 1987:77).

Southeastern Florida, including cities such as Miami and Palm Beach, experienced the most activity, although the boom affected most communities in central and South Florida (Weaver 1996:3). Tarpon Springs also experienced the effects of the Florida Land Boom, although its growth did not accelerate at the intense rates experienced by some other Florida communities. New subdivisions were platted to make way for the expected new houses and businesses and previously underdeveloped areas saw more growth.

Tarpon Springs was once again heavily promoted as a tourist destination during the Boom years, and many of its visitors drove and stayed a shorter time than their counterparts at the end of the preceding century (Historic Property Associates 1988:11). Some of those involved in the sponge industry were already searching out other ways to make a living during these years, recognizing that the winter residents were not interested in sponges. The first Greek curio store opened during the 1920s (Stoughton 1975:67).

The Beckett Bridge within the current project APE was first constructed in 1924 and was originally called the Chilito Street Bridge (n.a. 1948). It was designed by C.E. Burleson, a Pinellas County Engineer, as a wooden bridge with a concrete pier and a steel drawbridge span. The Beckett Bridge is an example of a Scherzer rolling lift bascule bridge type. Credited to William Scherzer, the Scherzer rolling lift bascule rolls along a curved track as it opens and closes, pulling itself out of the way of water traffic as it does so (Koglin 2003:46). The function of the bridge was to connect east and west Tarpon Springs, carrying travelers over the Whitcomb

Bayou. Before construction of the bridge, travelers could only reach the eastern side of Tarpon Springs from the west by taking either Meres Boulevard or Whitcomb Boulevard, located south of Whitcomb Bayou. The Beckett Bridge created a significantly shorter travel route to both the eastern residential areas and the Sunset Hills Country Club.

The Sunset Hills Country Club was the single most prestigious development in Tarpon Springs at the time (Rajtar 1999). The Alex Lonnquist Company of Chicago is credited with construction of the fireproof Mission Style building. The Country Club building was completed in 1926 and opened on December 15, 1926. A 1926 brochure called it "a private club with a selected personnel" (Doris 1985). However, the club was forced to close before the Great Depression (Stoughton 1975). On December 15, 1928, the Sunset Hills Country Club would become the Sunset Hills Hotel, operated under Colonel C.G. Holden and C.L. Holden as a "winter resort hotel of distinguished character at popular rates" (n.a 1928). After the closing of the hotel, the building would become a year-round baseball school for a time. In 1933, the Pinellas Colony Club would open in the building. During the late 1940s, the building then became the Upham House Hotel, but soon after in 1953, the building was known as the Anclote Manor Hospital, a psychiatric facility. In 1985, American Medical International purchased the building and owned it for a short while. In 1990, American Health Properties purchased the building and the name was changed to The Manors. The building continued as a mental care facility for the Northpointe Behavioral Health System until May 1997 when the doors closed due to filing of bankruptcy (Shepherd 1997). Today, the building is no longer extant.

The Boom period began to decline in August 1925, when the Florida East Coast (FEC) Railway placed an embargo on freight shipments to South Florida. Ports and rail terminals were overflowing with unused building materials. In addition, northern newspapers published reports of fraudulent land deals in Florida. In 1926 and 1928, two hurricanes hit southeastern Florida, killing hundreds of people and destroying thousands of buildings. The collapse of the real estate market and the subsequent hurricane damage effectively ended the boom. The 1929 Mediterranean fruit fly infestation that devastated citrus groves throughout the state, only worsened the recession (Weaver 1996:4).

4.2 Depression and New Deal Period (1930–1940)

This era begins with the stock market crash of 1929. There were several causes for the economic depression in Florida, including the grossly inflated real estate market, several hurricanes, and the fruit fly infestation. During the Great Depression, Florida suffered significantly. Between 1929 and 1933, 148 state and national banks collapsed, more than half of the state's teachers were owed back pay, and a quarter of the residents were receiving public relief (Miller 1990).

Tarpon Springs was not immune to the effects of the Depression. Many of its residents were unable to pay their taxes, and the City itself was unable to pay its bills. However, the sponge industry continued to thrive during the first half of the 1930s (Historic Property Associates 1988:12). Due to the survival of its main industry, Tarpon Springs was perhaps less affected by the Depression than other less fortunate cities in Florida, and new construction continued through the mid-1930s (Shriver 1990). Unfortunately, Tarpon Springs experienced its own unique tragedy during these years; in 1938, its sponge beds were infected by blight and large numbers of sponges were killed (Historic Property Associates 1988:12).

Despite the Depression, tourism remained an integral part of the Florida economy during this period and this extended to Tarpon Springs. New highways made automobile travel to Florida easy and affordable (Miller 1990). A 1939 "WPA Guide to Florida" characterizes Tarpon Springs by its sponge operation and tours, Greek population and festivals, and little else. At least publicly, Greek culture and sponges dominated the little town's reputation during these years (Work Projects Administration 1939).

4.3 World War II and the Post War Period (1940–1950)

World War II brought unique challenges to Tarpon Springs. Sponge beds were not fully replenished, and the industry was further affected by "bombing range activity, the restriction to daylight hours, the leasing of boats to the government, plus the shortage of rubber for diving equipment" coupled with sponge divers leaving town to join the Navy (Stoughton 1975, 103-104). However, for the duration of the war, natural sponges could fetch phenomenal prices, and the industry carried on (Stoughton 1975:104).

The City of Tarpon Springs emerged from World War II in questionable financial shape (Stoughton 1975:111). The sponge industry saw prices decline as European markets reopened and increased worldwide supplies. In 1947, a major event produced a lasting transformation when red tide hit the area and essentially wiped out much of what remained of the sponge industry (History of Tarpon Springs n.d.). Some sponges remained close to the shore, but the water was so heavily polluted that deep sea sponging was no longer possible (Stoughton 1975: 102). This natural calamity was further exacerbated by the introduction of synthetic sponges into the market.

At this point, it was speculated by some that the City would "wither and die" with its sponge industry so severely weakened. A 1949 article in the St. Petersburg Times lamented the collapse of the sponge trade and stated that if the government did not increase import tariffs on natural sponges, Tarpon Springs surely could not survive. It painted a broad picture of Tarpon residents as poor, depressed, and unsure of where to turn now that their livelihood had largely disappeared (St. Petersburg Times 1949).

Nonetheless, Tarpon Springs survived, and in fact, thrived. While tourism had never ceased to play a big role in the City's commerce, in the late 1940s and early 1950s tourism edged out sponges to become the City's biggest source of income. In 1948 and 1953, two films featuring the sponge exchange assisted in this transformation by popularizing romantic ideas about the sponge industry and publicizing Tarpon Springs to potential travelers (Stoughton 1975:103).

In 1948, the bridge within the project APE was renamed "Beckett Bridge" after Edward H. Beckett, commending his 34 years of service as a County Commissioner at the time of his retirement (Freedman 1948). A native Floridian born in Clearwater in 1882, Beckett knew the district in which he was elected, having moved to Tarpon Springs in 1901 (Goldman 1996). After opening his own clothing store, Beckett expanded his business to various branches in the state. Then in 1929, in addition to managing his 53-acre orange grove and his 8-acre truck farm, he opened a real estate and insurance business in Tarpon Springs. Beckett served as city councilman in Tarpon Springs and as chief of police in Clearwater before being elected to the Pinellas County Board of County Commissioners in 1916. He was also active in supporting secession from Hillsborough County. For 32 years on the County Commission, 16 of those as chairman, he led the push for public parks and efficient water systems. Beckett often voted for new roads and for paving of those already constructed (Goldman 1996). Beckett died in 1962.

After World War II, residential construction resumed in the neighborhoods in and surrounding the Tarpon Springs area, building out previously undeveloped lots. **Figures 4.1 through 4.3** show the development of the area surrounding the Beckett Bridge. Streets were repaved, the seawall was replaced around Spring Bayou, City Hall was expanded and other City services were improved. The increased development and tourism, combined with the Beckett Bridge being the shortest travel route, lead to a high amount of traffic crossing the bridge on a daily basis.

4.4 1950 TO THE PRESENT

Many tourists were drawn to the state for its natural attractions and favorable climate, and post-War advances in transportation made it much easier to either permanently move or travel there. In 1950, the Panama City News-Herald reported that the state of Florida traded 4,500 acres of Gulf coast marshland to the federal government in exchange for Anclote Island. The island was ceded to the City of Tarpon Springs for development into a municipal beach, further enhancing Tarpon Springs as a tourist destination (History of Tarpon Springs n.d.).

In 1954, The Tarpon Springs Yacht Club building was constructed. The Club had formed in 1949 but did not obtain funding for a clubhouse until 1954. Until 1954, meetings of the Club were held in the Upham House Hotel, previously known as the Sunset Hills Country Club (Rajtar 1999). The 1954 clubhouse is located on the east side of Tarpon Springs and north of the Beckett Bridge, on North Spring Boulevard. The Club designed a nautical themed burgee after 1954 and an auxiliary called the "Windjammers" was formed to assist the Club. In 1961, the Tarpon Springs Yacht Club and thirteen other such clubs facilitated a program for boating enthusiasts wishing to cruise the Florida coasts. Incorporation articles were filed with the Florida Council of Yacht Clubs (FCYC). Circa 2002 the building was completely renovated. Services of the Yacht Club have continued to expand over the years and in 2010 the building sustained renovation once again to improve the facility. The Tarpon Springs Yacht Club was contacted via email on January 17, 2013 for information regarding the extent of renovation work in 2010. On January 18, 2013, Mr. Richard Pease, Commodore of the Tarpon Springs Yacht Club, contacted Janus Research via telephone and stated that he was not able to provide information regarding the 2010 renovation work.

Figure 4.1 – 1941 Aerial Photograph showing the Beckett Bridge and Surrounding Area

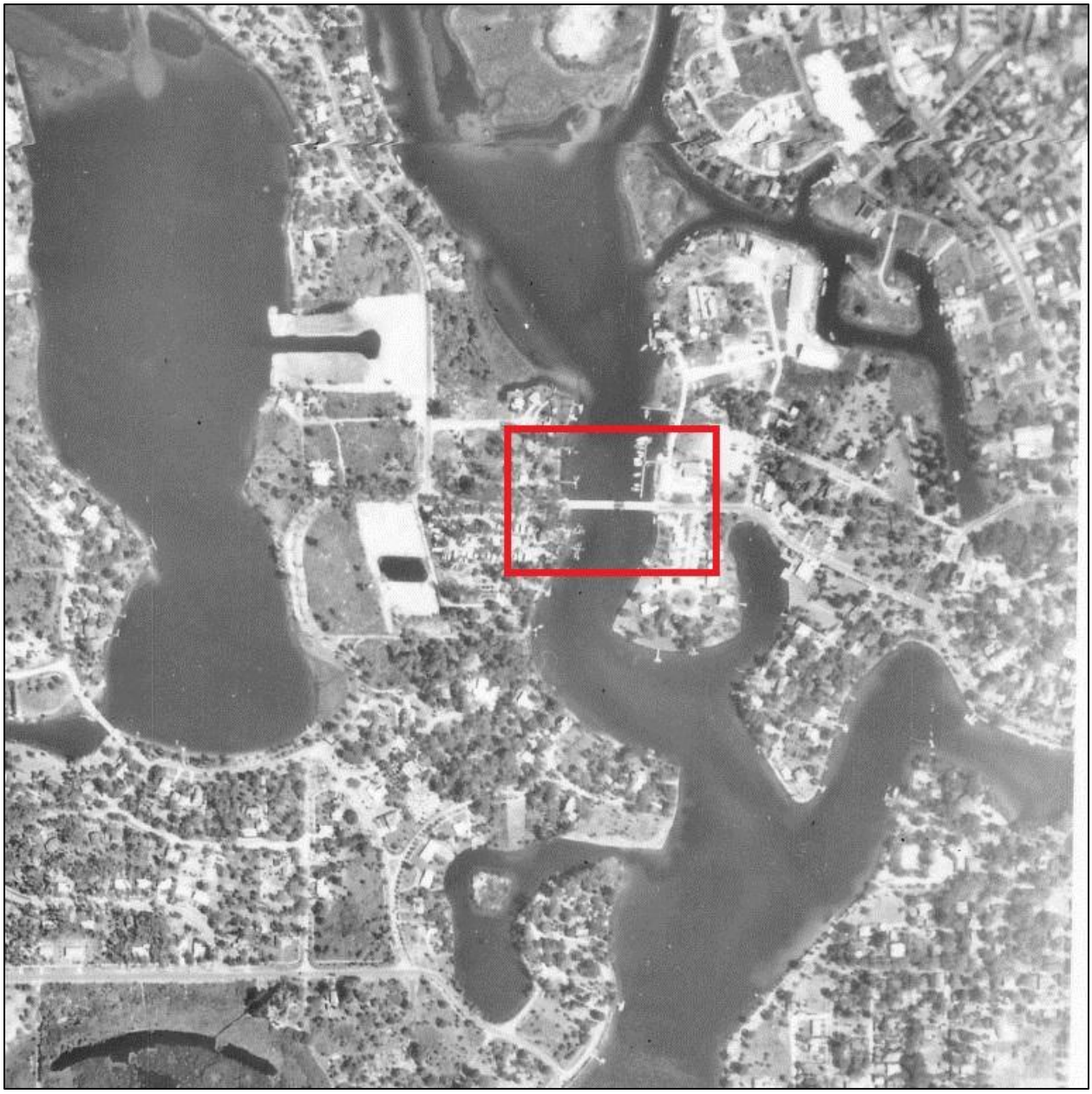

Figure 4.2 – 1957 Aerial Photograph showing the Beckett Bridge and Surrounding Area

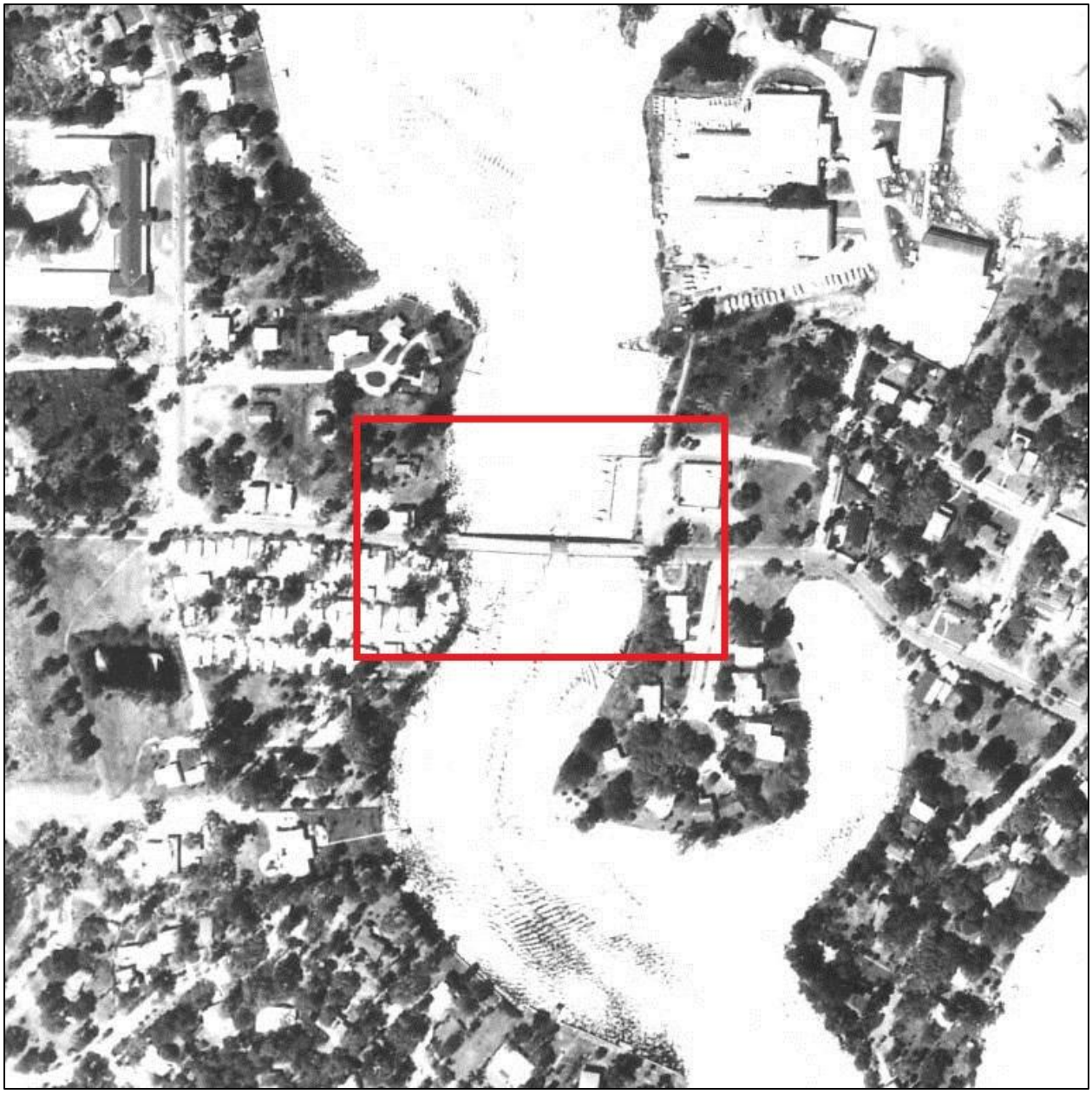

Figure 4.3 – 1974 Aerial Photograph showing the Beckett Bridge and Surrounding Area

In 1955, Pinellas County deemed the Beckett Bridge unsafe and decided repairs to the original wooden structure would be wasteful (Twitty 1955). On February 21, 1955, the County Commission approved an $81,292 contract to W.L. Cobb Construction Company of Tampa, Florida to reconstruct the bridge (n.a. 1956). The new structure retained the original steel draw and machinery for operation, with the remainder being built from steel-reinforced concrete.

New industries also trickled into Tarpon Springs after World War II, which employed both its retired spongers and new residents. A Victor Chemical Plant to process phosphate was built along the Anclote River, and the Florida Sportswear Company, Gallagher Cotton Mill, ABC Package Machine Corporation, and Bee Bee Togs followed (Stoughton 1975:113, 114). Some Tarpon Avenue stores were "modernized" with new storefronts and updated façades. However, during the 1970s, the downtown saw a loss of businesses as strip malls and box stores began to pull local businesses away from the downtown (Joynes 2009).

In 1975, a book by Gertrude Stoughton chronicling the history of Tarpon Springs was published that spurred interest in local history. The Old City Hall was transformed into a Cultural Center and City government was relocated to the historic Pine Street high school, as new businesses developed along Tarpon Avenue (Stoughton 1975:vii).

Within the project APE in 1979 and 1988, the Beckett Bridge once again was repaired. These repairs included installation of crutch bents due to settlement and lateral stability concerns.

Today, tourism in Tarpon Springs continues to be the main industry. While this industry is heavily based around the sponge docks and the Greek heritage of Tarpon Springs, as of 2000, only 11.8 percent of its residents reported Greek ancestry (U.S. Census Bureau 2000). The area's history is also apparent in the numerous historic structures, and the downtown is known for its historic atmosphere and quaint restaurants and shops. On December 6, 1990, the Tarpon Springs Historic District was listed in the National Register, further recognizing the City's significant history. The district is comprised of the commercial buildings along Tarpon Avenue and the residential area to the north, east, and west encompassing both winter cottages along Spring Boulevard and the historic homes surrounding them, illustrating the City's rich history.

Within the project APE, Beckett Bridge underwent repairs again in 1996. Twelve new steel pilings were added under the bridge and much of the then 76-year old steel bascule was so corroded it had to be replaced (Headrick 1997). Electrical components, a concrete counterbalance to raise the drawbridge, a new tender station, new sidewalks, and guardrails were also installed in 1996 (Headrick 1997). Repairs on the Beckett Bridge were performed in 2011 to correct issues with the operating machinery and the movable bridge span.

5.0 SIGNIFICANT HISTORIC RESOURCE

A CRAS was prepared by Janus Research in February of 2013 to document cultural resources within the APE. The CRAS was coordinated with FDOT, FHWA, and SHPO. This correspondence is included in Appendix A. As a result of the CRAS, one newly recorded historic resource, the Beckett Bridge (8PI12017), has been determined eligible for listing in the National Register as an individual historic resource (**Figures 5.1 and 5.2**). The remaining resources (8PI12043-8PI12055, 8PI12068, 8PI12069) were determined ineligible for listing in the National Register as individual historic resources or as part of a historic district.

Figure 5.1 – Beckett Bridge (8PI12017) in Pinellas County, Facing Southwest

Figure 5.2 – Beckett Bridge (8PI12017) in Pinellas County, Facing West

5.1 BECKETT BRIDGE (8PI12017)

Completed in 1924, the Beckett Bridge (Bridge No. 154000) is located in Township 27 South, Range 15 East, Sections 11-12 (USGS Tarpon Springs Quadrangle 1987), carrying Riverside Drive/North Spring Boulevard over Minetta and Whitcomb Bayous in Tarpon Springs, Florida. The existing roadway, Riverside Drive/North Spring Boulevard, is two lanes running in a roughly east/west direction. The Minetta and Whitcomb Bayous are directly to the south of Beckett Bridge; the Tarpon Bayou is to the north.

The Beckett Bridge has an overall bridge length of approximately 360 feet. The bridge width is approximately 28 feet, including the road and sidewalks. The bridge carries two lanes of traffic, one eastbound and one westbound. The existing typical section of the bridge consists of two vehicular lanes (10') with a 2'-2" sidewalk and concrete railing on both sides. There are nine approach spans and one main span. The main span of the bridge is a steel structure with a cast concrete deck. The bridge railings, which flank the bridge approaches and the bascule span, are simple concrete guardrail with concrete posts, which according to a historic photograph, appear to be part of the 1956 rehabilitation project. The date "1956" is inscribed in the concrete posts at each end of the bridge. The bridge's movable span is a steel, single-leaf,

under deck counterweight, Scherzer rolling lift bascule. The length of the bascule span is approximately 40 feet. The substructure of the bridge includes the supporting elements under the superstructure. Concrete piers support the prestressed concrete girder spans of this bridge, which replaced the original timber approach spans in 1956. A galvanized pipe staircase with handrails leads to the bridge substructure from the base of the bridge tender's station.

The bridge tender's station is situated on the north side of the bridge. This one-story station is a simple rectangular building without architectural ornamentation. The tender station was constructed with a galvanized steel frame and Plexiglas windows. It features a shed roof sheathed in 22-gage, wide rib galvanized steel. Adjacent to the tender's station is a metal plaque signifying the original date of construction and engineer. The station dates from the 1996 repairs to the bridge, and is utilitarian in construction and form. It is considered a non-contributing structure. A bridge tender is only present when required to open the drawbridge for a vessel, there are no full-time bridge tenders. USCG drawbridge opening regulations (33CFR117.341) states that "the draw of the Beckett Bridge, mile 0.5, at Tarpon Springs, Florida shall open on signal if at least two hours notice is given."

The Beckett Bridge was first constructed in 1924 and originally called the Chilito Street Bridge (n.a. 1948). It was designed by C.E. Burleson, a Pinellas County Engineer, as a wooden bridge with a concrete pier and a steel drawbridge span. The function of the bridge was to connect east and west Tarpon Springs, carrying travelers over the Whitcomb Bayou. Before construction of the bridge, travelers could only reach the eastern side of Tarpon Springs from the west by taking either Meres Boulevard or Whitcomb Boulevard, located south of Whitcomb Bayou. The Beckett Bridge created a significantly shorter travel route to both the eastern residential areas and the Sunset Hills Country Club. Construction on the club began in 1924 and was completed in 1926. However, the club was forced to close at the onset of the Great Depression (Stoughton 1975).

In 1948, the bridge was renamed "Beckett Bridge" after Edward H. Beckett, commending his 34 years of service as a County Commissioner at the time of his retirement (Freedman 1948). A native Floridian born in Clearwater in 1882, Beckett knew the district in which he was elected, having moved to Tarpon Springs in 1901 (Goldman 1996). After opening his own clothing store, Beckett expanded his business to various branches in the state. Then in 1929, in addition to

managing his 53-acre orange grove and his 8-acre truck farm, he opened a real estate and insurance business in Tarpon Springs. Beckett served as city councilman in Tarpon Springs and as chief of police in Clearwater before being elected to the Pinellas County Board of County Commissioners in 1916. He was also active in supporting secession from Hillsborough County. For 32 years on the County Commission, 16 of those as chairman, he led the push for public parks and efficient water systems. Beckett often voted for new roads and for paving of those already constructed (Goldman 1996). Beckett died in 1962.

After World War II, residential construction resumed in the neighborhoods in and surrounding the Tarpon Springs area, building out previously undeveloped lots. While tourism had never ceased to play a big role in the City's commerce, in the late 1940s and early 1950s, tourism edged out sponges to become the City's biggest source of income. The increased development and tourism, combined with the Beckett Bridge being the shortest travel route, lead to a high amount of traffic crossing the bridge on a daily basis. In 1955, Pinellas County deemed the Beckett Bridge unsafe and decided repairs to the original wooden structure would be wasteful (Twitty 1955). On February 21, 1955, the County Commission approved an $81,292 contract to W.L. Cobb Construction Company of Tampa, Florida to reconstruct the bridge (n.a. 1956). County Engineer Leighton Heston recommended that steel and concrete slabs replace the wooden substructure and that the top roadway be cemented (n.a. 1955). The new structure utilized the original steel bascule, draw, and machinery for operation, though the remainder of the bridge employed concrete, spanning 350 feet (n.a. 1956).

The Beckett Bridge underwent repairs again in 1996. Twelve new steel pilings were added under the bridge (Headrick 1996). Many parts of the original steel bascule were so corroded they had to be replaced in kind, including the metal that held the center of the bridge steady, and electrical components, a concrete counterbalance to raise the drawbridge, and new sidewalks and galvanized pipe guardrails adjacent to the tender's station were also installed on both sides of the steel bascule (Headrick 1997).

The tender station is a non-historic alteration because it was built after the historic period in 1996; it is considered a non-contributing resource.

The Beckett Bridge is an example of the Scherzer rolling lift bascule bridge type. Credited to William Scherzer, the Scherzer rolling lift bascule rolls along a curved track as it opens and closes, pulling itself out of the way of water traffic as it does so (Koglin 2003:46). The Scherzer rolling lift bridge rotates and moves away from the channel like a simple rocking chair on a track as the bridge deck is raised. Scherzer claimed that his rolling-lift type operated with less friction and, therefore, reduced power (FDOT 2004:90).

The Beckett Bridge is also an example of the single-leaf bascule bridge type. The bascule, or drawbridge, provides an open channel with unlimited clear headway, swift and dependable operation, and simple mechanisms with few moving parts. The defining characteristic of the bascule is the upward rotating leafs, which can be single or double. The Beckett Bridge consists of a single-leaf with rotates from a horizontal to a near vertical position. In a single-leaf, the entire span lifts above one end (FDOT 2004:90).

Bascule bridges are the most common type of moveable bridge, due to their ability to open quickly and requirement of little energy to operate. Single-leaf bascule bridges are less common than the double-leaf design, as they span smaller waterways. Though a common design that is still utilized today, historic rolling lift bascule bridges are rare resources in the state of Florida. Additionally, the Beckett Bridge is the only bascule bridge in Pinellas County that is not on the Intracoastal Waterway (Hornik 2012).

The Beckett Bridge retains its integrity as a Scherzer rolling lift single-leaf bascule bridge. The changes that took place and the materials used during the 1956 rehabilitation are now historic. The Beckett Bridge is a Scherzer rolling lift bridge and remains as one of seven pre-1965 single-leaf highway bascule bridges in Florida. The bridge has been determined eligible for listing in the National Register under Criterion A for its contributions to the patterns of development and transportation in the State, as well as Criterion C for its distinct engineering. The DOE for the Beckett Bridge was coordinated with FHWA and SHPO and is found in Appendix B. The coordination letters are included in Appendix A.

6.0 HISTORIC RESOURCES EFFECTS ANALYSIS

6.1 POTENTIAL EFFECTS TO HISTORIC RESOURCES

36 CFR Part 800 defines the Criteria of Adverse Effect as the following:

> An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that have been identified subsequent to the original evaluation of the property's eligibility for the National Register. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative.

The Beckett Bridge remains one of seven, pre-1965 single-leaf bascule roadway bridges in Florida. It has been determined to be eligible for listing in the National Register under Criterion A for its contributions to the patterns of development and transportation in the State, and under Criterion C for its distinct engineering. This section evaluates the alternatives that have been presented as part of the PD&E Study, and the effects these alternatives may have on the National Register–eligible Beckett Bridge. Detailed descriptions for each alternative are provided in Section 3 of this report. ***In summary, all rehabilitation and replacement alternatives will have an adverse effect on the Beckett Bridge. The No-Build Alternative will have a no adverse effect on the significant structure.***

The following alternatives were evaluated during the PD&E Study:

- No-Build - Maintain Existing Bridge
- No-Build - Remove Existing Bridge (includes alternate routing of traffic)
- Rehabilitation of the Existing Bridge (without widening)
- Rehabilitation with Widening of the Existing Bridge
- Rehabilitation which Provides a Single Code Compliant Sidewalk without Widening or with Minimal Widening of the Existing Bridge

- Replace with a new Movable Bridge
- Replace with a new Fixed Bridge

Based on potential social and environmental impacts and input from the community, the No-Build with Removal of the Existing Bridge and the Replacement of the Existing Bridge with a New Fixed Bridge Alternative were eliminated from further consideration. Three additional Rehabilitation Alternatives were also evaluated based on a request from the SHPO.

6.1.1 No-Build Alternative

The No-Build Alternative includes only routine maintenance to keep the bridge open to traffic until safety issues would require it to be closed. Evaluation of future improvements would occur at a later date. ***Because the significant Beckett Bridge would remain in place but would not be improved to extend its service life, this alternative will have no adverse effect on the National Register–eligible bridge.***

6.1.2 No-Build with Removal of the Existing Bridge Alternative

The No-Build with Removal of the Existing Bridge Alternative would result in routine maintenance in the near future with the intent to demolish the bridge when it is no longer safe for traffic, with no plans to replace it with a new one***. Because this alternative would result in the eventual demolition of the significant bridge, this alternative will have an adverse effect on the Beckett Bridge. Based on potential social and environmental impacts and input from the community, No-build with Removal of the Existing Bridge was removed from further consideration during the PD&E Study.***

6.1.3 Rehabilitation of the Existing Bridge Alternative

The Rehabilitation Alternative can extend the existing bridge service life with extensive repairs and modifications, implementation of measures that slow the rate of concrete and structural steel deterioration, replacement of severely deteriorated structural elements, replacement of worn, deteriorated, and outdated electrical and mechanical systems and replacement of substandard bridge railings. However, no changes in the existing geometry are proposed. The substandard narrow travel lanes and narrow sidewalks would remain. Accordingly, the Rehabilitation Alternative will not improve safety for pedestrians and bicyclists. Additionally, even after major rehabilitation, due to its age and condition, it is anticipated that the bridge will

require significant ongoing maintenance and periodic additional major repairs with corresponding disruptions to traffic. Rehabilitation to restore structural capacity, bring the bridge rails up to current safety standards, and mitigate future settlement would involve replacement of the bascule leaf (the steel draw span), the operating system (electrical and mechanical), and construction of crutch bents at each approach bent. These improvements, in conjunction with continued maintenance and periodic repair and/or rehabilitation, could extend the service life of the bridge 25 to 30 years (from 2013), but the bridge's life cannot be extended indefinitely. *Because this alternative will completely replace the draw span, bridge rails, and mechanical and electrical systems, this alternative will have an adverse effect on the Beckett Bridge.*

6.1.4 Additional Rehabilitation Alternatives

The Rehabilitation Alternative and build alternatives described above were presented at an Alternatives Public Meeting on January 23, 2013. The majority of written comments received from the public after the Alternatives Public Meeting supported the Rehabilitation and/or Replacement with a New Movable Bridge alternatives. Many members of the community also expressed support for improvements to the existing pedestrian facilities. A CRC was established as part of the ongoing PD&E Study. Two meetings have been held to date. The first meeting was held on October 29, 2012 and the second was held on March 13, 2013. At the second meeting, representatives of the SHPO stated that the SHPO strongly supported rehabilitation of the existing bridge in lieu of constructing a replacement bridge.

The Rehabilitation Alternative, as presented to the Public at the January 23, 2013 Alternatives Public Meeting, described above, and presented to the CRC does not include widening the existing bridge. The CRC recognized that widening the sidewalks on the existing bridge, which are only 2'2" wide, was warranted to provide a safe facility and acknowledged input from the community on this issue. Accordingly, the CRC requested that the project team develop and evaluate a second rehabilitation alternative which included widening the existing sidewalks. The project engineers developed another alternative which will be referred to as the Rehabilitation with Widening Alternative in this document.

The results of the evaluation of the Rehabilitation with Widening Alternative were presented to SHPO, FHWA and FDOT staff on June 11, 2013 in Tallahassee. SHPO concurred that this alternative did not promote preservation of the existing bridge and requested evaluation of additional rehabilitation concepts that provided a single wider sidewalk on one side of the existing bridge. Accordingly, two concepts, one which required minimal widening and one which reconfigured the existing bridge geometry without widening, were developed and evaluated. The results of this evaluation were summarized in a memorandum from Jim Phillips, dated July 5, 2013 (also included in Appendix C) which was provided to SHPO, FDOT and FHWA for their review. The following sections summarize the evaluation of these additional concepts.

In an email to Ann Venables of URS dated August 2, 2013, Alyssa McManus of SHPO staff noted that sufficient evidence had been presented and it was understood that a new bridge was preferable to the rehabilitation of the existing bridge (Appendix F).

6.1.4.1 Rehabilitation with Widening Alternative

As part of this alternative, a minimum acceptable typical section was developed. This typical section consists of two 11-foot travel lanes, one in each direction, 3-foot wide shoulders on both sides and 5.5 foot wide sidewalks on both sides of the bridge. The total width of the bridge would be 42 feet, which is substantially more than the existing bridge which is approximately 28 feet wide.

Detailed engineering analysis indicates that the additional weight of the wider roadway (which provides the minimum acceptable typical section with shoulders, described above) and the proposed sidewalks cannot be accommodated by the existing bascule span or bascule pier. Therefore, major modifications would be required to the existing bascule span, bascule pier and approach spans to accommodate the additional load and wider typical section. These include replacing the bascule leaf with a wider bascule leaf, replacing the bascule pier, widening approach spans, replacing existing bridge railing, replacing the pile bents and abutments, and moving the Control House.

This alternative will result in substantial alteration to the look of the bridge and will require replacement of the existing bascule piers. The original historic bascule span will also be replaced. The final structure will no longer resemble the historic bridge. ***Based on the major modifications that would take place as part of this alternative, especially the removal of the bascule span, this would result in an adverse effect to the Beckett Bridge.***

6.1.4.2 Rehabilitation Alternative which Provides a Single Code Compliant Sidewalk without Widening, or with Minimal Widening of the Existing Bridge

At the June 11, 2013 meeting in Tallahassee, attended by URS, Pinellas County, FDOT, FHWA, and SHPO, representatives from SHPO requested consideration of an additional concept that would modify the existing bridge cross section to accommodate a single, code compliant, sidewalk, rather than two sidewalks as had been previously proposed.

6.1.4.3 Reconfiguration of the Existing Bridge without Widening

The most desirable concept from a historic preservation perspective would be to avoid widening of the bridge and simply rework the arrangement of lanes and sidewalk(s) within the width of the existing bridge (28'-0½"). A modified section of the narrowest practical width would include minimum shoulders, a traffic railing (barrier) on the south side, two travel lanes, a sidewalk on a raised curb on the north side, and a traffic railing at the back of sidewalk. Assuming that design exceptions are granted for lane width (to allow two 10-foot wide lanes rather than the 11-foot minimum) and shoulder width (to allow a 2.5-foot shoulder adjacent to a traffic railing and a 1.5-foot shoulder adjacent to the curb rather than the 3-foot minimum required) the minimum clear roadway width for this configuration is 24 feet. With a minimum 5.5 foot wide sidewalk and two traffic railings (1.5' on the south side adjacent to traffic and 1'-1" at the back of sidewalk on the north side) the minimum bridge width that would accommodate this section is 32'-1", which is 4'-0½" wider that the existing bridge. Therefore, the existing bridge width is not sufficient to support two lanes and a single sidewalk without widening, and consequently, this alternative is not possible as a rehabilitation option for the existing bridge. Therefore, a variation on this alternative was also evaluated as described below.

6.1.4.4 Reconfiguration of the Existing Bridge with Minimal Widening

The next most desirable concept from a historic preservation perspective would be one that limits bridge widening and associated impacts such that the existing bascule piers can be saved, even if the bascule span cannot be saved. As discussed in the June 11, 2013 meeting, if the bridge is widened, the new bridge section must meet minimum standards. The minimum width of a bridge featuring a single sidewalk under this scenario would include 3-foot wide shoulders, a traffic railing on the south side (1.5'), two 11-foot wide travel lanes, a 5.5-foot wide sidewalk on a raised curb on the north side, and a traffic railing at the back of sidewalk (1'-1") on the north side. The clear roadway with of this section is 28 feet and the overall width is 36'-1". To accommodate this section the bridge would need to be widened by 8'-0½".

The technical issues associated with widening the bridge by 8'-0½"were examined. Based on the evaluation the widening of the bridge to include a single sidewalk that meets current design criteria is not technically feasible unless the bascule piers are replaced as well. The increased dead load and live loads are beyond what the existing foundations can handle without extensive strengthening. The physical size of the existing bascule pier footing precludes increasing the size of the counterweight and the density required of the existing size counterweight is well in excess of that recommended by AASHTO. This alternative would not offer any significant improvements or reductions in impacts to the physical bridge, in fact, it would require complete replacement of the bascule span and bascule piers. ***Based on the replacement of these character defining features of the bridge, this alternative will have an adverse effect on the Beckett Bridge.***

6.1.5 Build Alternatives

All bridge replacement alternatives considered will be constructed in approximately the same location (on the same alignment) as the existing bridge to minimize impacts. One movable bridge alternative and two fixed bridge alternatives have been developed.

6.1.5.1 New Low-Level Movable Bridge Alternative

The Low-Level Movable Bridge Alternative is the Recommended Alternative established as part of the PD&E Study and public input. This alternative has minimal environmental impacts (except for the removal of the historic Beckett Bridge), minimal impacts to the surrounding community and adequately meets the transportation need. No additional ROW is required for construction of a new movable bridge on approximately the same alignment as the existing bridge.

A single-leaf bascule span is proposed at the navigation channel. The proposed configuration is similar to that of the existing bridge. The bascule leaf pivots open toward one side of the channel to provide unlimited vertical clearance over the channel with the leaf in the fully open position. The bascule leaf will consist of steel main girders, floor beams, stringers, and a solid surface deck. The counterweight will consist of concrete and steel ballast for balancing the leaf. The bascule pier will be supported by prestressed concrete piles or drilled shafts and feature steel and/or concrete structures to support the control house, pier deck and machinery as required for the selected design. The rest pier, which supports the tip of the bascule span when

in the fully closed position, will be similar to the other bents or piers. ***The significant Beckett Bridge will be demolished as part of this alternative, so the Recommended Alternative with the New Low-Level Movable Bridge will result in an adverse effect to the National Register–eligible structure***.

6.1.5.2 New Mid-Level Fixed Bridge Alternative

Two options, A and B, were developed for the Fixed Bridge Alternative. These alternatives will require the demolition of the existing Beckett Bridge as well as additional ROW acquisition for adjacent properties. *Due to the demolition of the National Register–eligible bridge, both fixed bridge alternatives would result in an adverse effect to the Beckett Bridge.* As previously noted, based on potential social and environmental impacts and input from the community, the two Replacement of the Existing Bridge with a New Fixed Bridge alternatives were eliminated from further consideration during the PD&E Study.

6.1.5.3 Selection of a Recommended Alternative

As a result of public input, local government coordination, state and federal agency coordination, project costs, and a detailed comparative analysis of viable alternatives, Replacement of the Existing Bridge with a new Low-Level Movable Bridge was selected as the Recommended Alternative. By email, dated August 3, 2013, SHPO concurred that replacing the existing bridge with a new movable bridge is preferable to rehabilitation of the existing. In addition, FHWA concurred (by email from Nahir De Tizio, dated September 17, 2013 to Robin Rhinesmith, FDOT in Appendix F, that the County could move forward and present the Replacement of the Existing Bridge with a New Low-Level Movable Bridge Alternative at a Public Hearing as the Recommended Alternative.

7.0 CONCLUSIONS

This Cultural Resource Section 106 Effects Consultation Case Study Report for Beckett Bridge PD&E Study documents the potential effects of the alternative improvements to the National Register–eligible Beckett Bridge. The Criteria of Effect, as defined in 36 CFR Part 800.5, was applied to the bridge. Based on the project information available, the No-Build Alternative will have no adverse effect on the significant structure. The remaining alternatives, including the Recommended Alternative that involves the construction of a new low-level movable bridge, will have an adverse effect on the Beckett Bridge.

Public involvement was conducted as part of the Section 106 process, including the Alternatives Public Meeting on January 23, 2013, the Public Hearing on February 26, 2014, and several meetings specific to the Section 106 process. A CRC was established to include affected and interested parties: FDOT, FHWA, SHPO, USCG, City of Tarpon Springs, Pinellas County, Tarpon Springs Yacht Club, and the Tarpon Springs Historical Society. These CRC Meetings took place October 29, 2012 and March 13, 2013, and focused on the Section 106 process, proposed alternatives, and potential effects to the historic bridge. The input obtained from the meeting participants assisted in the further development of alternatives.

In addition, a third meeting was held in Tallahassee on June 11, 2013, with FHWA, FDOT, and SHPO to discuss one additional rehabilitation alternatives evaluated at the request of the CRC and SHPO. A presentation was also made to the Tarpon Springs Historical Society at their meeting on January 16, 2014 to review the alternatives considered to date, including the additional rehabilitation concepts developed and evaluated after the Public Workshop. A third CRC meeting was held on April 24, 2014, following confirmation of the Preferred Alternative as the Recommended Alternative by the Pinellas County Commission at the Commission's April 15, 2014 meeting. Minimization and mitigation options were discussed at this meeting. (Meeting minutes are included in Appendix C.)

Preparation of a Memorandum of Agreement (MOA) is underway. This MOA will include the Historic American Engineering Record (HAER) documentation of the bridge, which includes large-format photography, printing historic plans on archival paper, and preparing a written narrative. In addition, the following mitigation measures, recommended by the CRC will be included:

- The replacement bridge will be a single-leaf, rolling lift bridge of similar design. However, other aesthetic elements of the bridge will be determined by an aesthetics committee that will be assembled during the design phase. This committee will include representatives of the community and local governments, including the Tarpon Springs Historical Society.

- Elements of the old bridge will be salvaged and incorporated into the design of the new bridge. The specifics of the design will be determined by the aesthetics committee and community during the design phase.

- There is an existing historic marker or plaque on the current bridge which includes the date the bridge was erected and names of Pinellas County Commissioners at that time. This historic plaque will be incorporated into a new plaque or monument which provides some "bullet history" of the bridge. In lieu of an actual 'monument", the new plaque or marker could be attached to the control house so that it could be seen by pedestrians crossing the bridge.

- Information will be prepared which is suitable for the existing "NextExitHistory" and "Whatwashere" Apps. These are free Apps that use gps technology to identify the location of the historic site relative to the App user's location.

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APPENDIX A

FHWA and SHPO Concurrence Letters

Florida Department of Transportation

RICK SCOTT
GOVERNOR

11201 N. McKinley Drive, Tampa, FL 33612-6456
Phone (813) 975-6000 1-800-226-7220

ANANTH PRASAD, P.E.
SECRETARY

February 20, 2013

Ms. Linda Anderson
Federal Highway Administration
Florida Division Office
545 John Knox Road, Suite 200
Tallahassee, Florida 32303

RECEIVED
BUREAU OF
HISTORIC PRESERVATION
2013 MAR 15 P 2:58

RE: Beckett Bridge from Chesapeake Drive to Forest Avenue
PD&E Study Cultural Resource Assessment Survey
County Project ID: *PID 2161*
FDOT Financial Project ID: *424385-1-28-01*
Florida DHR Project File No: *2012-2526*
Pinellas County, Florida

Dear Ms. Anderson:

Pinellas County, in cooperation with the Florida Department of Transportation (FDOT) District Seven, is conducting a Project Development and Environment (PD&E) Study to evaluate removal, rehabilitation or replacement of the Beckett Bridge over Whitcomb Bayou in Tarpon Springs, Pinellas County, Florida. The limits of the study extend from Chesapeake Drive to Forest Avenue, a distance of about 0.31 miles. A Cultural Resource Assessment Survey (CRAS) has been prepared as part of the study to comply with federal and state regulations. In March 2012, FDOT, on behalf of Pinellas County, coordinated the proposed project's area of potential effect (APE) and CRAS methodology with your office and the State Historic Preservation Officer (SHPO) and in August 2012, FDOT, on behalf of Pinellas County, coordinated the National Register of Historic Places (NRHP) Determination of Eligibility (DOE) with your office and SHPO.

This transmittal includes two bound copies of the CRAS dated February 2013; 16 Florida Master Site File (FMSF) forms (8PI12017, 8PI12043-8PI12055, 8PI12068, and 8PI12069); the DOE; a CD containing the FMSF and DOE photos and forms; and a Survey Log Sheet.

No previously recorded or newly recorded archaeological sites were located within the archaeological APE.

The historic resources survey identified 16 newly recorded historic resources within the APE: Beckett Bridge (8PI12017) and 15 buildings (8PI12043-8PI12055, 8PI12068, and 8PI12069). Beckett Bridge (8PI12017) has been determined eligible for listing in the NRHP as an individual historic resource. The Federal Highway Administration (FHWA) concurred that Beckett Bridge is individually eligible for listing in the National Register on September 17, 2012. SHPO also concurred with these findings on October 8, 2012. The 15 structures are considered ineligible for listing in the NRHP.

A historic resources reconnaissance survey was also undertaken in order to address historic resources along a proposed detour route which would be required for removal of the existing bridge, or during construction for the Beckett Bridge. If any of the build or rehabilitation alternatives are selected, it is anticipated that the existing Beckett Bridge route will be closed for approximately six months to two years; therefore, a detour route will be necessary. One NRHP-listed historic district and six previously recorded historic resources that are considered individually eligible for inclusion in the NRHP were identified. The historic resources include the NRHP-listed Tarpon Springs Historic District (8PI1712), the Edward Newton Knapp House (8PI238), the William T. Fleming House (8PI1617), the George Clemson House (8PI1619), the George Clemson Auxiliary (8PI1620), the Marshall H. Alworth House (8PI1621), and the Bigelow Cottage (8PI1625). The six identified significant buildings are part of the 1990 NRHP-listed Tarpon Springs Historic District (8PI1712). As part of the reconnaissance survey, one newly identified resource appears to be individually eligible for the NRHP and is located at 115 North Park Avenue. As agreed in the methodology coordination, a FMSF form was not prepared for this resource.

This information is being provided in accordance with the provisions of the National Historic Preservation Act of 1966 (as amended), which are implemented by the procedures contained in 36 Code of Federal Regulations (CFR), Part 800, as well as the provisions contained in the revised Chapter 267, Florida Statutes (F.S.).

Provided you approve the recommendations and findings in the enclosed cultural resource document, please coordinate with SHPO that Beckett Bridge is NRHP-eligible but the other 15 historic structures are not. One copy of the document is for your files.

If you have any questions, or if I may be of assistance, please contact me at (813)975-6496 or robin.rhinesmith@dot.state.fl.us, or Rebecca Spain Schwarz at (813)281-8308 or rebecca.spain-schwarz@atkinsglobal.com.

Sincerely,

Robin Rhinesmith
Environmental Administrator

Enclosures

cc: Theresa Farmer, FDOT
Roy Jackson, FDOT CEMO
Tony Horrnik, Pinellas County
David Talhouk, Pinellas County
Ann Venables, EC Driver
Amy Streelman, Janus Research
Rebecca Spain Schwarz, Atkins

The FHWA finds the attached Cultural Resource Assessment Survey complete and sufficient and ✓ approves / ___ does not approve the above recommendations and findings.

The FHWA requests the SHPO's opinion on the sufficiency of the attached Cultural Resource Assessment Survey and the SHPO's opinion on the recommendations and findings contained in this cover letter and in the comment block below.

FHWA Comments:

PLEASE ADDRESS COMMENTS/OPINION TO LINDA ANDERSON, FHWA:
P: 850-553-2226. E: linda.anderson@dot.gov.
PLEASE CC: ROBIN RHINESMITH, FDOT D7; MAHIR DEMIRCIO, FHWA;
AND ROY JACKSON, FDOT CO MO.

/s/ Linda Anderson
David Hawk
Acting Division Administrator
Florida Division
Federal Highway Administration

3-13-13
Date

The Florida State Historic Preservation Officer finds the attached Cultural Resource Assessment Survey complete and sufficient and concurs with the recommendations and findings provided in this cover letter for SHPO/DHR Project File Number 2013-1021.

Robert F. Bendus, Director
Division of Historical Resources
and State Historic Preservation Officer

4/4/13
Date

RECEIVED
PLANNING UNIT
2012 OCT 15 AM 7:49

Florida Department of Transportation

RICK SCOTT
GOVERNOR

11201 N. McKinley Drive Tampa, FL 33612-6456 Phone (813) 975-6000 1-800-226-7220

ANANTH PRASAD, P.E.
SECRETARY

RECEIVED
BUREAU OF
HISTORIC PRESERVATION
2012 SEP 19 P 1:57

August 24, 2012

Ms. Linda Anderson
Federal Highway Administration
Florida Division Office
545 John Knox Road, Suite 200
Tallahassee, Florida 32303

RE: Beckett Bridge PD&E Study
Cultural Resource Assessment Survey
Determination of Eligibility for Beckett Bridge (Bridge No. 154000)
County Project ID: *PID 2161*
FDOT Financial Project ID: *424385-1-28-01*
Florida DHR Project File No: *2012-2526*
Pinellas County, Florida

Dear Ms. Anderson:

Pinellas County, in cooperation with the Florida Department of Transportation (FDOT) District Seven, is conducting a Project Development and Environment (PD&E) Study to evaluate removal, rehabilitation or replacement of the Beckett Bridge over Whitcomb Bayou in Tarpon Springs, Pinellas County, Florida. The limits of the study extend from Chesapeake Drive to Forest Avenue, a distance of about 0.31 miles. A Cultural Resources Assessment Survey (CRAS) is being prepared as part of the study to comply with federal and state regulations. In March 2012, FDOT, on behalf of Pinellas County, coordinated the proposed project's area of potential effect (APE) and CRAS methodology with your office and the State Historic Preservation Officer (SHPO).

The CRAS fieldwork has been started but since the Beckett Bridge (Bridge No. 154000) has not previously been recorded in the Florida Master Site File (FMSF) or evaluated for listing on the National Register of Historic Places (NRHP), FDOT is requesting input from your office and SHPO early on concerning its eligibility for listing on the NRHP. For this reason, two copies of the NRHP Determination of Eligibility (DOE) forms are enclosed for preliminary review. After FHWA and SHPO make their eligibility determinations for the bridge, the CRAS will be completed and submitted for review. The CRAS will include a FMSF form (8PI12017) that is currently being prepared for Beckett Bridge, as well as the final DOE with all photos for the FMSF office.

Beckett Bridge was originally constructed in 1924 and carries Riverside Drive/North Spring Boulevard over Whitcomb Bayou in Tarpon Springs, Florida, providing the shortest route connecting the eastern and western sides of Tarpon Springs. The bascule span is a steel single-leaf bottom counterweight Scherzer rolling lift from 1924. The fixed timber approach spans were replaced with concrete approach spans in 1956. Major repairs, which included construction of crutch bents, repair of machinery, replacement of the electrical system and construction of a new control house, were performed in 1996. Additional repairs to the bridge machinery were needed in 1997 and 2011. Despite the rehabilitations and replacement of building materials, the bridge retains its historic integrity and is a rare example of a historic Scherzer rolling lift, single-leaf bascule bridge remaining in the State. Beckett Bridge is therefore considered potentially eligible for listing in the NRHP under Criterion A in the areas of Community Planning and Development and Transportation and under Criterion C in the area of Engineering.

Provided you agree that the Beckett Bridge is NRHP eligible, please submit the enclosed DOE to the SHPO for review and concurrence. We are available to participate in a conference call with your office and SHPO to discuss the NRHP eligibility, if that would help. If you have any questions, or if I may be of further assistance, please contact me at (813) 975-6496 or via e-mail at robin.rhinesmith@dot.state.fl.us, or Rebecca Spain Schwarz at (813) 281-8308 or via e-mail at rebecca.spain-schwarz@atkinsglobal.com.

Sincerely,

Robin Rhinesmith
Environmental Administrator

Enclosures

cc: Theresa Farmer, FDOT
Roy Jackson, FDOT CEMO
Amy Streelman, Janus Research
Tony Horrnik, Pinellas County
David Talhouk, Pinellas County
Ann Venables, EC Driver
Rebecca Spain Schwarz, Atkins

The FHWA finds the attached Determination of Eligibility complete and sufficient and ✓ approves / ___ does not approve the above recommendations and findings.

The FHWA requests the SHPO's opinion on the sufficiency of the attached Determination of Eligibility and the SHPO's opinion on the recommendations and findings contained in this cover letter and in the comment block below.

FHWA Comments:

PLEASE ADDRESS COMMENTS/OPINION TO LINDA ANDERSON, FHWA.
P: 850-553-2226. E: linda.anderson@dot.gov.
PLEASE CC: ROBIN RHINESMITH, FDOT D7; NAHIR BENZIO, FHWA; AND
ROY JACKSON, FDOT CEMO.

/s/ Linda K. Knopp
Martin C. Knopp
Division Administrator
Florida Division
Federal Highway Administration

9-17-12
Date

The Florida State Historic Preservation Officer finds the attached Determination of Eligibility complete and sufficient and concurs with the recommendations and findings provided in this cover letter for SHPO/DHR Project File Number 2012-4295.

for Alisse M. Slade, Deputy SHPO
Robert F. Bendus
State Historic Preservation Officer
Director, Florida Division of Historical Resources

10.8.12
Date

APPENDIX B

Beckett Bridge National Register Determination of Eligibility Report

NPS Form 10-900
(Rev. 10-90

OMB No. 1024-0018

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES REGISTRATION FORM

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in How to Complete the National Register of Historic Places Registration Form (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property

historic name Beckett Bridge

other names/site number Beckett Bridge, 8PI12017, Bridge No. 154000

2. Location

street & number Riverside Drive/North Spring Boulevard ☐ not for publication

city or town Tarpon Springs ☐ vicinity

state FLORIDA code FL county Pinellas code PI zip code 34689

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended, I hereby certify that this ☐ nomination ☒ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property ☐ meets ☐ does not meet the National Register criteria. I recommend that this property be considered significant ☐ nationally ☐ statewide ☐ locally. (☐ See continuation sheet for additional comments.)

Signature of certifying official/Title Date

Florida State Historic Preservation Officer, Division of Historical Resources
State or Federal agency and bureau

In my opinion, the property ☐ meets ☐ does not meet the National Register criteria. (☐See continuation sheet for additional comments.)

Signature of certifying official/Title Date

State or Federal agency and bureau

4. National Park Service Certification

I hereby certify that the property is: Signature of the Keeper Date of Action

- ☐ entered in the National Register
  - ☐ See continuation sheet
- ☐ determined eligible for the National Register
  - ☐ See continuation sheet.
- ☐ determined not eligible for the National Register
  - ☐ See continuation sheet.
- ☐ removed from the National Register.
- ☐ other, (explain) _____

Beckett Bridge
Name of Property

Pinellas County, Florida
County and State

5. Classification

Ownership of Property
(Check as many boxes as apply)

- ☐ private
- ☒ public-local
- ☐ public-State
- ☐ public-Federal

Category of Property
(Check only one box)

- ☐ buildings
- ☐ district
- ☐ site
- ☒ structure
- ☐ object

Number of Resources within Property
(Do not include any previously listed resources in the count)

Contributing	Noncontributing	
0	1	buildings
0	0	sites
1	0	structures
0	0	objects
1	1	total

Name of related multiple property listings
(Enter "N/A" if property is not part of a multiple property listing.)

N/A

Number of contributing resources previously listed in the National Register

0

6. Function or Use

Historic Functions
(Enter categories from instructions)

TRANSPORTATION/road-related (vehicular)

Current Functions
(Enter categories from instructions)

TRANSPORTATION/road-related (vehicular)

7. Description

Architectural Classification
(Enter categories from instructions)

OTHER: Bascule Bridge

Materials
(Enter categories from instructions)

foundation N/A
walls N/A
roof N/A
other METAL: Steel; Concrete

Narrative Description
(Describe the historic and current condition of the property on one or more continuation sheets.)

8. Statement of Significance

Applicable National Register Criteria
(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

☒ **A** Property is associated with events that have made a significant contribution to the broad patterns of our history.

☐ **B** Property is associated with the lives of persons significant in our past.

☒ **C** Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.

☐ **D** Property has yielded, or is likely to yield information important in prehistory or history.

Criteria Considerations
(Mark "x" in all the boxes that apply.)

Property is:

☐ **A** owned by a religious institution or used for religious purposes.

☐ **B** removed from its original location.

☐ **C** a birthplace or grave.

☐ **D** a cemetery.

☐ **E** a reconstructed building, object, or structure.

☐ **F** a commemorative property.

☐ **G** less than 50 years of age or achieved significance within the past 50 years

Areas of Significance
(Enter categories from instructions)

Community Planning and Development
Transporatation
Engineering

Period of Significance

1924-1962

Significant Dates

1924; 1956

Significant Person

N/A

Cultural Affiliation

Architect/Builder

C.E. Burleson, Pinellas County Engineer
W.L. Cobb Construction Company

Narrative Statement of Significance
(Explain the significance of the property on one or more continuation sheets.)

9. Major Bibliographical References

Bibliography
Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

Previous documentation on file (NPS):

☒ preliminary determination of individual listing (36 CFR 36) has been requested
☐ previously listed in the National Register
☐ previously determined eligible by the National Register
☐ designated a National Historic Landmark
☐ recorded by Historic American Buildings Survey
_____

Primary location of additional data:

☐ State Historic Preservation Office
☐ Other State Agency
☐ Federal agency
☒ Local government
☐ University
☐ Other

Name of Repository
City of Tarpon Springs

☐ recorded by Historic American Engineering Record # _____

Beckett Bridge
Name of Property

Pinellas County, Florida
County and State

10. Geographical Data

Acreage of Property less than one

UTM References
(Place additional references on a continuation sheet.)

	Zone	Easting	Northing
1	17	326659	3115085
2			
3			
4			

☐ See continuation sheet

Verbal Boundary Description
(Describe the boundaries of the property on a continuation sheet.)

Boundary Justification
(Explain why the boundaries were selected on a continuation sheet.)

11. Form Prepared By

name/title Amy Streelman

organization Janus Research date April 23, 2012

street & number 1107 N. Ward Street telephone (813) 636-8200

city or town Tampa state FL zip code 33607

Additional Documentation

Submit the following items with the completed form:

Continuation Sheets

Maps

A **USGS map** (7.5 or 15 minute series) indicating the property's location.

A **Sketch map** for historic districts and properties having large acreage or numerous resources.

Photographs

Representative **black and white photographs** of the property.

Additional items
(check with the SHPO or FPO for any additional items)

Property Owner

(Complete this item at the request of SHPO or FPO.)

name Pinellas County

street & number 315 Court Street telephone (727) 464-3000

city or town Clearwater state Florida zip code 33756

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and amend listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C. 470 *et seq.*).

SECTION 7: DESCRIPTION

SUMMARY

The Beckett Bridge (Bridge No. 154000) was originally constructed in 1924 and carries Riverside Drive/North Spring Boulevard over Whitcomb Bayou in Tarpon Springs, Florida. The Beckett Bridge provides the shortest route connecting the eastern and western sides of Tarpon Springs. The bascule span is a steel single-leaf bottom counterweight Scherzer rolling lift bascule from 1924. Due to extensive usage and deterioration, the Beckett Bridge underwent major repairs in 1956 and 1996. The fixed timber approach spans were replaced with concrete approach spans in 1956. Major repairs, which included construction of crutch bents, repair of machinery, replacement of the electrical system and construction of a new control house, were performed in 1996. Additional repairs to the bridge machinery were needed in 1997 and 2011. Despite multiple rehabilitations and the replacement of building materials, the bridge, including the historic metal lift portion, retains its historic integrity. It is a rare example of a historic Scherzer rolling lift, single-leaf bascule bridge remaining in the State.

PHYSICAL DESCRIPTION

Completed in 1924, the Beckett Bridge (Bridge No. 154000) is located in Township 27 South, Range 15 East, Sections 11-12 (USGS Tarpon Springs Quadrangle 1987), carrying Riverside Drive/North Spring Boulevard over Whitcomb Bayou in Tarpon Springs, Florida. Appendix A shows the 1923 construction plans for the Beckett Bridge. The existing roadway, Riverside Drive/North Spring Boulevard, is two lanes running in a roughly east/west direction (Figure 1). The Minetta and Whitcomb Bayous are directly to the south of Beckett Bridge; the Tarpon Bayou is to the north.

The Beckett Bridge has an overall bridge length of approximately 360 feet. The bridge width is approximately 28 feet, including the road and sidewalks (Figures 2-3). The bridge carries two lanes of traffic, one eastbound and one westbound. The existing typical section of the bridge consists of two vehicular lanes measuring 20.21 feet and a sidewalk measuring approximately 3 feet, with concrete railing on both sides. There are nine approach spans and one main span. The main span of the bridge is a steel structure with a cast concrete deck. The bridge railings, which flank the bridge approaches and the bascule span, are simple concrete guardrail with concrete posts, which according to a historic photograph appear to be part of the 1956 rehabilitation project (Figures 4-5). The date “1956” is inscribed in the concrete posts at each end of the bridge (Figure 6). The bridge is a steel, single-leaf, bottom counterweight, Scherzer rolling lift bascule. The length of the bascule span is approximately 40 feet (Figures 7-8).The substructure of the bridge includes the supporting elements under the superstructure. Concrete piers support the prestressed concrete girder spans of

this bridge, which replaced the original timber approach spans in 1956 (Figure 9). A galvanized pipe staircase with handrails leads to the bridge substructure from the base of the bridge tender's station. The bridge tender's station is situated on the north side of the bridge. This one-story station is a simple rectangular building without architectural ornamentation (Figure 10). The tender station was constructed with a galvanized steel frame and Plexiglas windows. It features a shed roof sheathed in 22-gage, wide rib galvanized steel. Adjacent to the tender's station is a metal plaque signifying the original date of construction and engineer for the bridge (Figure 11). The station dates from the 1996 repairs to the bridge, and is utilitarian in construction and form. It is considered a non-contributing structure. A bridge tender is only present when required to open the drawbridge for a vessel, there are no full-time bridge tenders. US Coast Guard drawbridge opening regulations (33CFR117.341) states that "the draw of the Beckett Bridge, mile 0.5, at Tarpon Springs, Florida shall open on signal if at least two hours notice is given."

HISTORIC ALTERATIONS

The Beckett Bridge was almost completely reconstructed in 1956 after Pinellas County decided repairs to the original wooden structure would be wasteful (Twitty 1955). County Engineer Leighton Heston recommended that steel and concrete slabs replace the wooden substructure and that the top roadway be cemented (n.a. 1955). The new structure utilized the original steel bascule, draw, and machinery for operation, though the remainder of the bridge employed concrete, spanning 350 feet (n.a. 1956). The 1956 plans have not been located.

NON-HISTORIC ALTERATIONS

Since the major alterations to the bridge in 1956, the Beckett Bridge underwent repairs again in 1996. The rehabilitation repairs included the addition of steel crutch bents to stabilize settlement, repair of the steel draw span as well as the concrete approach spans, refurbishment of the machinery, replacement of the electrical system, and construction of the tender station. The tender station is a non-historic alteration because it was built after the historic period in 1996; it is considered a non-contributing resource (Figure 10). The traffic and barrier gates were also added during the 1996 repairs. Plans for the 1996 repairs can be found in Appendix B of this document.

In 1997, the main machinery drive shafts failed during testing of the draw span subsequent to the 1996 repairs. Repairs were completed in December 1997. Recent repairs in 2011 were performed to correct issues with the operating machinery and the movable bridge span.

SECTION 8: SIGNIFICANCE

SUMMARY STATEMENT OF SIGNIFICANCE

The Beckett Bridge is considered potentially eligible for listing in the National Register under Criterion A in the areas of Community Planning and Development and Transportation. The bridge is also eligible under Criterion C in the area of Engineering. In the area of Community Planning and Development, the bridge is linked to the evolution of the City of Tarpon Springs, as its initial construction was necessitated by the City's expansion westward toward the Gulf of Mexico from the Florida Land Boom period onward. Its significance in the area of Transportation is supported by its initial construction in 1924 to serve as a route from east to west Tarpon Springs. Its rehabilitation is evidence of the growth in population and the increasing number of tourists traveling in the area, which required an automobile bridge to accommodate a greater number of vehicles. In the area of Engineering, the Beckett Bridge is a Scherzer rolling lift bridge and, according to available research, remains as one of seven pre-1965 single-leaf bascule bridges remaining in Florida.

STATEMENT OF SIGNIFICANCE (Criteria A and C)

Community Planning and Development/Transportation

As World War I ended, prosperity began to spread throughout the United States. Florida, in particular, experienced this upswing as construction, production, and population in the state quickly increased. People were drawn to the year-round warm weather; automobiles, and improved roads made the state more accessible. Florida also did not have the state income or inheritance taxes of other states (Curl 1987, 77).

Southeastern Florida, including cities such as Miami and Palm Beach, experienced the most activity, although the Florida Land Boom affected most communities in central and South Florida (Weaver 1996, 3). Tarpon Springs also experienced the effects of the Florida Land Boom, although its growth did not accelerate at the intense rates experienced by some other Florida communities. However, Tarpon Springs offered an attractive setting, nearby railroads, and access to modern amenities, such as gift shops, restaurants, and new streetlights and sidewalks. In the 1920s, dozens of new subdivisions were platted tripling the original area of the town, and many important buildings were constructed including the Tarpon Arcade Hotel, a new high school, and the city's first hospital (Adams 1988). A local real estate exchange called Tarpon Springs Enterprises was created to help stimulate development. The most important development was the Sunset Hills Country Club, located on the rolling hills along the Anclote River and the Gulf of Mexico northwest of the bridge (Figure 16).

The Beckett Bridge was first constructed in 1924 and originally called the Chilito Street Bridge (n.a. 1948). Original site plans for the bridge exist from 1923 and are included in Appendix A. It was designed by C.E. Burleson, a Pinellas County Engineer, as a wooden bridge with a concrete pier and a steel drawbridge span. The function of the bridge was to connect east and west Tarpon Springs, carrying travelers over the Whitcomb Bayou. Before construction of the bridge, travelers could only reach the eastern side of Tarpon Springs from the west by taking either Meres Boulevard or Whitcomb Boulevard, located south of Whitcomb Bayou (Figure 12). The Beckett Bridge created a significantly shorter travel route to both the eastern residential areas and the Sunset Hills Country Club.

The Sunset Hills Country Club was the single most prestigious development in Tarpon Springs at the time (Rajtar 1999). The Alex Lonnquist Company of Chicago is credited with construction of the fireproof Mission style building. The Country Club building was completed in 1926 and opened on December 15, 1926. A 1926 brochure called it “a private club with a selected personnel” (Doris 1985). However, the club was forced to close before the Great Depression (Stoughton 1975). On December 15, 1928, the Sunset Hills Country Club would become the Sunset Hills Hotel, operated under Colonel C.G. Holden and C.L. Holden as a “winter resort hotel of distinguished character at popular rates” (n.a 1928). After the closing of the hotel, the building would become a year-round baseball school for a time. In 1933, the Pinella Colony Club would open in the building. During the late 1940s, the building then became the Upham House Hotel, but soon after in 1953, the building was known as the Anclote Manor Hospital, a psychiatric facility. In 1985, American Medical International purchased the building and owned it for a short while. In 1990, American Health Properties purchased the building and the name was changed to The Manors. The building continued as mental care facility for the Northpointe Behavioral Health System until May 1997 when the doors closed due to filing of bankruptcy (Shepherd 1997). Today, the building is no longer extant.

Despite development of the 1920s, mature tree growth is notable on the land surrounding the bridge to the east and west, as evident from a postcard dating prior to the construction of the 1924 bridge, and continued to be observed in a 1941 aerial, especially to the western side of the bridge (Figures 12-13).

In 1948, the bridge was renamed “Beckett Bridge” after Edward H. Beckett, commending his 34 years of service as a County Commissioner at the time of his retirement (Freedman 1948). A native Floridian born in Clearwater in 1882, Beckett knew the district in which he was elected, having moved to Tarpon Springs in 1901 (Goldman 1996). After opening his own clothing store, Beckett expanded his business to various branches in the state. Then in 1929, in addition to managing his 53-acre orange grove and his 8-acre truck farm, he opened a real estate and insurance business in Tarpon

Springs. Beckett served as city councilman in Tarpon Springs and as chief of police in Clearwater before being elected to the Pinellas County Board of County Commissioners in 1916. He was also active in supporting secession from Hillsborough County. For 32 years on the County Commission, 16 of those as chairman, he led the push for public parks and efficient water systems. Beckett often voted for new roads and for paving of those already constructed (Goldman 1996). Beckett died in 1962.

After World War II, residential construction resumed in the neighborhoods in and surrounding the Tarpon Springs area, building out previously undeveloped lots. Figures 13-17 are historic aerials showing the development of the area surrounding the Beckett Bridge. Streets were repaved, the seawall was replaced around Spring Bayou, City Hall was expanded and other City services were improved. The sheer number of residential dwellings extant today from this period attests to the growth of the land surrounding Beckett Bridge, including a large trailer court off of Riverside Drive developed after 1957. While tourism had never ceased to play a big role in the City's commerce, in the late 1940s and early 1950s, tourism edged out sponges to become the City's biggest source of income. The increased development and tourism, combined with the Beckett Bridge being the shortest travel route between Tarpon Springs and the Gulf Coast, led to a high amount of traffic crossing the bridge on a daily basis.

Figure 14, a 1942 historical aerial photograph of the Tarpon Springs area, shows that the Beckett Bridge was the shortest route from downtown Tarpon Springs to the Gulf of Mexico. A more direct road south of the Whitcomb Bayou was not developed until many years after the construction of the bridge. 1950s historic aerial photographs of Tarpon Springs further show the route as the quickest means of travel to the Gulf (Figure 15).

Figure 15, a historic aerial from 1957, shows an increase in the building of boat docks along the east and west banks of the bridge. By 1957, much of the banks of Whitcomb Bayou by the Beckett Bridge were lined with boat docks, especially alongside the 1954 built Tarpon Springs Yacht Club building, located on present day North Springs Boulevard. The Yacht Club was initially founded in 1949 by business and civil leaders of the community. Meetings were held in the Upham House Hotel until funding was obtained to build the clubhouse, which is visible in Figure 14. The Tarpon Springs Yacht Club, in conjunction with 13 other yacht clubs, formed the Florida Council of Yacht Clubs (FCYC) to facilitate a program of boating interests between individual yacht clubs wishing to cruise the Florida coast. The Yacht Club building still stands today (8PI12048), but it has been greatly modified and no longer retains its historic fabric.

In 1955, Pinellas County deemed the Beckett Bridge unsafe and decided repairs to the original wooden structure would be wasteful (Twitty 1955). On February 21, 1955, the County Commission

approved an $81,292 contract to W.L. Cobb Construction Company of Tampa, Florida to reconstruct the bridge (n.a. 1956). The new structure retained the original steel draw and machinery for operation, with the remainder being built from steel-reinforced concrete. In 1996, additional repairs were needed. Steel crutch bents were added, the draw span and approach spans were repaired, the machinery was refurbished, the electrical system was replaced, and the tender station was constructed (Appendix B).

New residential housing construction has taken place since the initial wave of construction during the post World War II period, causing the area to increase in density. New construction consists of mainly residential housing. During the 1990s and 2000s the parking lot of the Tarpon Springs Yacht Club has been continuously expanded and now directly fronts the water by the Beckett Bridge.

ENGINEERING

With Florida's profusion of navigable waterways and its historical reliance on these routes for transportation, the ability to move bridges to let water traffic pass and the ability of automobile traffic to cross bodies of water was an imperative feature of each bridge. The movable bridge was most popular in Florida and consisted of three types: the swing, the vertical lift, and the bascule (FDOT 2004:72).

The Beckett Bridge is an example of the Scherzer rolling lift bascule bridge type. Credited to William Scherzer, the Scherzer rolling lift bascule rolls along a curved track as it opens and closes, pulling itself out of the way of water traffic as it does so (Koglin 2003:46). The Scherzer rolling lift bridge rotates and moves away from the channel like a simple rocking chair on a track as the bridge deck is raised. Scherzer claimed that his rolling-lift type operated with less friction and therefore, reduced power (FDOT 2004:90).

The Beckett Bridge is also an example of the single-leaf bascule bridge type. The bascule, or drawbridge, provides an open channel with unlimited clear headway, swift and dependable operation, and simple mechanisms with few moving parts. The defining characteristic of the bascule is the upward rotating leafs, which can be single or double. The Beckett Bridge consists of a single-leaf with rotates from a horizontal to a near vertical position. In a single-leaf, the entire span lifts above one end (FDOT 2004:90).

Bascule bridges are the most common type of moveable bridge, due to their ability to open quickly and requirement of little energy to operate. Single-leaf bascule bridges are less common than the double-leaf design, as they span smaller waterways. Though a common design that is still utilized

today, historic rolling lift bascule bridges are rare resources in the state of Florida. Additionally, the Beckett Bridge is the only bascule bridge in Pinellas County that is not on the Intracoastal Waterway (Hornik 2012). Table 1 lists the known single-leaf bascule roadway bridges remaining in Florida; this table includes historic as well as non-historic single-leaf bascule bridges. This data was provided by Richard I. Kerr, Bridge Management Inspection Engineer at the FDOT. The information provided by FDOT did not specify if the bridges are rolling lift type bridges.

Table 1: Known Single-Leaf Bascule Roadway Bridges Remaining in Florida

Bridge #	County	Facility Carried	Feature Intersected	Date of Construction
154000	Pinellas	N. Spring Blvd	Minetta Branch	1924
105503	Hillsborough	Laurel Street	Hillsborough River	1926
910054	Okeechobee	US441/US98 (SR700)	Taylor Creek	1948
460053	Bay	Beach Drive	Massalina Bayou	1951
860008	Broward	SR-84	So. Fork New River	1956
130057	Manatee	SR 789	Longboat Key Pass	1957
930060	Palm Beach	A1A	Boca Inlet	1963
120028	Lee	CR 865	Big Carlos Pass	1965
860011	Broward	SR-A1A	Hillsboro Inlet	1966
120050	Lee	CR 78 Pine Island Rd	Matlacha Pass	1968
930318	Palm Beach	EB SR 802 Lake Ave	Intracoastal Waterway	1973
870085	Dade	SR-934 WB	East Biscayne Bay	1973
870551	Dade	SR-934 EB	East Biscayne Bay	1973
110077	Lake	SR-40	St. Johns River	1980
860319	Broward	South Andrews Ave	New River & New River Dr	1981
900077	Monroe	SR-5 (US-1)	Snake Creek Canal	1981
170158	Sarasota	SR-789	New Pass	1986
790172	Volusia	SR-44	IWW Indian River	1997
930453	Palm Beach	EB SR706	Intracoastal Waterway	1999
930454	Palm Beach	WB SR 706	Intracoastal Waterway	1999
934160	Palm Beach	Donald Ross Road WB	Intracoastal Waterway	1999
934161	Palm Beach	Donald Ross Road RD EB	Intracoastal Waterway	1999

In addition, Archaeological Consultants, Inc. (ACI) provided a summary of information on bascule bridges that they obtained during research conducted on highway bridges in Florida for the Central Environmental Management Office of the FDOT. This research conducted by ACI shows that out of 87 bascule bridges included in their field survey, only 10 are rolling lifts, and one has been

demolished since 2000. Of the extant rolling lift bascules documented by ACI, the nine are double-leaf types. Two are located in Duval County, three are located in Palm Beach County, three are located in Broward County, and one is located in Hillsborough County. Of these nine rolling lifts, one dates to the 1910s, two date to the 1920s, two date to the 1930s, one dates to the 1940s, and three date to the 1960s. The three 1960s rolling lifts are all located in Broward County. Single-leaf bascule bridges are extremely rare as the survey by ACI only included two trunnion type bascules (ACI did not document the Beckett Bridge according to provided information)(ACI 2012). Trunnion type bridges eventually became a dominant bascule bridge type over the rolling lift; with this bridge type, the bascule span rotates around a trunnion or axle and uses a heavy counterweight (FDOT 2004:90).

The Beckett Bridge is an example of a Scherzer rolling lift single-leaf bascule bridge. This rare bridge is one of seven pre-1965 single-leaf bridges remaining in Florida. However, the results of the research were not intended to be exhaustive and it is possible that there are additional movable bridges which have not yet been identified. Despite rehabilitations and the replacement of building materials in both 1956 and 1996, the Beckett Bridge retains its integrity as a Scherzer rolling lift single-leaf bascule bridge. The changes that took place and the materials used during the 1956 rehabilitation are now historic. Consequently, this bridge is considered eligible for inclusion in the National Register.

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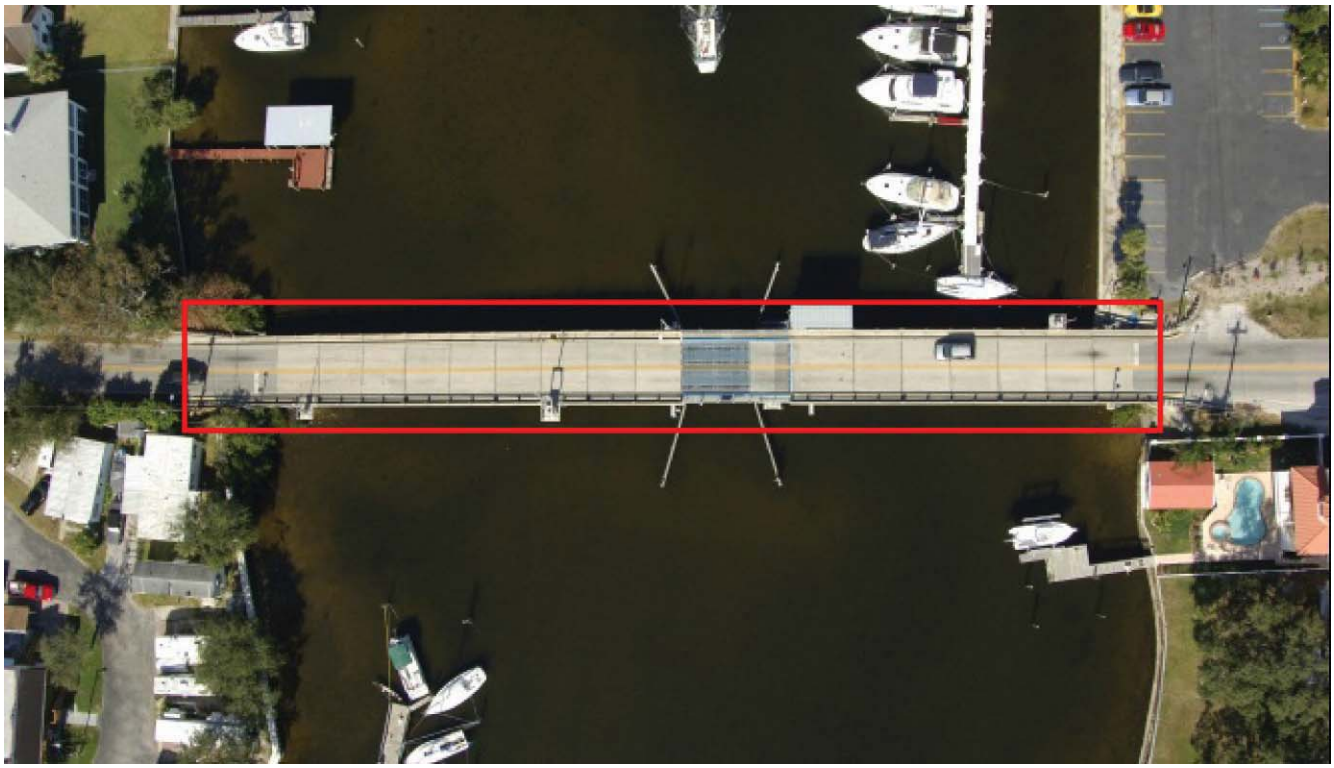
SECTION 10: GEOGRAPHICAL DATA

VERBAL BOUNDARY DESCRIPTION

The proposed boundary includes the physical structure (substructure, main span, approach spans, railings, and deck) of the Beckett Bridge along with the associated bridge tender's station.

BOUNDARY JUSTIFICATION

The boundary includes the aforementioned bridge systems, and bridge tender's station associated with the Beckett Bridge.



Beckett Bridge

Figure 1
Map of Project Boundaries

Beckett Bridge

Figure 2
Bridge Roadway, Facing East

Beckett Bridge

Figure 3
Sidewalk, Facing East

Beckett Bridge

Figure 4
Beckett Bridge in 1965, facing Southwest

Beckett Bridge

Figure 5
Beckett Bridge in 2012, facing Southwest

Beckett Bridge

Figure 6
Concrete Inscription at West End, Facing East

Beckett Bridge

Figure 7
Bascule Span, Facing South

Beckett Bridge

Figure 8
Bascule Span Detail, Facing Southwest

Beckett Bridge

Figure 9
Bridge Substructure, Facing Northeast

Beckett Bridge

Figure 10
Bridge Tender Station, Built in 1996, Facing Northeast

Beckett Bridge

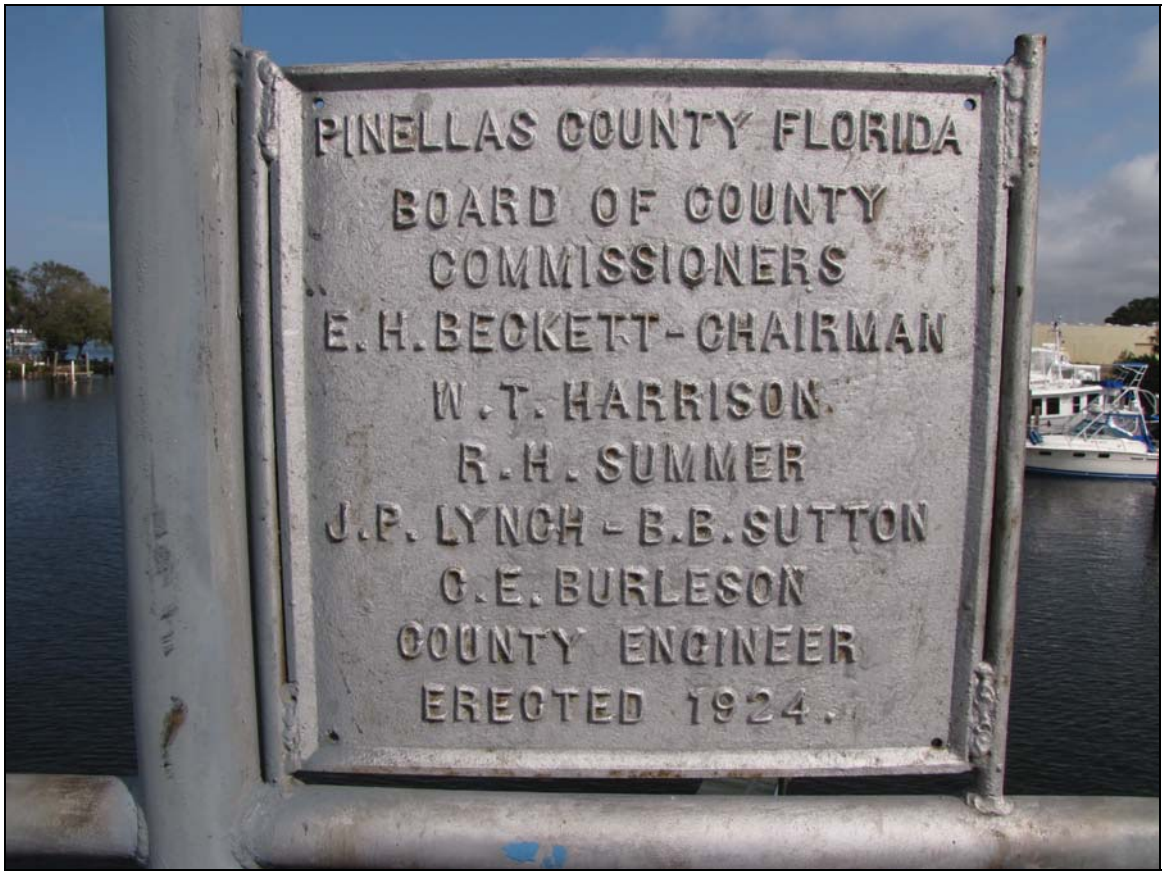


Figure 11
Plaque on Railing, Facing North

Beckett Bridge

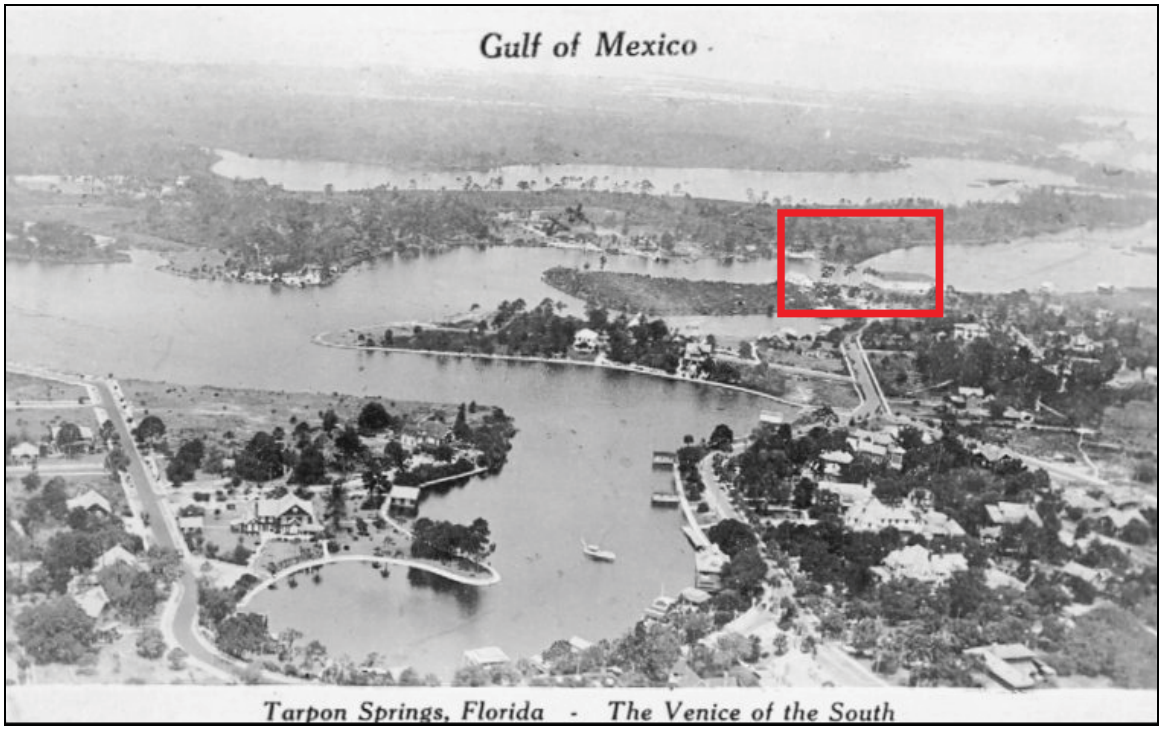


Figure 12
Historic Postcard Looking West, Showing Future Location of Beckett Bridge

Beckett Bridge

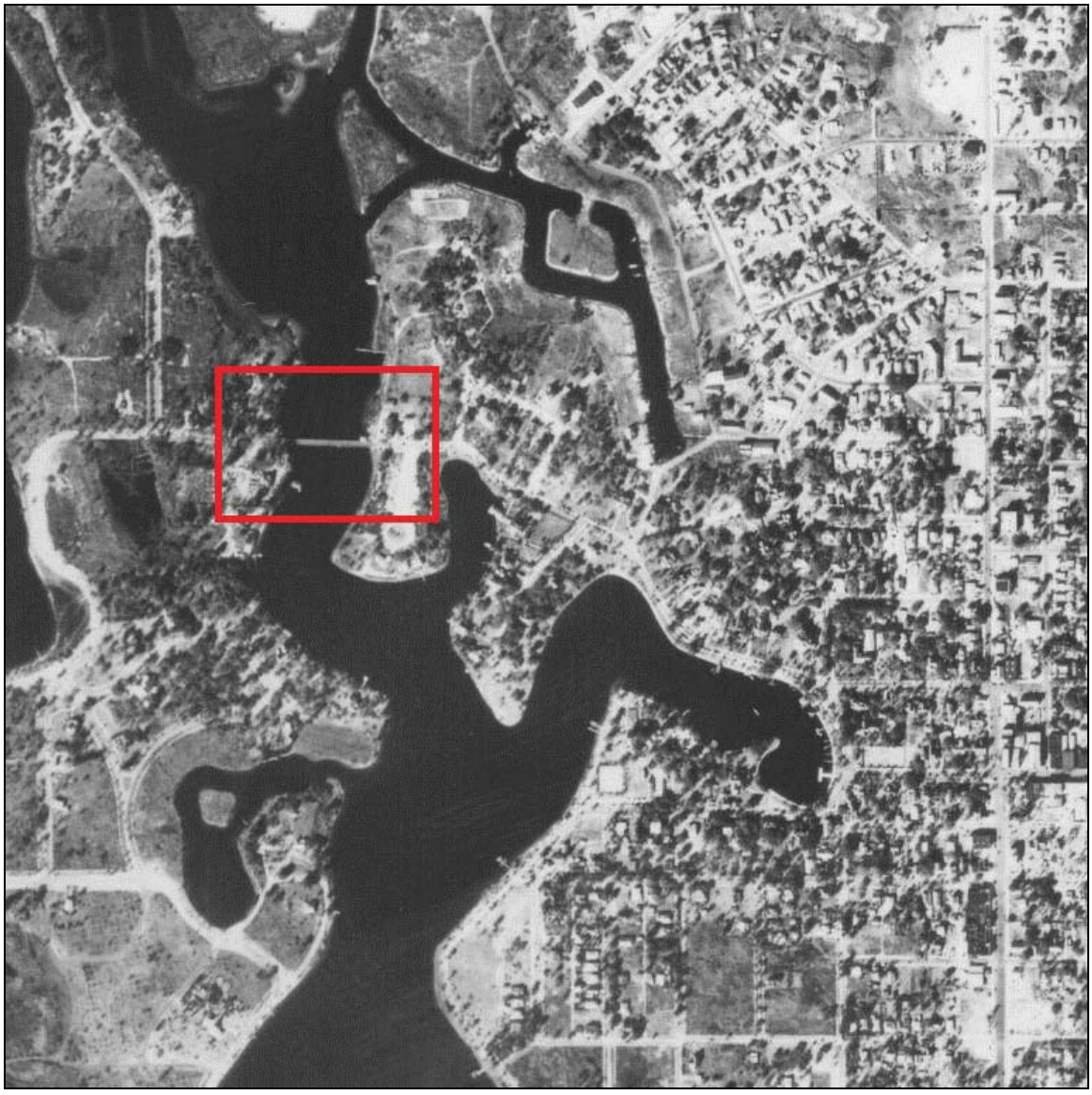


Figure 13
Historic Aerial of Beckett Bridge and Surrounding Tarpon Springs in 1941

Beckett Bridge

Figure 14
Historic Aerial of Beckett Bridge and Surrounding Tarpon Springs in 1942

Beckett Bridge

Figure 15
Historic Aerial of Beckett Bridge and Surrounding Tarpon Springs in 1957

Beckett Bridge

Figure 16
Historic Aerial showing Beckett Bridge to the southeast, the Country Club to the northwest, and surrounding Tarpon Springs in 1957

Beckett Bridge

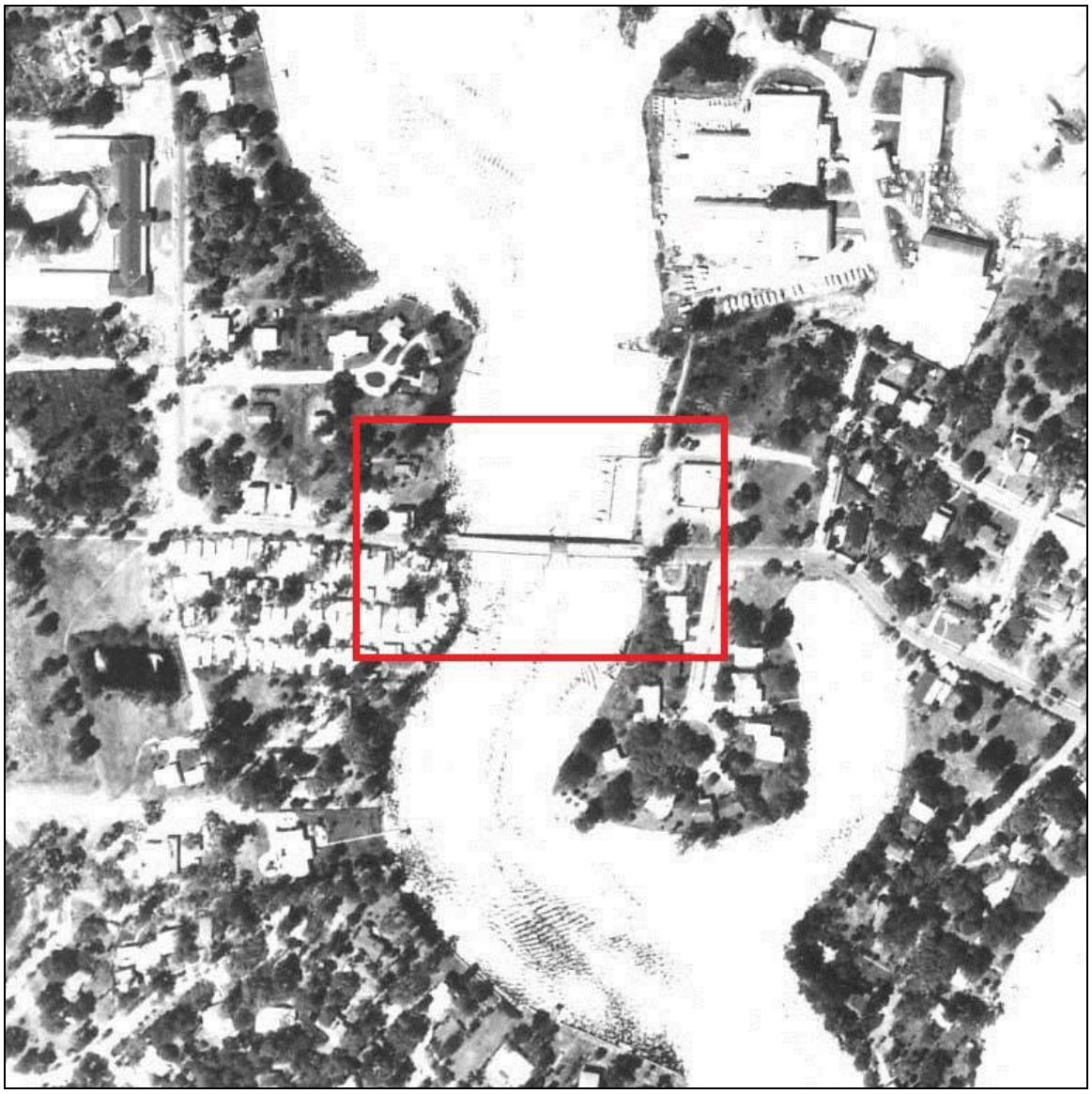


Figure 17
1974 Aerial of Beckett Bridge and Surrounding Tarpon Springs

NATIONAL REGISTER OF HISTORIC PLACES CONTINUATION SHEET

INVENTORY OF PHOTOGRAPHS

1. Beckett Bridge
2. Pinellas County, Florida
3. Holly Schwarzmann
4. February 2012
5. Janus Research
6. Beckett Bridge, Facing Southwest
7. Photograph 1 of 17

(Items 1-5 are the same for the remaining photographs)

6. Bridge Roadway, Facing East
7. Photograph 2 of 17

6. Sidewalk, Facing East
7. Photograph 3 of 17

6. Beckett Bridge in 1965, facing Southwest
7. Photograph 4 of 17

6. Beckett Bridge in 2012, facing Southwest
7. Photograph 5 of 17

6. Concrete Inscription at West End, Facing East
7. Photograph 6 of 17

6. Bascule Span, Facing South
7. Photograph 7 of 17

6. Bascule Span Detail, Facing Southwest
7. Photograph 8 of 17

6. Bridge Substructure, Facing Northeast
7. Photograph 9 of 17

6. Bridge Tender Station, Facing Northeast
7. Photograph 10 of 17

6. Plaque on Railing, Facing North
7. Photograph 11 of 17

6. Historic Postcard Showing Future Location of Beckett Bridge
7. Photograph 12 of 17

6. Historic Aerial of Beckett Bridge and Surrounding Tarpon Springs in 1941
7. Photograph 13 of 17

6. Historic Aerial of Beckett Bridge and Surrounding Tarpon Springs in 1942
7. Photograph 14 of 17

6. Historic Aerial of Beckett Bridge and Surrounding Tarpon Springs in 1957
7. Photograph 15 of 17

6. Historic Aerial showing Beckett Bridge to the southeast, the Country Club to the northwest, and surrounding Tarpon Springs in 1957
7. Photograph 16 of 17

6. 1974 Aerial of Beckett Bridge and Surrounding Tarpon Springs
7. Photograph 17 of 17

APPENDIX A:

1923 ENGINEERING PLANS

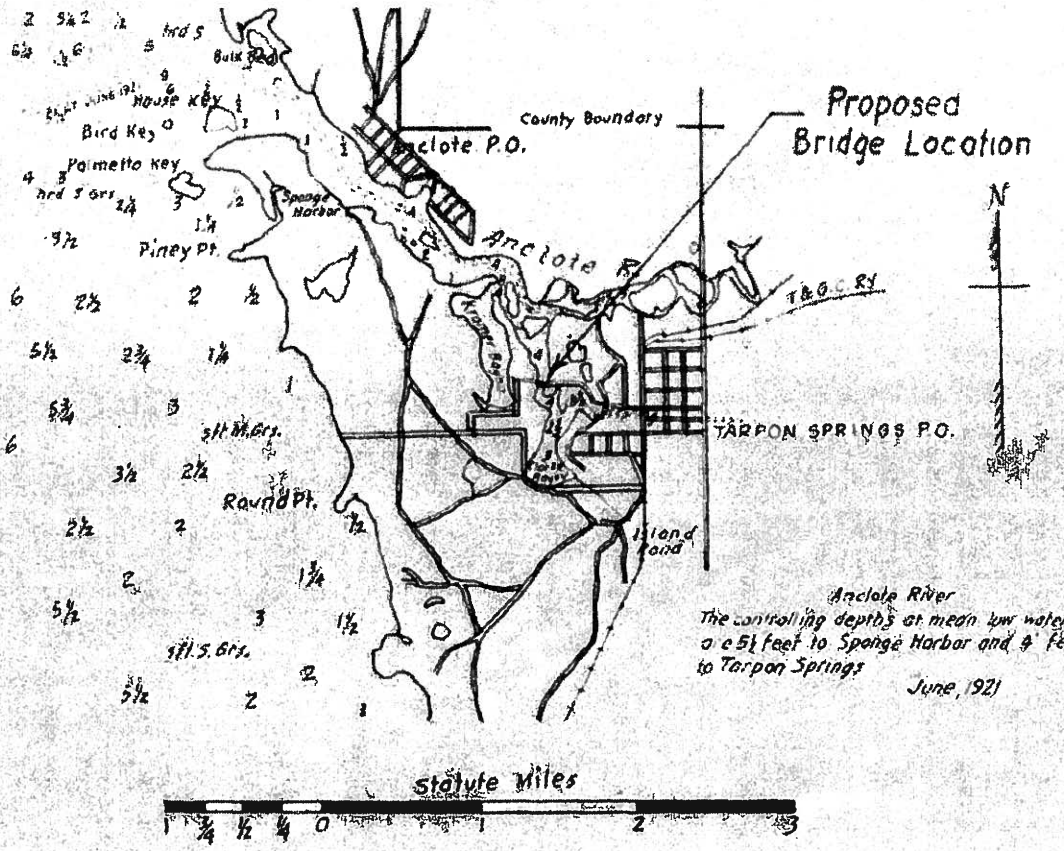
MAP OF

PROPOSED BRIDGE AND LIFT SPAN ACROSS TARPON BAYOU AT TARPON SPRINGS FLORIDA

TO BE ERECTED BY

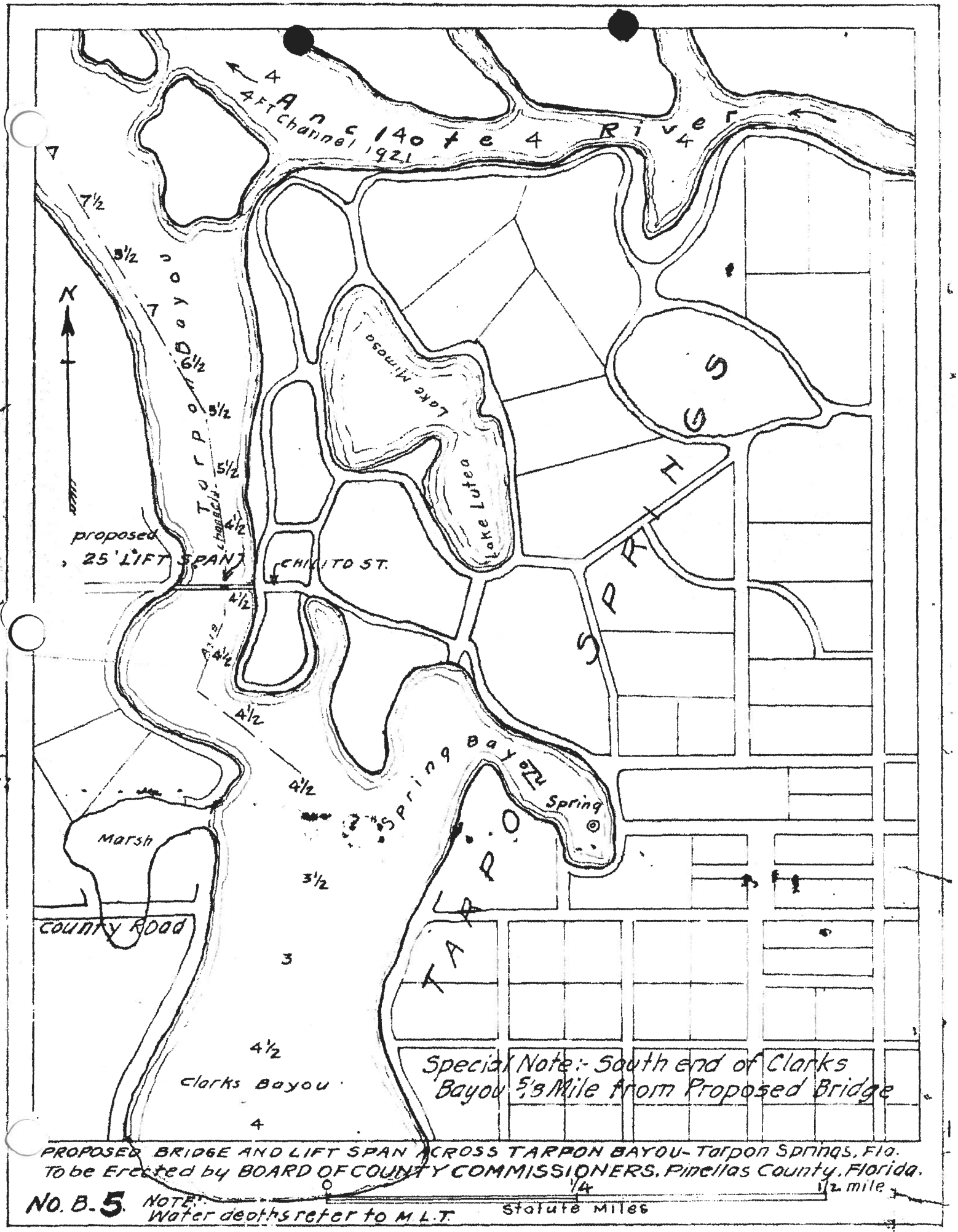
BOARD OF COUNTY COMMISSIONERS - PINELLAS COUNTY, FLORIDA.

Traced from U.S.C. & G.S. Chart No. 178 - Sept. 11, 1923



OFFICE OF COUNTY ENGINEER			
Clearwater, Florida.			
APPROVED 10-14-23	L. E. Burleson County Engineer		
Drawn	E. V. A.	9-14-23	NO
Checked	C. E. B.	10-12-23	8 1

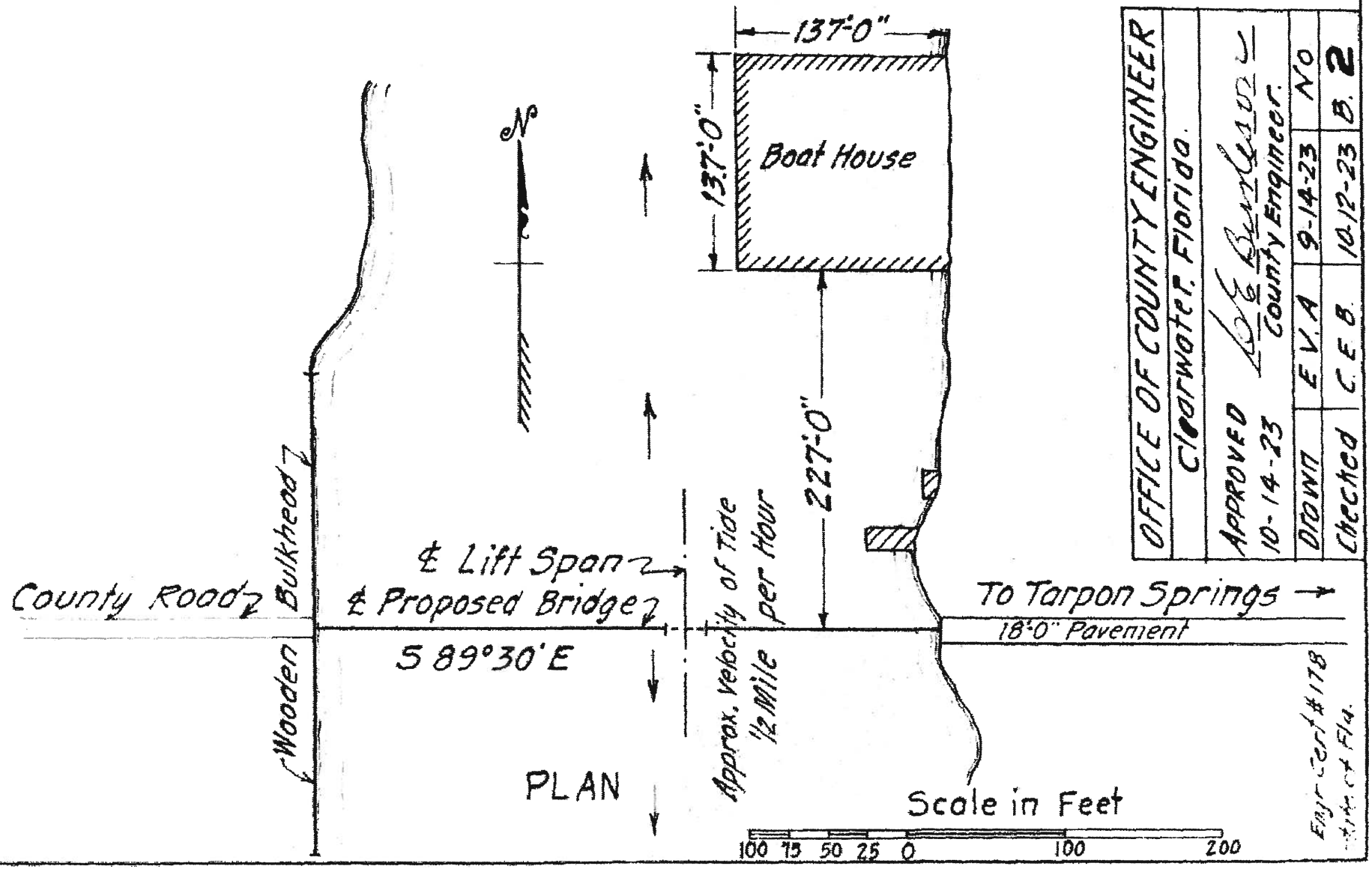
Engr Certificate #178
State of Florida.



PROPOSED BRIDGE AND LIFT SPAN ACROSS TARPON BAYOU- Tarpon Springs, Fla.
To be Erected by BOARD OF COUNTY COMMISSIONERS, Pinellas County, Florida.

NO. B-5 NOTE: Water depths refer to M.L.T.

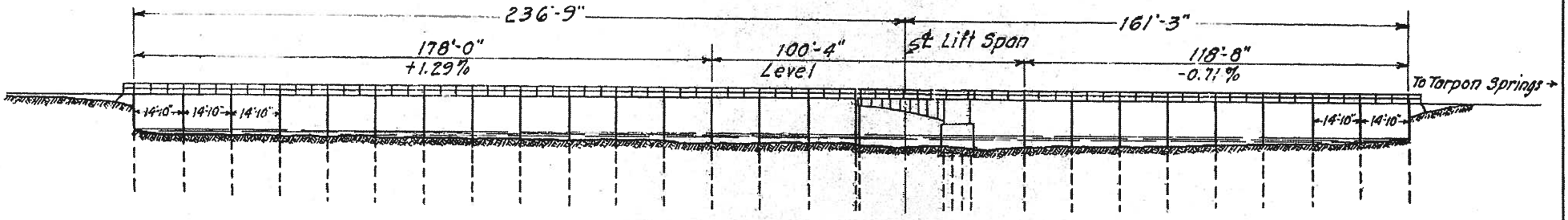
PROPOSED BRIDGE AND LIFT SPAN ACROSS TARPON BAYOU
AT TARPON SPRINGS, FLORIDA
TO BE ERECTED BY
BOARD OF COUNTY COMMISSIONERS - PINELLAS COUNTY, FLORIDA



OFFICE OF COUNTY ENGINEER			
Clearwater, Florida.			
Approved 10-14-23	L. G. Burleson County Engineer.		
Drawn	E.V.A	9-14-23	No 2
Checked	C.E.B.	10-12-23	B.

Engr. Cert. #178 State of Fla.

PROPOSED BRIDGE AND LIFT SPAN ACROSS TARPON BAYOU
AT TARPON SPRINGS, FLORIDA
TO BE ERECTED BY
BOARD OF COUNTY COMMISSIONERS- PINELLAS COUNTY, FLORIDA



GENERAL ELEVATION
Scale: 1"=25'-0"

Scale in Feet
25 18¾ 12½ 6¼ 0 25 50

Engr Certificate #178
State of Fla.

OFFICE OF COUNTY ENGINEER Clearwater, Florida.			
APPROVED 10-14-23	L. E. Burdeaux County Engineer		
Drawn	E. V. A.	9-12-23	No. 3
Checked	C. E. B.	10-12-23	

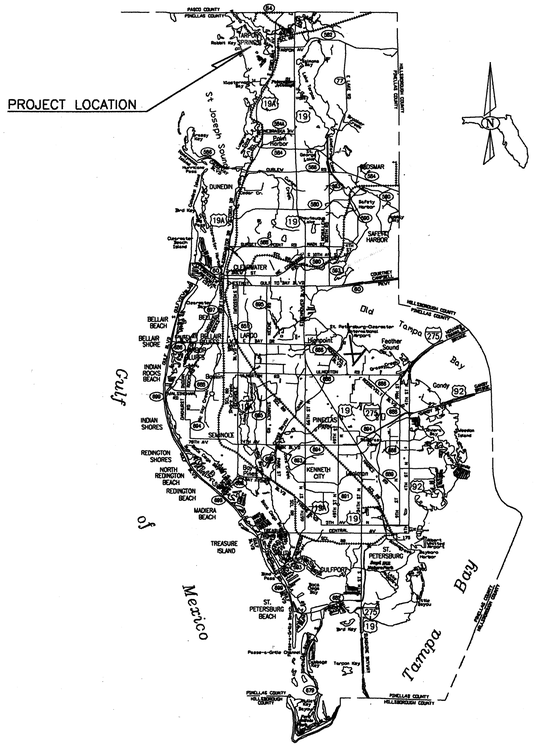
APPENDIX B:

1996 REHABILITATION PLANS

PINELLAS COUNTY
DEPARTMENT OF PUBLIC WORKS

PLANS OF PROPOSED
BECKETT BRIDGE REPAIRS

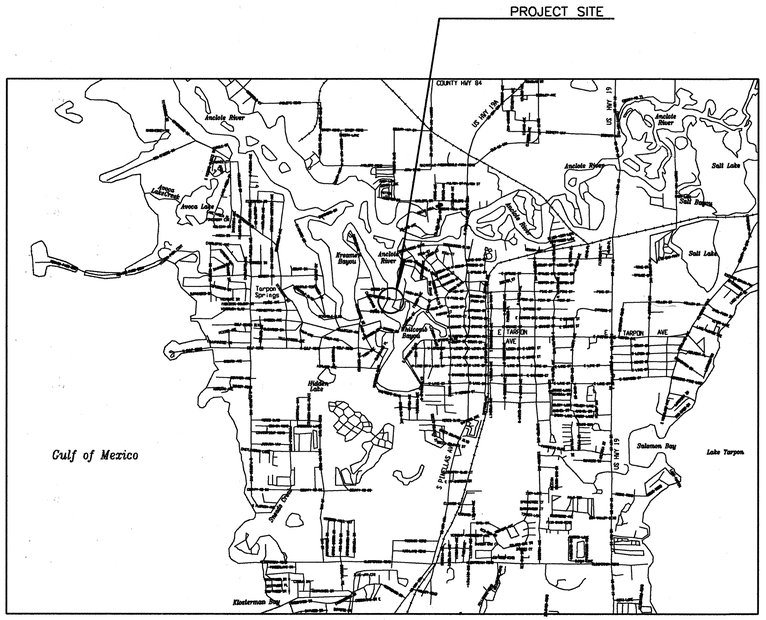
BRIDGE NO. 154000
P.I.D. NO. 106147
CONTRACT NO. 95002



PINELLAS COUNTY, FLORIDA
LOCATION MAP

INDEX OF BRIDGE REPAIR PLANS

DRAWING NO.	DESCRIPTION
A-1	TITLE SHEET AND INDEX OF DRAWINGS
A-2	GENERAL NOTES
A-3	SUMMARY OF QUANTITIES
A-4	KEY SHEET
A-5	TRAFFIC CONTROL DEVICES FOR MOVABLE SPAN BRIDGE SIGNALS
A-6	TRAFFIC CONTROL DEVICES FOR MOVABLE SPAN BRIDGE SIGNALS
A-7	NAVIGATION LIGHT SYSTEM DETAILS
A-8	REPORT OF CORE BORINGS
A-9	TRAFFIC CONTROL PLANS (1)
A-10	TRAFFIC CONTROL PLANS (2)
A-11	TRAFFIC CONTROL PLANS (3)
S-1	FOUNDATION LAYOUT
S-2	BULKHEAD DETAILS - END BENT 1
S-3	BULKHEAD DETAILS - END BENT 11
S-4	CRUTCH BENT DETAILS
S-5	BASCULE PIER STABILIZER DETAILS
S-6	CONTROL PLATFORM DETAILS
S-7	CONCRETE REPAIR DETAILS
S-8	BARRIER GATE SUPPORT DETAILS
S-9	TRAFFIC GATE SUPPORT AND PILASTER DETAILS
S-10	ACCESS LADDERS AND PLATFORM DETAILS
S-11	BASCULE SPAN REPAIRS
S-12	BASCULE SPAN - SIDEWALK AND HANDRAIL DETAILS
S-13	STRUCTURAL STEEL REPAIR DETAILS
S-14	COUNTERWEIGHT DETAILS
S-15	CONCRETE DECK REPLACEMENT AND JOINT DETAILS
S-16	APPROACH SLAB DETAILS
S-17	REINFORCING BAR LIST
E-1	ELECTRICAL SYMBOLS AND ABBREVIATIONS
E-2	ELECTRICAL SITE PLAN
E-3	RISER DIAGRAM
E-4	CONDUIT AND CABLE SCHEDULE
E-5	SPAN ELECTRICAL PLAN
E-6	CONTROL PANEL DETAILS & NOTES
E-7	SCHEDULES
E-8	ELECTRICAL DETAILS
E-9	TRAFFIC GATE DETAILS
E-10	BARRIER GATE DETAILS
M-1	MACHINERY PLAN
M-2	MACHINERY PLAN AND SCHEDULES
M-3	SPAN LOCK DETAILS
M-4	SPAN LOCK DETAILS
M-5	MISCELLANEOUS DETAILS
M-6	SECTIONS AND ELEVATIONS
M-7	HYDRAULIC SYSTEM SCHEMATIC
M-8	MECHANICAL SITE PLAN
M-9	MACHINERY DEMOLITION



VICINITY MAP

1 MILE

REVIEWED BY: ENRIQUE F. MAZAS, P.E., PROJECT MANAGER — DATE 8-14-95

RECOMMENDED FOR APPROVAL BY: ROBERT L. WARREN, DIRECTOR OF HIGHWAY DEPARTMENT — DATE 8-14-95

RECOMMENDED FOR APPROVAL BY: THOMAS WM. McGREW, P.E., DIRECTOR OF ENGINEERING — DATE 8.18.95

APPROVED BY: J. KEITH WICKS, P.E., DIRECTOR OF PUBLIC WORKS — DATE 8/31/95

R:\94068\CADD\BRIDGE
C:\WORK\TBCOVER 07/31/95 15:40:46 AEV PRODUCED BY DSA CADD SYSTEM

REVISIONS			REVISIONS		
Date	By	Description	Date	By	Description

SEAL:

	Names	Dates
Drawn by	TJL	5-95
Checked by	MRC	5-95
Designed by	MRC	5-95
Checked by	TJF	5-95
Approved by	T.J. FARRELL	

Timothy J. Farrell

DSA GROUP INC.
DSA GROUP, INC.
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

PINELLAS COUNTY DEPARTMENT OF PUBLIC WORKS

SHEET TITLE: TITLE SHEET AND INDEX OF DRAWINGS

PROJECT NAME: BECKETT BRIDGE REPAIRS

Drawing No. A-1

GENERAL NOTES

SCOPE OF WORK:

THIS CONTRACT REQUIRES WORK WHICH IS DEFINED IN THESE PLANS AND THE CONTRACT SPECIFICATIONS. SOME TASKS ARE PARTIALLY OR COMPLETELY DEFINED IN THE SPECIFICATIONS. REFERENCE TO THE "SPECIFICATIONS" INCLUDES REFERENCE TO ALL SUPPLEMENTAL SPECIFICATIONS, TECHNICAL SPECIAL PROVISIONS, AND STANDARD SPECIFICATIONS REFERENCED THEREIN. CONTRACT WORK INCLUDES THE FOLLOWING ITEMS AS DETAILED IN THESE PLANS AND THE SPECIFICATIONS:

STRUCTURAL:

1. REPAIR STRUCTURAL STEEL AND REPLACE BRACING ON THE BASCULE LEAF.
2. FURNISH AND INSTALL NEW CRUTCH BENTS AT BENTS 6 AND 7.
3. CLEAN AND PAINT STRUCTURAL STEEL AND MACHINERY.
4. REPLACE SIDEWALK AND HANDRAIL ON NORTH SIDE OF BASCULE SPAN. FURNISH AND INSTALL NEW SIDEWALK AND HANDRAIL ON SOUTH SIDE OF BASCULE SPAN.
5. FURNISH AND INSTALL NEW FENDER SYSTEM ACCESS LADDERS.
6. PROVIDE NEW OPERATOR PLATFORM ON THE NORTH SIDE OF SPAN 7.
7. INSTALL NEW SHEET PILE BULKHEADS AT END BENTS 1 AND 11.
8. FURNISH AND INSTALL BASCULE PIER STABILIZER.
9. CONSTRUCT NEW CONCRETE APPROACH SLABS.
10. REPLACE PART OF CONCRETE DECK IN SPAN 7.
11. CLEAN AND SEAL OPEN DECK JOINTS.
12. CLEAN AND PATCH CONCRETE SPALLS.

MACHINERY:

1. REMOVE EXISTING DRIVE MACHINERY AND MISCELLANEOUS COMPONENTS NO LONGER IN USE.
2. REPLACE SPAN LOCKS, GUIDES, AND RECEIVERS. FURNISH AND INSTALL NEW HYDRAULICALLY OPERATED SYSTEM.
3. RECONDITION AND ADJUST ALL LOAD SHOES.
4. REPLACE COUNTERWEIGHT AND BALANCE BASCULE SPAN.
5. FURNISH AND INSTALL NEW GEAR DRIVE SYSTEM.
6. ALIGN MACHINERY AND SPAN.
7. FURNISH AND INSTALL NEW BRAKE SYSTEM.
8. FURNISH AND INSTALL EMERGENCY DRIVE SYSTEM.
9. RECONDITION FLAT TRACK PLATES.
10. PROVIDE A FUNCTIONAL CHECKOUT OF OPERATING SYSTEMS.

ELECTRICAL:

1. REMOVE EXISTING CONTROL SYSTEM AND UTILITY SERVICE.
2. FURNISH AND INSTALL NEW DUAL DRIVE MOTORS.
3. FURNISH AND INSTALL NEW ELECTRICAL SERVICE.
4. REPLACE EXISTING WIRING, CONDUIT, AND JUNCTION BOXES.
5. FURNISH AND INSTALL NEW SUBMARINE CABLE.
6. FURNISH AND INSTALL NEW CONTROL CONSOLE.
7. FURNISH AND INSTALL NEW CONTROL PANEL / MOTOR CONTROLLERS.
8. FURNISH AND INSTALL NEW EMERGENCY POWER RECEPTACLE AND TRANSFER SWITCH.
9. FURNISH AND INSTALL NEW TRAFFIC SIGNALS.
10. FURNISH AND INSTALL NEW TRAFFIC GATES AND A BARRIER GATE.
11. FURNISH AND INSTALL NEW NAVIGATION LIGHTS.
12. FURNISH AND INSTALL LIGHTNING AND SURGE SUPPRESSION DEVICES.
13. FURNISH AND INSTALL NFPA LIGHTNING PROTECTION SYSTEM.

FIELD VERIFICATION OF DIMENSIONS:

DIMENSIONS OF EXISTING STRUCTURES, MECHANICAL AND ELECTRICAL COMPONENTS ARE PROVIDED FOR INFORMATION ONLY. THEY ARE DERIVED FROM OBSERVATIONS AND A FIELD SURVEY. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS. DISCREPANCIES FROM THE DIMENSIONS SHOWN IN THE PLANS MUST BE SHOWN IN THE SHOP DRAWINGS. DISCREPANCIES FROM THE DIMENSIONS SHOWN IN THE PLANS OR FAILURE BY THE CONTRACTOR TO VERIFY DIMENSIONS SHALL NOT BE JUSTIFICATION FOR CLAIMS.

CONSTRUCTION SPECIFICATIONS:

FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 1991 EDITION, AND SUPPLEMENTS THERETO.

DESIGN SPECIFICATIONS:

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO), STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 1992 EDITION WITH INTERIMS THROUGH 1994.

STANDARD SPECIFICATIONS FOR MOVABLE HIGHWAY BRIDGES, 1988 AND ALL APPLICABLE INTERIMS THROUGH 1991.

FDOT STRUCTURES DESIGN GUIDELINES, 1987, WITH REVISIONS THROUGH UPDATE "H".

SHOP DRAWINGS:

THE CONTRACTOR SHALL SUBMIT DETAILED SHOP DRAWINGS AND/OR CATALOG CUTS OF ALL NEW STRUCTURES, WELDMENTS, CASTINGS, SHIM PLATES, WEAR PLATES, PINS, TURNED BOLTS, LUBE LINES, LUBE FITTINGS, COMPONENTS, AND INCIDENTALS. SUCH DRAWINGS SHALL INCLUDE FITS, FINISHES, DIMENSIONS, AND MATERIALS FOR FABRICATED AND MANUFACTURED ELEMENTS. DIMENSIONS OF EXISTING ELEMENTS SUPPORTING OR CONTACTING THE NEW PARTS SHALL ALSO BE SHOWN. SEE THE SPECIFICATIONS FOR DETAILS ON SHOP DRAWING PREPARATION AND SUBMITTAL.

DESIGN LOADS:

THE ORIGINAL BRIDGE DESIGN LOAD IS UNKNOWN. REHABILITATION DESIGN LOAD BASED ON AASHTO HS-20.

PLATFORM LOADS: 85 psf. LIVE LOAD

OPERATIONAL REQUIREMENTS:

MOVABLE SPAN OPERATIONS CRITERIA FOR DESIGN AND REHABILITATION IS AS FOLLOWS:

TIME FOR "NORMAL OPERATION" = 60 SECONDS
SPAN ROTATION TO FULL OPEN = 49 DEGREES
EMERGENCY STOP TIME = 5 SECONDS (NORMAL SPEED)

ENVIRONMENT:

DESCRIPTION: SUPERSTRUCTURE CORROSIVE (EXTREMELY AGGRESSIVE)
SUBSTRUCTURE CORROSIVE (EXTREMELY AGGRESSIVE)
LOCATION: COASTAL

MATERIALS:

THE FOLLOWING GENERAL MATERIAL REQUIREMENTS SHALL APPLY. WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE REFERENCED SPECIFICATIONS WHERE APPLICABLE.

STRUCTURAL STEEL:

STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH ASTM A709, GRADE 36 OR AS DETAILED IN THE PLANS. STRUCTURAL STEEL SHALL BE PAINTED OR GALVANIZED AS DETAILED IN THE PLANS.

STRUCTURAL STEEL WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 460 OF THE STANDARD SPECIFICATIONS.

BOLTS:

WHERE NOTED, BOLTS FOR FASTENING OF MACHINERY COMPONENTS SHALL BE ASTM A-325 TURNED BOLTS, MACHINED TO AN ANSI B46.1 SURFACE FINISH OF 63 MICROINCHES AND AN ANSI B4.1 LC-6 FIT. BOLTS SHALL BE PROVIDED WITH A POSITIVE MEANS OF NUT RESTRAINT (BY COTTER PIN, SET SCREW, ETC.) OR SHALL BE SUPPLIED WITH DOUBLE NUTS.

BOLTS FOR STRUCTURAL STEEL CONNECTIONS SHALL BE 3/4"ø ASTM A325 TYPE 1, HIGH STRENGTH BLACK BOLTS UNLESS OTHERWISE NOTED. ALL BOLTED CONNECTIONS ARE FRICTION TYPE.

INSTALLATION OF BOLTS SHALL BE IN ACCORDANCE WITH SECTION 460 OF THE STANDARD SPECIFICATIONS.

REINFORCING STEEL:

REINFORCING STEEL SHALL BE ASTM A615, GRADE 60. ALLOWABLE TENSILE STRESS = 24,000 PSI. REINFORCING STEEL SHALL BE UNCOATED. ALL DIMENSIONS SHOWN ARE TO CENTERLINE OF BARS EXCEPT WHERE THE CLEAR DIMENSION IS SHOWN FROM FACE OF CONCRETE TO OUTSIDE EDGE OF BAR. REINFORCING DETAIL DIMENSIONS ARE OUT-TO-OUT OF BARS.

PLACING OF REINFORCING STEEL SHALL BE IN ACCORDANCE WITH SECTION 415 OF THE STANDARD SPECIFICATIONS.

CONCRETE:

ITEM	CONCRETE CLASS (FDOT)	MIN. 28-DAY COMP. STRENGTH (PSI)	MAX. COMP. STRESS (PSI)	DESIGN MODULUS OF ELASTICITY **
DECK SLABS, APPROACH SLABS, CONTROL PLATFORM AND OTHER SUPERSTRUCTURE DETAILS	IV	f'c = 5,500 *	fc = 2,200	3,900
SUBSTRUCTURE COMPONENTS	IV	f'c = 5,500 *	fc = 2,200	3,900
CONCRETE COUNTERWEIGHT	II	f'c = 3,400	fc = 1,400	3,000

* ACTUAL DESIGN WAS BASED ON 3,400 PSI
** ASSUMES FLORIDA LIMEROCK AGGREGATE

CONCRETE SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 346 OF THE SUPPLEMENTAL SPECIFICATIONS.

CONCRETE WORK SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 400 OF THE STANDARD SPECIFICATIONS.

PLATFORM GRATING:

PLATFORM GRATING SHALL BE PRESSURE LOCKED RECTANGULAR DESIGN, TYPE B, AS MANUFACTURED BY IKG INDUSTRIES OR AN APPROVED EQUAL. MATERIAL TO BE ASTM A-569 STEEL. MAIN BARS TO BE 1 1/2" X 1/8" SPACED 1 3/16" CENTER TO CENTER. CROSS BARS TO BE OF RECTANGULAR CROSS SECTION, FLUSH TOP AND SPACED 4 INCHES CENTER TO CENTER. MAIN BARS AND CROSS BARS TO BE SLOTTED AT THEIR INTERSECTIONS SO AS NOT TO REMOVE EXCESSIVE MATERIAL FROM THE LOAD SUSTAINING MEMBERS. MAIN BARS TO BE DOVETAIL SLOTTED AND HAVE THEIR SLOTS SOLIDLY FILLED BY THE CROSS BARS. GRATING SHALL BE BOLTED TO SUPPORTING MEMBERS WITH FASTENERS SUPPLIED BY THE MANUFACTURER. FINISH SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM A123. GRATING SHALL WEIGH APPROXIMATELY 7.6 LB/SQ FT.

SIDEWALK PLATE:

SIDEWALK PLATE SHALL BE 3/8" ALUMINUM TREAD PLATE OF ALUMINUM ALLOY 6061-T6. ALUMINUM: fy = 35,000 psi, fa = 15,000 psi. THE CONTACT SURFACES BETWEEN THE ALUMINUM PLATE AND STEEL MEMBERS SHALL BE COATED WITH CHROMATE PAINT. THE ALUMINUM PLATE SHALL BE FASTENED TO THE STEEL MEMBERS WITH 1/2" DIAMETER COUNTERSUNK STAINLESS STEEL BOLTS AT 2'-0" SPACING ALONG THE MEMBER.

STEEL SHEET PILES:

STEEL SHEET PILES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A 328 (fy = 38,500 psi).

ALLOWABLE DESIGN STRESS = 25,000 psi.

STEEL SHEET PILES SHALL BE INSTALLED IN ACCORDANCE WITH SECTION A455 OF THE SUPPLEMENTAL SPECIFICATIONS.

PAINTING:

PAINT ON THE EXISTING STRUCTURE CONTAINS LEAD. THE EXISTING STRUCTURE SHALL BE CLEANED AND PAINTED IN ACCORDANCE WITH SECTION 561 OF THE TECHNICAL SPECIAL PROVISIONS.

NEW STRUCTURAL STEEL SHALL BE PAINTED IN ACCORDANCE WITH SECTION 561 OF THE TECHNICAL SPECIAL PROVISIONS.

GALVANIZING:

ALL LADDERS, PLATFORMS, HANDRAILS, AND STRUCTURAL AND MISCELLANEOUS STEEL AS DESIGNATED IN THE PLANS SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM A123.

ALL NUTS, BOLTS, WASHERS, ANCHOR BOLTS, AND MISCELLANEOUS CONNECTION PIECES FOR THE ABOVE ITEMS SHALL BE HOT DIP GALVANIZED WITH ASTM A153.

PIPE HANDRAIL:

RAILS AND POSTS SHALL BE MADE OF SCHEDULE 40 STEEL PIPE OF THE SIZE SHOWN IN THE PLANS AND SHALL MEET THE REQUIREMENTS OF ASTM A53 FOR STANDARD WEIGHT PIPE. POSTS SHALL BE ATTACHED TO SUPPORTING MEMBERS BY DETAILS SHOWN IN THE PLANS AT INTERVALS SHOWN IN THE PLANS. RAIL TO POST CONNECTIONS SHALL BE MADE BY ELECTRIC ARE WELDING. FINISH SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM A123.

STEEL PILING;

STEEL PILES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36. SEE THE FOUNDATION LAYOUT SHEET FOR PILE LOAD INFORMATION.

STEEL PILES SHALL BE INSTALLED IN ACCORDANCE WITH SECTION A455 OF THE SUPPLEMENTAL SPECIFICATIONS AND THESE PLANS.

LUBRICATION:

PIPING FOR LUBRICATION SHALL BE ASTM B-43 BRONZE AND FITTINGS SHALL BE ASTM B-62 BRONZE.

LUBRIICATION REQUIREMENTS SHALL BE IN ACCORDANCE WITH SECTION 465 OF THE TECHNICAL SPECIFICATIONS.

WELDING:

EXCEPT AS NOTED IN THE PLANS OR SPECIFICATIONS, FIELD WELDING IS PROHIBITED. ALL WELDING AND NON DESTRUCTIVE TESTING OF WELDS SHALL BE IN ACCORDANCE WITH THE SPECIAL PROVISIONS AND THE ANSI/AASHTO/AWS D1.5-92 BRIDGE WELDING CODE. UNLESS OTHERWISE NOTED, ALL WELDS SHALL BE 5/16" CONTINUOUS FILLET WELDS.

WELD INSPECTION:

WELDS ARE TO BE INSPECTED BY NON DESTRUCTIVE METHODS AS REQUIRED BY THE SPECIFICATIONS.

MAINTENANCE OF TRAFFIC PLANS:

REHABILITATION MUST BE COORDINATED WITH THE MOT PLAN. SEE PLANS AND SPECIFICATIONS FOR DETAILS.

BRIDGE TENDER:

THE CONTRACTOR SHALL HAVE A QUALIFIED BRIDGE TENDER ON CALL DURING ALL PHASES OF CONSTRUCTION FOR WHICH THE BRIDGE IS OPERATIONAL.

OPERATION TESTING:

OPERATIONAL TESTING OF REHABILITATED MACHINERY IS REQUIRED, SEE TECHNICAL SPECIAL PROVISIONS FOR DETAILS.

BASIS OF PAYMENT:

FOR A DETAILED DEFINITION OF THE BASIS OF PAYMENT, SEE EACH WORK ITEM IN THE SPECIFICATIONS.

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REVISIONS Date	By	Description	REVISIONS Date	By	Description

SEAL:

	Names	Dates
Drawn by	KTL	5-95
Checked by	MRC	5-95
Designed by	MRC	5-95
Checked by	TJF	5-95
Approved by	T.J. FARRELL	

Timothy J. Farrell

DSA GROUP INC.
DSA GROUP, INC.
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

PINELLAS COUNTY DEPARTMENT OF PUBLIC WORKS

SHEET TITLE: GENERAL NOTES

PROJECT NAME: BECKETT BRIDGE REPAIRS

SHEET A-2

BID ITEM NOTES:

1. PAYMENT FOR INCIDENTAL ITEMS NOT SPECIFICALLY COVERED IN THE INDIVIDUAL PAY (BID) ITEMS SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR PAY (BID) ITEMS.
2. FOR MAINTENANCE OF TRAFFIC NOTES, SEE "TRAFFIC CONTROL PLANS."
3. THE TOTAL PLAN AREA OF THE APPROACH SLABS REQUIRED IS 115 S.Y. FOR DETAILS, SEE "APPROACH SLAB DETAILS."
4. COST OF SIDEWALK PLATE SHALL BE INCLUDED IN ITEM NO. 460-2-5, STRUCTURAL STEEL (BASCULE LEAVES).
5. PAYMENT FOR CONCRETE TO FILL BASCULE LEAF GRATING SHALL BE INCLUDED IN ITEM NO. 400-4-4, CONCRETE (SUPERSTRUCTURE).

SUMMARY OF QUANTITIES

PAY ITEM NO.	PAY ITEM	UNIT	ORIGINAL QUANTITY	FINAL QUANTITY
101-1	MOBILIZATION	LS	1	
102-1	MAINTENANCE OF TRAFFIC (180 CONSTRUCTION DAYS)	LS	1	
102-74-1	BARRICADE (TEMPORARY-TYPE I, II, VP & DRUM)	ED	574	
102-74-2	BARRICADE (TEMPORARY-TYPE III) (6)	ED	1,680	
102-75	CONSTRUCTION SIGNS (TEMPORARY-POST MOUNTED)	ED	2,534	
102-77	HIGH INTENSITY FLASHING LIGHTS (TEMPORARY-TYPE B)	ED	2,428	
102-90	BRIDGE OPERATOR	DA	7	
102-96	TEMPORARY REGULATORY SIGNS (POST MOUNTED)	ED	600	
102-99	SIGN VARIABLE MESSAGE (TEMPORARY)	ED	260	
104-11	TURBIDITY BARRIER FLOATING	LF	440	
350-72	CLEANING AND RESEALING DECK JOINTS	LF	252	
360-1	APPROACH SLABS CONCRETE	EA	2	
400-2-6	CONCRETE CLASS II (COUNTERWEIGHT)	CY	18.0	
400-4-4	CONCRETE CLASS IV (SUPERSTRUCTURE)	CY	10.3	
400-135	INJECT AND SEAL CRACKS	LF	10	
401-70-1	RESTORE SPALLED AREAS	CF	10	
415-1-4	REINFORCING STEEL (SUPERSTRUCTURE)	LB	3,145	
455-7-5	PILING FURNISHED (HP 14x73)	LF	428	
455-8-5	PILING DRIVEN (HP 14x73)	LF	428	
455-133	SHEET PILING STEEL (FURNISHED & INSTALLED)	SF	853	
456-1	PILE ENCAPSULATION	LF	40	
460-2-1	STRUCTURAL STEEL (CARBON)	LB	25,500	
460-2-5	STRUCTURAL STEEL (BASCULE LEAVES)	LB	14,000	
460-3-101	MACHINERY & CASTINGS (F&I)(SPEED REDUCER AND GEAR TRAIN)	LS	1	
460-3-106	MACHINERY & CASTINGS (RECONDITION)(COMPONENTS)	LS	1	
460-3-108	MACHINERY AND CASTINGS (F&I)(LIVE LOAD SHOES)	LS	1	
460-3-401	MACHINERY AND CASTINGS (REMOVE)(GEAR TRAIN)	LS	1	
460-3-506	MACHINERY & CASTINGS (ALIGN)(COMPONENTS)	LS	1	
460-3-810	MACHINERY AND CASTINGS (RECONDITION) (FLAT TRACKS)	LS	1	
461-6	ACCESS LADDERS, PLATFORMS, HANDRAILS	LB	3,900	
460-7-42	EXPANSION JOINT	LF	20	
460-101-121	HYDRAULIC SYSTEM (F&I)(PERMANANT SYSTEM)	LS	1	
460-101-124	HYDRAULIC SYSTEM (F&I) (SPAN LOCK)	EA	2	
460-121-50	COUNTERWEIGHT MOVABLE BRIDGE (BALANCE)	EA	1	
465-71-1	MOVABLE BRIDGE FUNCTIONAL CHECKOUT	LS	1	
508-70-1	ELECTRICAL SYSTEM (F&I)	LS	1	
508-70-4	EXISTING ELECTRICAL SYSTEM (REMOVE)	LS	1	
508-73-1	SUBMARINE CABLE ASSEMBLY (F&I)	LF	85	
508-76-1	SPAN MOTORS AND AUXILLARY (F&I)	LS	1	
508-79-1	CONTROL CONSOLE (F&I)	EA	1	
508-80-1	BRAKE SYSTEM (F&I)	EA	2	
508-81-1	LIMIT SWITCHES (F&I) (LIMIT AND SEATING)	EA	8	
508-82-1	CONTROL PANEL / MOTOR CONTROL (F&I)	EA	1	
510-1	NAVIGATION LIGHTS	LS	1	
512-1	TENDER FACILITIES AND EQUIPMENT	LS	1	
524-2-1	SLOPE PAVEMENT CONCRETE	SY	18	
560-1	PAINT STRUCTURAL STEEL	TN	34	
712-70-111	MOVABLE BRIDGE TRAFFIC SIGNALS	EA	6	
712-71-13	MOVABLE BRIDGE TRAFFIC GATES (F&I)	AS	2	
712-72-122	MOVABLE BRIDGE BARRIER GATE (F&I)	AS	1	
750-711-100	LIGHTNING PROTECTION SYSTEM (POINT DISCHARGE) (F&I)	EA	1	
750-711-332	LIGHTNING PROTECTION (SURGE SUPPRESSION) (F&I)	LS	1	
900-1	OFFICE FOR THE ENGINEER	LS	1	

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REVISIONS			REVISIONS		
Date	By	Description	Date	By	Description

SEAL:

	Names	Dates
Drawn by	KTL	5-95
Checked by	MRC	5-95
Designed by	MRC	5-95
Checked by	BGW	5-95
Approved by	T.J. FARRELL	

Timothy J. Farrell

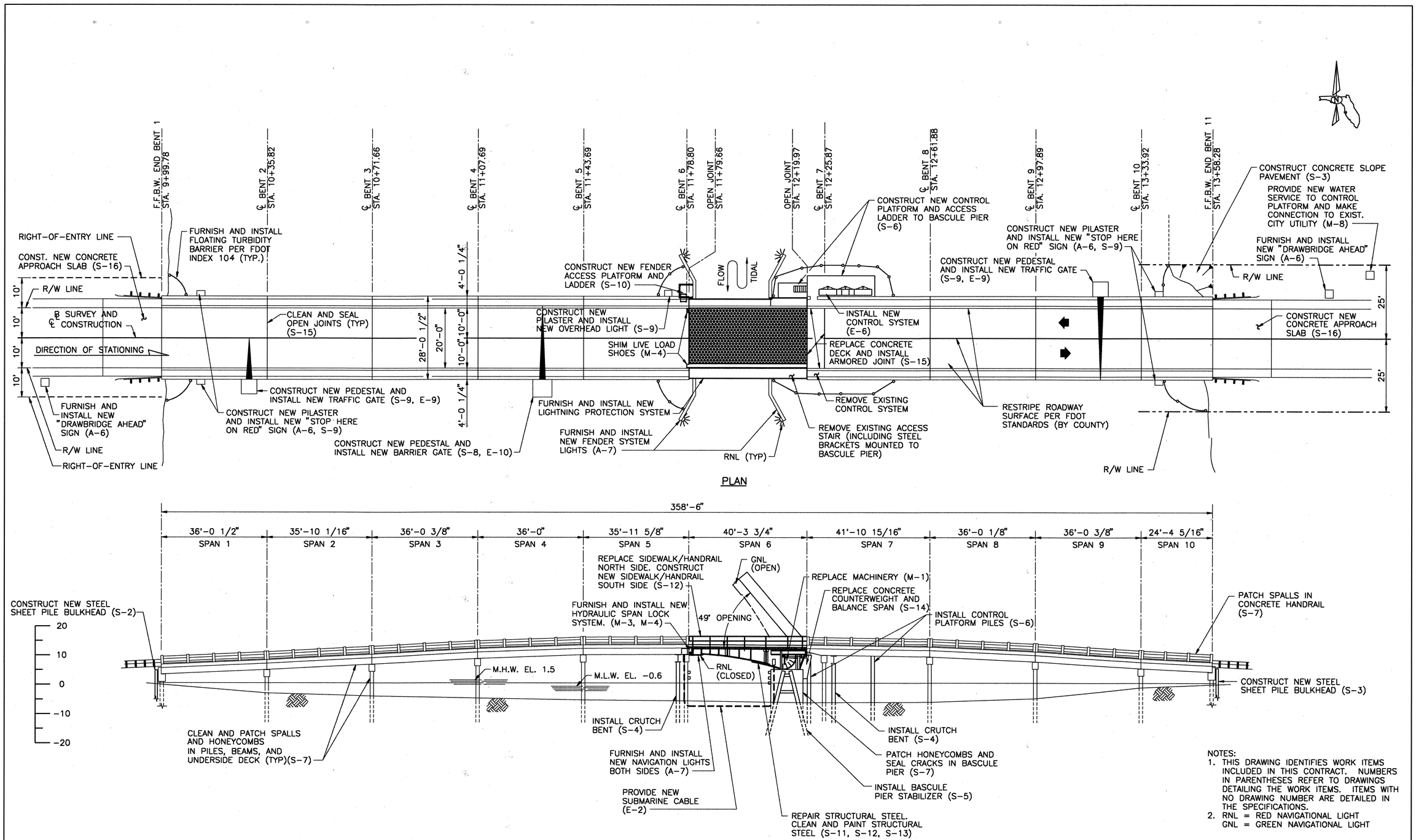
DSA GROUP INC.
DSA GROUP, INC.
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

PINELLAS COUNTY FLORIDA
PINELLAS COUNTY
DEPARTMENT OF
PUBLIC WORKS

SHEET TITLE: SUMMARY OF QUANTITIES

PROJECT NAME: BECKETT BRIDGE REPAIRS

SHEET A-3



NOTES:
1. THIS DRAWING IDENTIFIES WORK ITEMS INCLUDED IN THIS CONTRACT. NUMBERS IN PARENTHESES REFER TO DRAWINGS DETAILING THE WORK ITEMS. ITEMS WITH NO DRAWING NUMBER ARE DETAILED IN THE SPECIFICATIONS.
2. RNL = RED NAVIGATIONAL LIGHT
   GNL = GREEN NAVIGATIONAL LIGHT

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	Names	Dates
Drawn by	CLM	5-95
Checked by	TJF	5-95
Designed by	MRC	5-95
Checked by	TJF	5-95
Approved by	T.J. FARRELL	

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DSA GROUP INC.
DSA GROUP, INC.
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

PINELLAS COUNTY DEPARTMENT OF PUBLIC WORKS

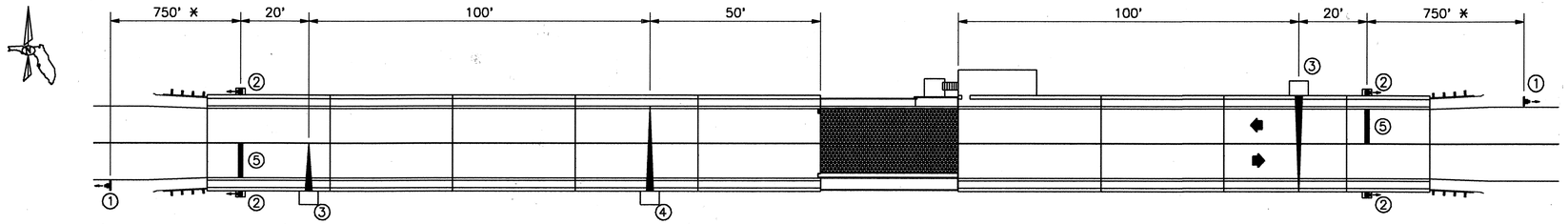
BRIDGE NO. 154000

SHEET TITLE: KEY SHEET

PROJECT NAME: BECKETT BRIDGE REPAIRS

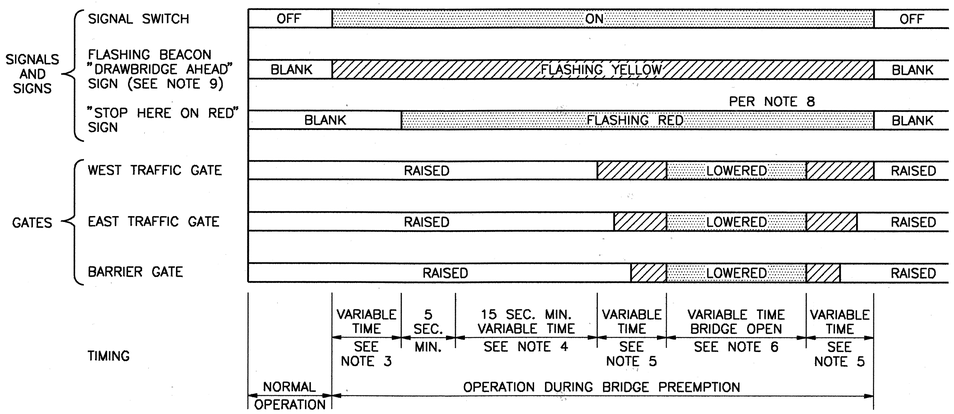
SHEET A-4

BRIDGE MOUNTS



* = FIELD CONDITIONS MAY REQUIRE ADJUSTMENT OF THIS STANDARD DISTANCE.

PLAN



SEQUENCE CHART

LEGEND

① "DRAWBRIDGE AHEAD" SIGN
② "STOP HERE ON RED" SIGN
③ TRAFFIC GATE
④ BARRIER GATE
⑤ 24" THERMOPLASTIC STOP BAR

NOTES:
1. THE OPERATOR FOR THIS BRIDGE IS ON CALL.
2. A KEY LOCK SWITCH SHALL BE INSTALLED TO OVERRIDE EACH TIMING INTERVAL IN CASE OF MALFUNCTION.
3. THE TIME BETWEEN BEGINNING OF FLASHING YELLOW ON "DRAWBRIDGE AHEAD" SIGN AND THE CLEARANCE OF THE TRAFFIC SIGNAL TO RED, OR BEGINNING OF FLASHING RED, SHOULD NOT BE LESS THAN THE TRAVEL TIME OF A PASSENGER CAR, FROM THE SIGN LOCATION TO THE STOP LINE, TRAVELING AT THE 85 PERCENTILE APPROACH SPEED.
4. BEGINNING OF OPERATION OF DRAWBRIDGE GATES SHALL NOT BE LESS THAN 15 SECONDS AFTER STEADY RED OR 20 SECONDS AFTER FLASHING RED (ACTUAL TIME MAY BE DETERMINED BY THE BRIDGE TENDER).
5. TIME OF GATE LOWERING AND RAISING IS DEPENDENT UPON GATE TYPE.
6. TIME OF BRIDGE OPENING IS DETERMINED BY THE BRIDGE TENDER.
7. EACH GATE SHALL BE OPERATED BY A SEPARATE SWITCH.
8. ON EACH APPROACH , ALL FOUR RED SIGNALS SHALL BE ON THE SAME TWO CIRCUIT FLASHER, WITH THE TWO TOP SIGNALS ON ONE CIRCUIT AND THE TWO BOTTOM SIGNALS ON THE ALTERNATELY FLASHING CIRCUIT.
9. A "DRAWBRIDGE AHEAD" SIGN IS REQUIRED FOR BOTH TYPES OF SIGNAL OPERATION. HOWEVER, A FLASHING BEACON SHALL BE ADDED TO THE SIGN WHEN PHYSICAL CONDITIONS PREVENT A DRIVER TRAVELING AT THE 85 PERCENT APPROACH SPEED FROM HAVING CONTINUOUS VIEW OF AT LEAST ONE SIGNAL INDICATION FOR APPROXIMATELY 10 SECONDS.
10. REQUIREMENTS ON GATE INSTALLATION ARE CONTAINED IN SECTION 4E-14 THROUGH 4E-17 OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AS REVISED BY OFFICIAL RULINGS, VOLUME VII RULING SG 67.

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	Names	Dates
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Checked by	RMC	5-95
Approved by	T. J. FARRELL	

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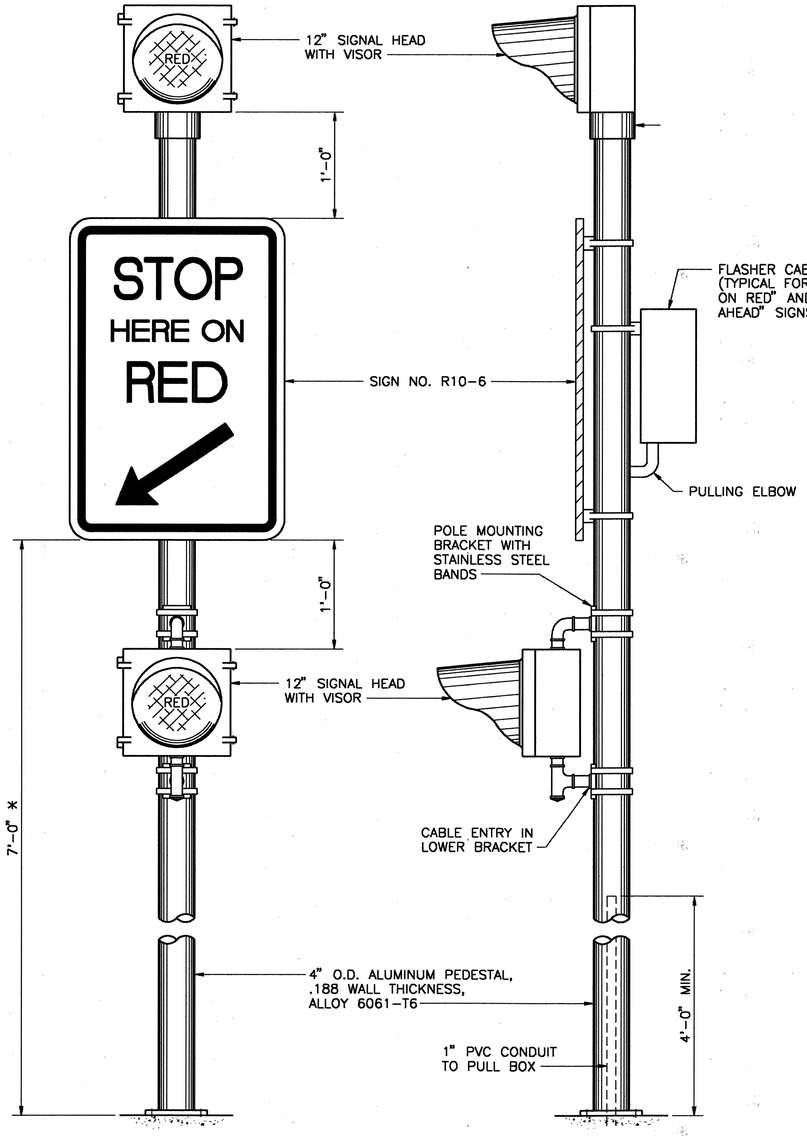
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

PINELLAS COUNTY
DEPARTMENT OF
PUBLIC WORKS

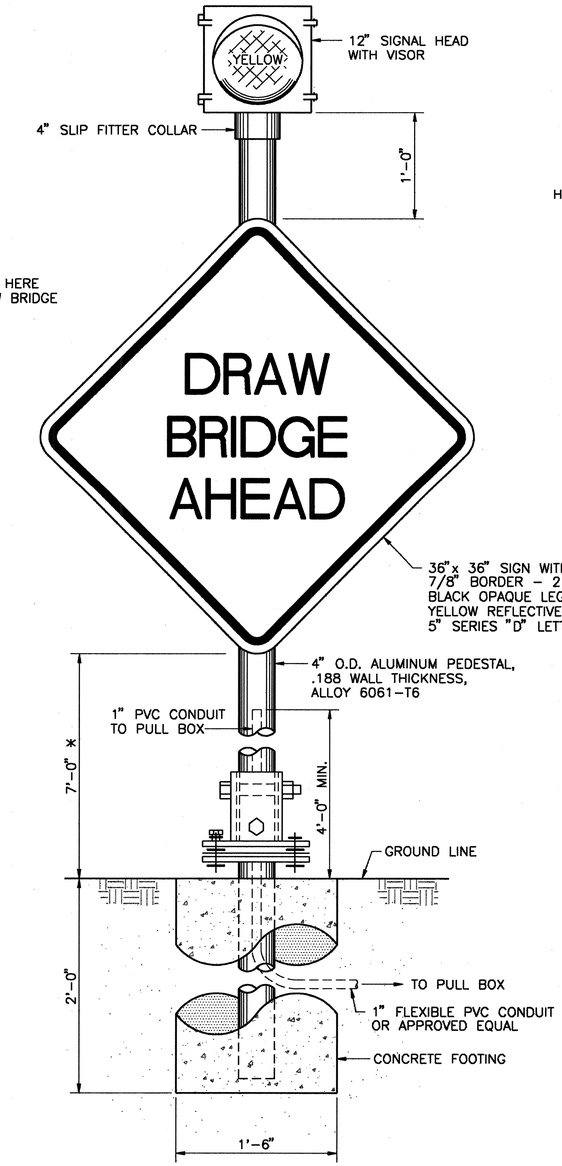
SHEET TITLE:
TRAFFIC CONTROL DEVICES FOR MOVABLE SPAN BRIDGE SIGNALS

PROJECT NAME:
BECKETT BRIDGE REPAIRS

SHEET
A-5

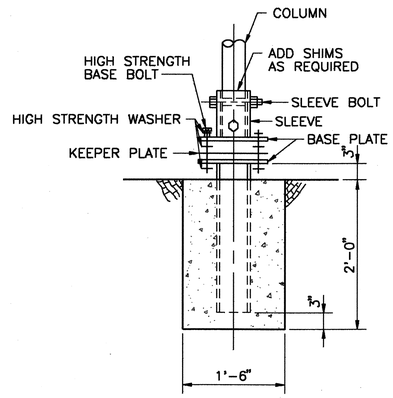


"STOP HERE ON RED" SIGN
(SEE PLANS FOR BRIDGE MOUNTING DETAILS)

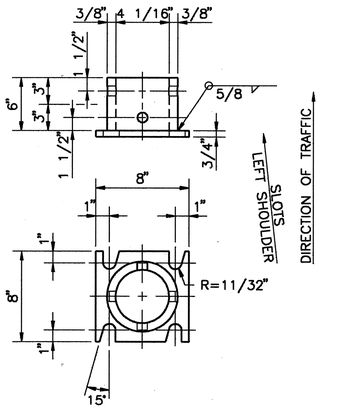


"DRAW BRIDGE AHEAD" SIGN

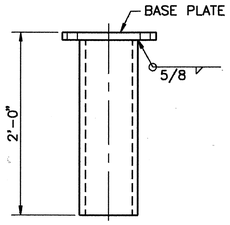
* = MEASURED FROM THE BOTTOM OF THE SIGN TO THE NEAR EDGE OF THE PAVEMENT. HORIZONTAL DISTANCE BETWEEN EDGE OF PAVEMENT AND INSIDE EDGE OF SIGN WILL VARY WITH CONDITION AT JOB SITE.



BASE DETAIL

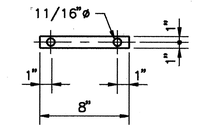


SLEEVE AND BASE PLATE DETAILS



STUB SIZE EQUALS MIN. SLEEVE SIZE OR LONGER

STUB DETAIL



20 GA. OR 0.040" THICK ALUMINUM STRIP - 2 REQ'D. PER BASE

BOLT KEEPER DETAIL

SIGN POST BREAK AWAY DETAILS

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Drawn by	KTL	5-95
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2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

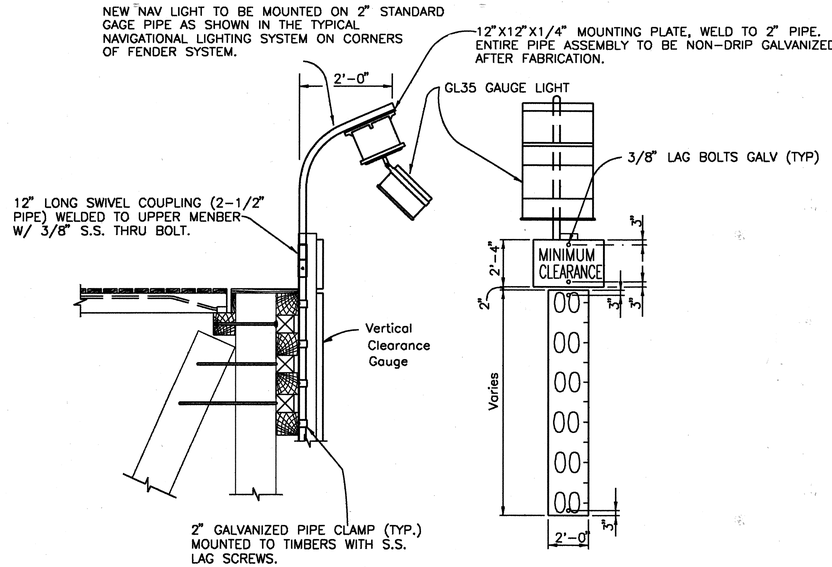
PINELLAS COUNTY FLORIDA

PINELLAS COUNTY
DEPARTMENT OF
PUBLIC WORKS

SHEET TITLE:
TRAFFIC CONTROL DEVICES FOR MOVABLE SPAN BRIDGE SIGNALS

PROJECT NAME:
BECKETT BRIDGE REPAIRS

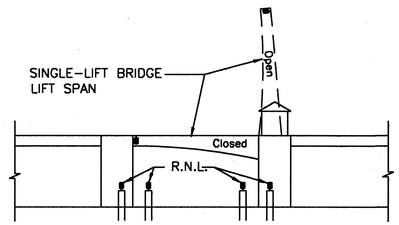
SHEET
A-6

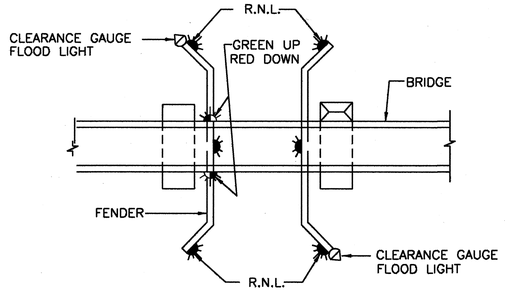


GAUGE LIGHT

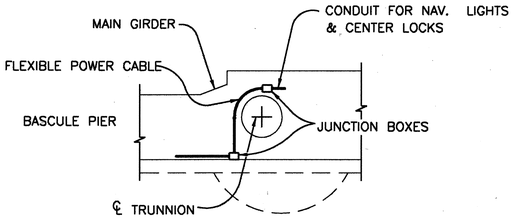
CLEARANCE GAUGE DETAILS

NUMBERED CLEARANCE GAUGE TO BE FURNISHED BY THE CONTRACTOR. CONTRACTOR SHALL VERIFY IN FIELD THAT THE CLEARANCE OF THE BRIDGE AGREES WITH READINGS OF TARGET. IF NOT, THE TARGET WILL BE RESET.



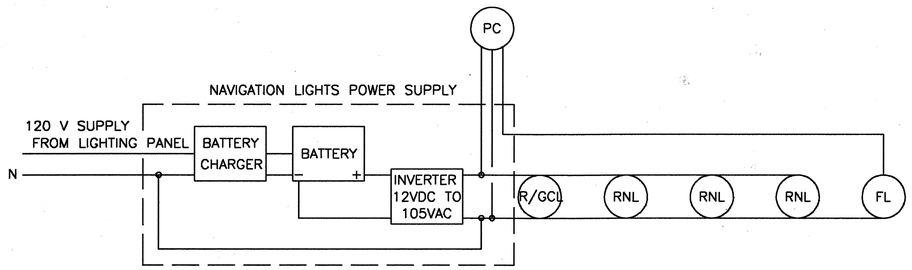


TYPICAL BASCULE BRIDGE
NAVIGATION LIGHT SYSTEM
SINGLE LEAF



BASCULE BRIDGE FLEXIBLE
CABLE ARRANGEMENT

NOTE: SEE FENDER SYSTEM DRAWINGS & CONTROL HOUSE DRAWINGS FOR THEIR ACTUAL CONFIGURATION & LOCATION.



1. OUTPUT VOLTAGE SHALL BE ADJUSTABLE BETWEEN 120 VOLTS.
2. BATTERY SHALL BE SIZED FOR 12 HOURS OF FULL, CONTINUOUS LOAD.
3. INVERTER SHALL BE SIZED FOR 1.25 TIMES THE CALCULATED LOAD.
4. BATTERY CHARGER SHALL BE RATED TO FULLY RECHARGE BATTERIES IN 12 HOURS.
5. EQUIP EACH NAV. LIGHT CIRCUIT WITH A LAMP-OUT INDICATOR.

R/GCL – RED/GREEN CHANNEL LIGHT RNL – RED NAVIGATION LIGHT
FL – CLEARANCE GAUGE FLOODLIGHT PC – PHOTOCELL

TYPICAL LAYOUT OF NAVIGATION LIGHTS
FOR BASCULE BRIDGE

NOTES FOR BASCULE BRIDGES

RED NAVIGATION LIGHT: 180°, 120 VOLT, 60 WATT, MINIMUM 155 MM FRESNEL LENS, VANDAL PROOF. LUMINOUS INTENSITY FOR HORIZONTAL BEAM 30 CANDELA (MIN.). VERTICAL DIVERGENCE AT 15 CD INTENSITY, 6° MAXIMUM. SHALL BE EQUIPPED WITH A DUAL LAMP AND TRANSFER RELAY OPTION AND BULBS RATED MINIMUM 32,000 HOURS EXTENDED LIFE @ 110 VOLTS. LANTERN SHALL BE MOUNTED ON A STAINLESS STEEL POST INCLUDING FITTINGS WITH A TOTAL HEIGHT OF 24" ABOVE FENDER.

RED/GREEN CHANNEL LIGHT: RED 180° LENS, GREEN 180° LENS, 120 VOLT, 60 WATT, MINIMUM 155 MM FRESNEL LENS. LUMINOUS INTENSITY FOR HORIZONTAL BEAM 30 CANDELA (MIN.). VERTICAL DIVERGENCE AT 15 CD INTENSITY, 6° MAXIMUM. SHALL BE EQUIPPED WITH A DUAL LAMP AND TRANSFER RELAY OPTION AND BULBS RATED MINIMUM 32,000 HOURS EXTENDED LIFE @ 110 VOLTS. EQUIP WITH A PIVOT MOUNT AND RETRIEVAL CHAIN SO THAT THE BASE CAN BE MOUNTED OUTSIDE OF BRIDGE BARRIER AND LANTERN CAN BE SERVICED BY REACHING OVER THE BARRIER FROM INSIDE. HANGER STEM SHALL BE LONG ENOUGH SO THAT LANTERN DOES NOT EXTEND BELOW THE BOTTOM OF THE GIRDER.

CLEARANCE GAUGE LIGHT: ANGLE OF ILLUMINATION DEPENDING ON FIXTURE CONTOUR. BALLAST WITH HIGH POWER FACTOR USING A 35 WATT HIGH PRESSURE SODIUM LAMP. ENCLOSURE TO BE NEMA 3R CAST ALUMINUM HOUSING WITH EPOXY FINISH ENAMEL. JUNCTION BOX SHALL BE HEAVY CAST ALUMINUM WITH HEAVY CAST COVER, ALL HARDWARE SHALL BE STAINLESS STEEL. FIXTURE SHALL BE B&B #GL-35-115V OR APPROVED EQUAL. VOLTAGE SHALL BE 115 VOLTS, 60 HZ.

NAVIGATION LIGHT SYSTEM SHALL COMPLY WITH THE LATEST EDITION OF THE CODE OF FEDERAL REGULATIONS, NAVIGATION AND NAVIGABLE WATERS, CFR 33 PART 118, BRIDGE LIGHTING AND OTHER SIGNALS.

THE NAVIGATION LIGHT SYSTEM SHALL HAVE ITS OWN ELECTRICAL SYSTEM, INDEPENDENT FROM OTHER LIGHTING SYSTEMS.

R:\94085\CADD\BRIDGE
C:\WORK\510 08/07/95 15:03:39 ALC PRODUCED BY DSA CADD SYSTEM

REVISIONS			REVISIONS		
Date	By	Description	Date	By	Description

SEAL:

	Names	Dates
Drawn by	AEV	5-95
Checked by	TJF	5-95
Designed by	GMM	5-95
Checked by	RMC	5-95
Approved by	T.J. FARRELL	

Gene M. Mosmiller

DSA GROUP INC.

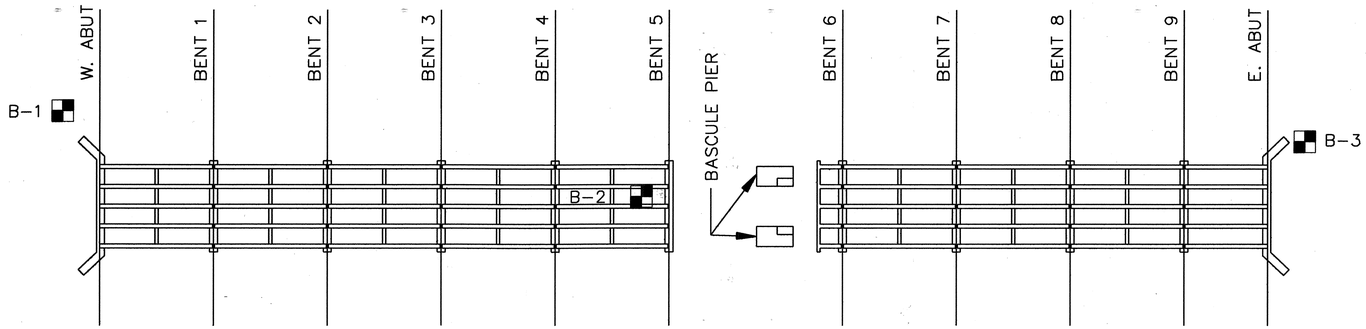
DSA GROUP, INC.
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

PINELLAS COUNTY
DEPARTMENT OF
PUBLIC WORKS

SHEET TITLE: NAVIGATION LIGHT SYSTEM DETAILS

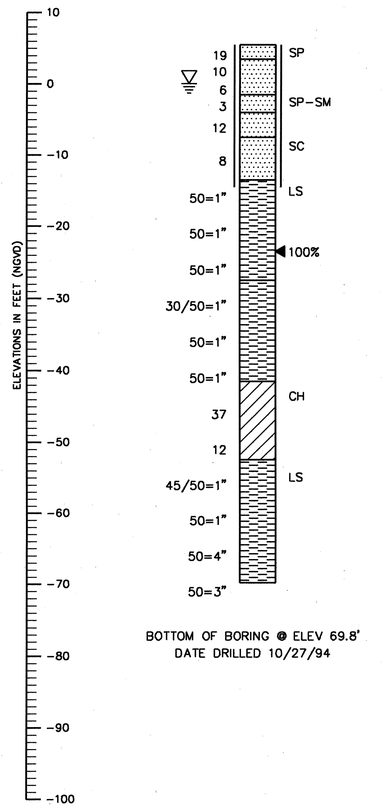
PROJECT NAME: BECKETT BRIDGE REPAIRS

SHEET A-7



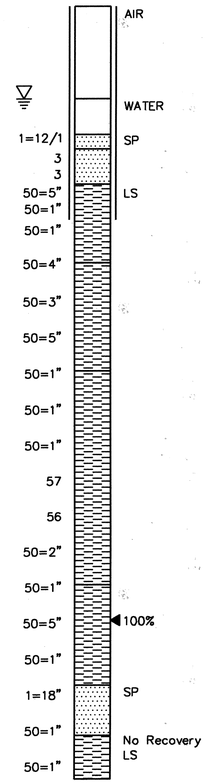
PLAN

B-1



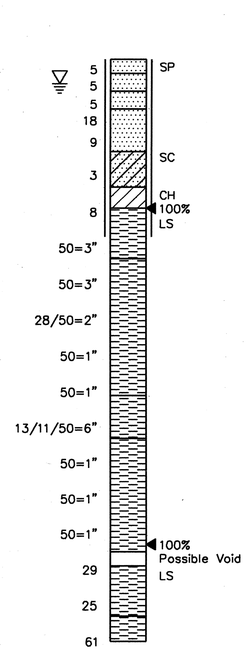
BOTTOM OF BORING @ ELEV 69.8'
DATE DRILLED 10/27/94

B-2

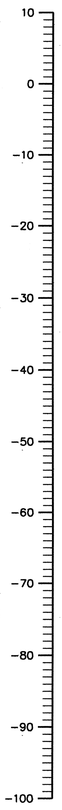


BOTTOM OF BORING @ ELEV 95.1'
DATE DRILLED 10/22/94

B-3



BOTTOM OF BORING @ ELEV 78.0'
DATE DRILLED 10/20/94



LEGEND

= SP, SP-SM and SP-SC, Sands and slightly clayey sands

= CH, Inorganic clays of low plasticity

= SC, Clayey sands and very sandy clays

= LS, Limestone

GENERAL NOTES

DRILL AND PENETRATION TESTING WERE PERFORMED IN ACCORDANCE WITH ASTM D 1586. NUMBER TO LEFT OF BORING INDICATES BLOWS OF 1 3/8" I.D., 2" O.D. SPLIT-SPOON FOR 12" OF PENETRATION (UNLESS OTHERWISE NOTED) WITH A 140 LB. HAMMER DROPPED 30 INCHES.

THE BORING LOGS SHOWN REPRESENT SUBSURFACE CONDITIONS WITHIN THE BOREHOLE AT THE TIME OF DRILLING. NO WARRANTY AS TO THE SUBSURFACE CONDITION, STRATA DEPTH OR SOIL CONSISTENCY BETWEEN OR OUTSIDE BORING LOCATIONS IS EXPRESSED OR IMPLIED BY THIS DRAWING.

ELEVATIONS SHOWN ARE APPROXIMATED BY WATER LEVEL AND WATER TABLE MEASURED AT TIME AND DATE BORINGS WERE COMPLETED.

REFER TO FINAL REPORT FOR ADDITIONAL BORING INFORMATION.

CREW CHIEF: SPOON
DRILLER: PATTERSON
DRILL RIG TYPE: FAILING 250

LEGEND

= Water Table @ end of drilling

= Casing used

= Shelby Tube

100% = Percent Loss of Circulation

ENVIRONMENTAL CLASSIFICATION

SUBSTRUCTURE: CORROSIVE (EXTREMELY AGGRESSIVE)
SUBSTRUCTURE: CORROSIVE (EXTREMELY AGGRESSIVE)

Granular Materials– Relative Density	SPT (Blows/Ft)
Very Loose	Less than 4
Loose	4 – 10
Medium Dense	11 – 30
Dense	31 – 50
Very Dense	Greater than 50

Silts and Clays– Consistency	SPT (Blows/Ft)
Very Soft	Less than 2
Soft	2 – 4
Firm	5 – 8
Stiff	9 – 15
Very Stiff	16 – 30
Hard	Greater than 30

R:\940852\CADD\BRIDGE SOILBORE

REVISIONS Date	By	Description	REVISIONS Date	By	Description

SEAL:

	Names	Dates
Drawn by	TEJ	11-94
Checked by	LDS	11-94
Designed by	LDS	11-94
Checked by	KDB	11-94
Approved by	K. D. BENNETT	

8/15/95

WILLIAMS EARTH SCIENCES, INC.
CORPORATE OFFICE:
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Largo: (813) 541-3444 FAX: (813) 541-1510
Jacksonville: (904) 262-8852 FAX: (904) 282-8884
Panama City: (904) 747-9419 FAX: (904) 763-2454

PINELLAS COUNTY DEPARTMENT OF PUBLIC WORKS

SHEET TITLE: REPORT OF CORE BORINGS

PROJECT NAME: BECKETT BRIDGE REPAIRS

SHEET A-8

TRAFFIC CONTROL NOTES

GENERAL NOTES:

1. THE CONTRACTOR SHALL, AT ALL TIMES, ADHERE TO THE REQUIREMENTS SET FORTH IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD, 1988) AND FDOT'S ROADWAY AND TRAFFIC DESIGN STANDARDS (JANUARY 1994, AS AMENDED).

2. IT IS NOT THE INTENT OF THESE PLANS TO SHOW ALL TEMPORARY DRAINAGE AND INCIDENTAL CONSTRUCTION NECESSARY TO MAINTAIN TRAFFIC. THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE TEMPORARY DRAINAGE. THERE WILL BE NO DIRECT PAY FOR THIS WORK.

3. THE WORK AREA SHALL BE PROTECTED BY BARRIERS, WARNING DEVICES, PAVEMENT MARKINGS AND SIGNS SHOWN IN THE TRAFFIC CONTROL PLANS AND AS DIRECTED BY THE ENGINEER. ALL SIGNING AND TEMPORARY PAVEMENT MARKINGS FOR A PHASE SHALL BE INSTALLED AND APPROVED BY THE ENGINEER BEFORE CONSTRUCTION OF THAT PHASE COMMENCES AND SHALL BE MAINTAINED IN ACCORDANCE WITH INDEX 600.

4. WHENEVER CONSTRUCTION EQUIPMENT IS BEING DRIVEN OR TRANSPORTED ON THE OPEN TRAVEL LANES. THE CONTRACTOR SHALL UTILIZE FDOT STANDARD INDEX 627.

5. DESIRABLE LANE WIDTHS FOR MAINTENANCE OF TWO-WAY TRAFFIC SHOULD BE 10' BUT NOT LESS THAN LANE WIDTHS OF THE EXISTING FACILITY.

6. THE LOCATION OF SIGNS, AND BARRICADES ARE APPROXIMATE ONLY AND SHALL BE PLACED ACCORDING TO CONSTRUCTION REQUIREMENTS WITH THE APPROVAL OF THE ENGINEER IN CHARGE.

7. THE CONTRACTOR SHALL PLACE TYPE I OR TYPE II BARRICADES TO OUTLINE THE RADIUS AREA FOR DRIVEWAYS FOR ACCESS AND TO PREVENT TRAFFIC IN THE CONSTRUCTION AREA.

8. TRAFFIC SHALL BE MAINTAINED ON PAVED SURFACES AT ALL TIMES.

9. THE CONTRACTOR SHALL NOTIFY ALL LOCAL LAW ENFORCEMENT AGENCIES AND MEDIA APPROXIMATELY ONE MONTH PRIOR TO THE BRIDGE CLOSURE.

10. CONFLICTING OR EXISTING PAVEMENT MARKINGS SHALL BE REMOVED BY WATERBLASTING OR OTHER METHODS APPROVED BY THE ENGINEER. ALL EXISTING PAVEMENT MARKINGS OUTSIDE THE LIMITS OF CONSTRUCTION WHICH ARE ALTERED SHALL BE REPLACED UPON COMPLETION OF THE PROJECT. ALL COSTS FOR REMOVAL SHALL BE INCLUDED IN THE BID PRICE FOR MAINTENANCE OF TRAFFIC. THE REPLACEMENT OF MARKINGS SHALL BE PAID FOR UNDER THE APPROPRIATE BID ITEM.

11. REGULATORY SPEEDS OF THE EXISTING ROADWAYS SHALL BE MAINTAINED. WHEN NECESSARY, SUPPLEMENTAL SIGNS SHALL BE ADDED WITHIN THE LIMITS OF THE DETOUR.

12. EXISTING SIGNS THAT CONFLICT WITH THE DETOUR ROUTE SHALL BE ADJUSTED, COVERED OR REMOVED DURING THE DETOUR ROUTE AND REPLACED IN THEIR ORIGINAL CONDITION UPON COMPLETION.

13. THE DETOUR ROUTE MAY AFFECT SOME SIGNALIZED INTERSECTIONS. AT THOSE LOCATIONS THE CONTRACTOR SHALL COORDINATE WITH THE CITY OF TARPON SPRINGS OR PINELLAS COUNTY TRAFFIC OPERATIONS TO DETERMINE IF ANY NECESSARY SEQUENCE ADJUSTMENTS ARE TO BE MADE DURING THE DETOUR.

14. UPON COMPLETION OF THE DETOUR ROUTE THE CONTRACTOR SHALL RESTORE THE ENTIRE ROUTE BACK TO ITS ORIGINAL CONDITION. ALL COSTS SHALL BE INCLUDED IN THE BID ITEM # 102-1, MAINTENANCE OF TRAFFIC (LUMP SUM).

15. THE CONTRACTOR SHALL MAINTAIN A SAFE PASSAGE THROUGH THE CONSTRUCTION AREA AT ALL TIMES FOR PEDESTRIANS IN ACCORDANCE WITH INDEX # 660, WITH THE EXCEPTION OF THE BRIDGE CLOSURE, WHERE PEDESTRIANS SHALL NOT BE ALLOWED TO CROSS THE BRIDGE. ALL COSTS ASSOCIATED SHALL BE INCLUDED IN THE BID ITEM 102-1, MAINTENANCE OF TRAFFIC (LUMP SUM).

FDOT SPECIAL USE PERMIT STIPULATIONS:

1. ALL SIGNS ERECTED ON FDOT R/W SHALL BE ERECTED PER FDOT SIGN INDEX #17302, COSTS TO BE INCLUDED IN MAINTENANCE OF TRAFFIC LUMP SUM, BID ITEM 102-1.

2. NO SIGN PLACEMENT SHALL BE PERMITTED WITHIN THE LIMITS OF THE PEDESTRIAN SIDEWALK AREAS. SHOULD SUCH SIGN PLACEMENT BECOME NECESSARY PRIOR APPROVAL OF THE LOCAL MAINTENANCE ENGINEER IS NECESSARY.

3. ANY DAMAGED CONCRETE CAUSED BY SIGN INSTALLATION SHALL BE REMOVED AND REPLACED BY SAW OUT OR TOOLED AT 5' INTERVALS (BY SECTION) WITH EXPANSION REQUIRED AT ALL COLD JOINTS, COSTS TO BE INCLUDED IN THE MAINTENANCE OF TRAFFIC LUMP SUM BID ITEM # 102-1.

4. THIS LOCAL MAINTENANCE OFFICE SHALL BE NOTIFIED 48 HOURS PRIOR TO IMPLEMENTATION OF THE MAINTENANCE OF TRAFFIC PLAN ON FDOT R/W :

FLORIDA DEPARTMENT OF TRANSPORTATION
5211 ULMERTON ROAD
CLEARWATER, FLORIDA 34620
PH. (813) 560-5101

TRAFFIC CONTROL NOTES

THE DETOUR SHALL REMAIN IN EFFECT FOR 120 CALENDAR DAYS AND THE TOTAL PROJECT CALENDAR DAYS ARE 180. THEREFORE MORE THAN ONE OPERATION MAY BE REQUIRED TO BE UNDER CONSTRUCTION AT A TIME IN ORDER TO COMPLETE THIS PROJECT WITH THESE CONSTRAINTS.

PHASE I

1. THE EXISTING VEHICULAR TRAFFIC PATTERN ACROSS BECKETT BRIDGE SHALL REMAIN THE SAME DURING THE FOLLOWING CONSTRUCTION ACTIVITIES.

2. ADVANCE SIGNING FOR PHASE I SHALL CONSIST OF THE FOLLOWING AND SHALL BE PLACED PRIOR TO PHASE I CONSTRUCTION AND REMOVED FOR PHASE II CONSTRUCTION:

2 - " ROAD CONSTRUCTION 1000 FT " W20 1B
2 - " ROAD CONSTRUCTION 500 FT " W20 1A

THESE SIGNS SHALL BE PLACED PRIOR TO BECKETT BRIDGE AND SUPPLEMENTED WITH A HIGH INTENSITY LIGHT AND AN 18"x18" ORANGE FLAG.

2 - " END CONSTRUCTION " G20 2

THESE SIGNS SHALL BE PLACED 500 FEET BEYOND BECKETT BRIDGE.

3. THE CONTRACTOR SHALL COORDINATE NAVIGATIONAL TRAFFIC WITH THE APPROPRIATE AGENCIES DURING THESE CONSTRUCTION ACTIVITIES. REFER TO THE SPECIFICATIONS FOR AGENCIES RESPONSIBLE FOR REGULATION OF THIS WATERWAY.

4. THERE SHALL BE A BRIDGE OPERATOR PRESENT DURING THIS PHASE OF WORK.

5. THE FOLLOWING CONSTRUCTION ACTIVITIES SHALL BE PERFORMED FROM A BARGE:

CLEAN AND PATCH SPALLS AND HONEYCOMBS IN PILES, BEAMS AND UNDERSIDE DECK

INSTALL CRUTCH BENTS
FURNISH AND INSTALL NEW NAVIGATION LIGHTS
PROVIDE NEW SUBMARINE CABLE
INSTALL BASCULE PIER STABILIZER
PATCH HONEYCOMBS AND SEAL CRACKS IN BASCULE PIER

PHASE II

1. THE CONTRACTOR SHALL REMOVE OR COVER CONFLICTING EXISTING SIGNS AND PLACE DETOUR SIGNS (SEE PLAN VIEW) ALONG THE DETOUR ROUTE IN ACCORDANCE WITH F.D.O.T. INDEX #602, PRIOR TO REROUTING THE EXISTING TRAFFIC.

2. REROUTE TRAFFIC TO THE DETOUR ROUTE.

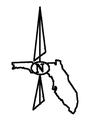
3. DURING DISABLED MACHINERY THE BASCULE LEAF SHALL BE MAINTAINED IN AN OPEN POSITION AND SECURED, A BRIDGE OPERATOR SHALL NOT BE NECESSARY DURING THIS PHASE.

4. THE FOLLOWING CONSTRUCTION ACTIVITIES SHALL BE PERFORMED DURING THE DETOUR :

- INSTALL NEW "DRAWBRIDGE AHEAD" SIGNS
- INSTALL NEW "STOP AHEAD" SIGNS
- REPAIR SLOPE PROTECTION
- DRIVE SHEET PILING
- CONSTRUCT NEW PEDESTALS AND NEW TRAFFIC GATES
- REPAIR CONCRETE DECK AND INSTALL ARMORED JOINT
- INSTALL NEW CONTROL SYSTEM
- REMOVE EXISTING CONTROL SYSTEM AND ACCESS STAIR TO BASCULE PIER
- INSTALL NEW CONTROL PLATFORM AND ACCESS LADDER TO BASCULE PIER
- CLEAN AND SEAL OPEN JOINTS
- EXPANSION JOINTS
- REMOVE AND REPLACE COUNTER WEIGHT
- PATCH SPALLS IN CONCRETE HANDRAIL
- REMOVAL OF PAINT
- PAINT
- COMPLETE NECESSARY REPAIR, REPLACEMENT AND REMOVAL OF MACHINERY
- PAVEMENT MARKINGS

PHASE III

1. THE CONTRACTOR SHALL REMOVE SIGNS AND ANY INCIDENTAL ITEMS ALONG THE DETOUR ROUTE IN ACCORDANCE WITH F.D.O.T. INDEX # 602.



IMPORTANT !!!

REQUIRED BRIDGE OPENINGS:

MARINE TRAFFIC:
THE BRIDGE LEAF IS REQUIRED TO BE OPEN TO ALLOW BOAT TRAFFIC TO PASS ON DECEMBER 16, 1995.

THE BRIDGE IS REQUIRED TO BE OPEN TO ALLOW BOTH VEHICULAR AND PEDESTRIAN TRAFFIC TO CROSS ON JANUARY 6, 1996.

SUMMARY OF MAINTENANCE OF TRAFFIC
(PAY ITEM 102-1)

ITEM	UNIT	QUANTITY P	QUANTITY F
SPECIAL SIGNS < 12 SF	EA	60	
SPECIAL SIGNS 12-25 SF	EA	18	
CONSTRUCTION SIGNS < 9 SF - 107 @120 DAYS	EA	12840	
MISC. CONCRETE	CY	1	

R:\84085\CADD\DETOUR
C:\WORK\7DGNOTES 08/08/95 10:14:15 AEV PRODUCED BY DSA CADD SYSTEM

BRIDGE NO. 154000

REVISIONS Date	By	Description	REVISIONS Date	By	Description

SEAL:

	Names	Dates
Drawn by	BST	5-95
Checked by	AAS	5-95
Designed by	BST	5-95
Checked by	AAS	5-95
Approved by	ALAN SOROORY	

DSA GROUP INC.

DSA GROUP, INC.
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

PINELLAS COUNTY DEPARTMENT OF PUBLIC WORKS

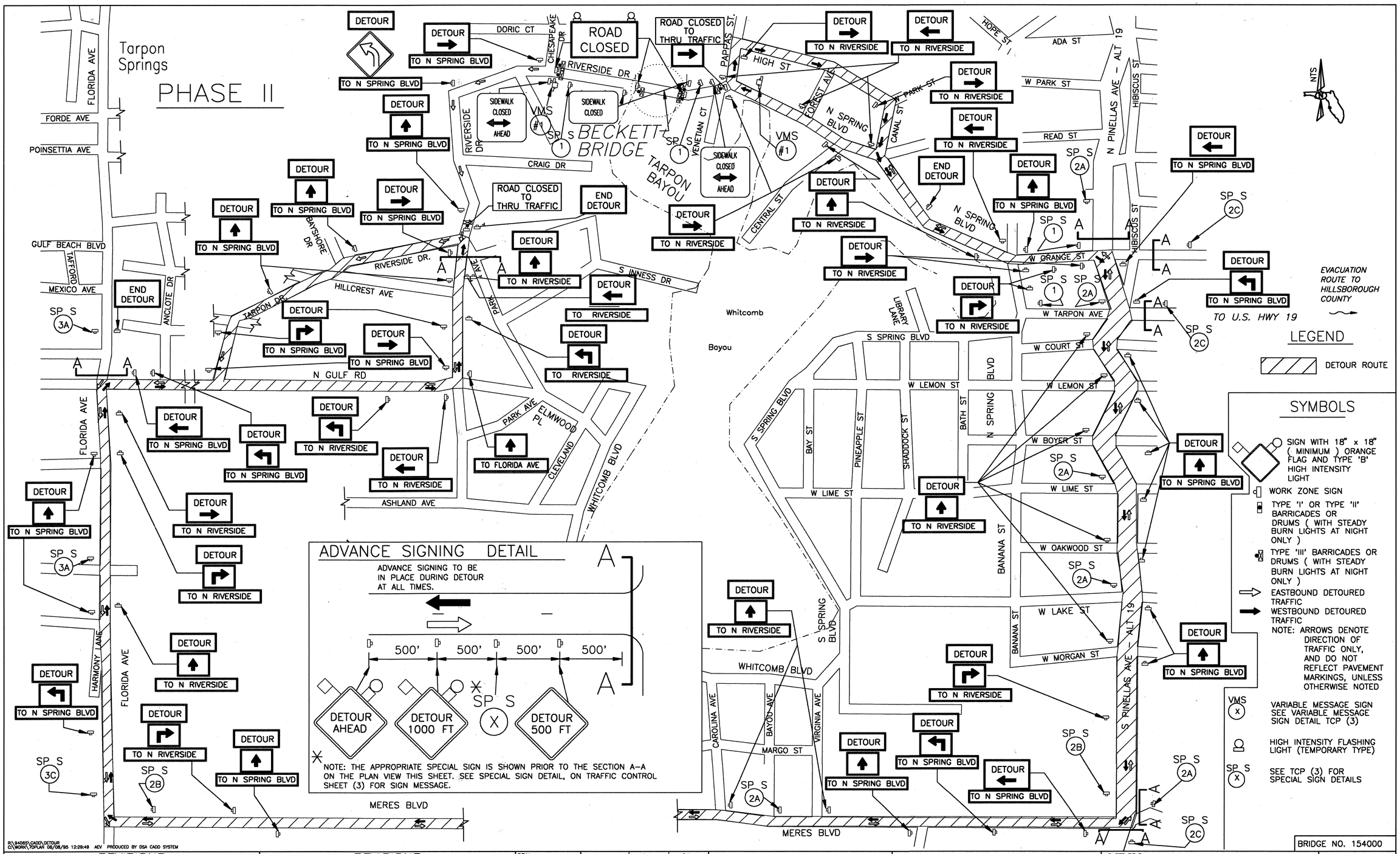
SHEET TITLE: TRAFFIC CONTROL PLAN (1)

PROJECT NAME: BECKETT BRIDGE REPAIRS

Drawing No. A-9

Tarpon Springs

PHASE II



ADVANCE SIGNING DETAIL

ADVANCE SIGNING TO BE IN PLACE DURING DETOUR AT ALL TIMES.

✳ NOTE: THE APPROPRIATE SPECIAL SIGN IS SHOWN PRIOR TO THE SECTION A–A ON THE PLAN VIEW THIS SHEET. SEE SPECIAL SIGN DETAIL, ON TRAFFIC CONTROL SHEET (3) FOR SIGN MESSAGE.

EVACUATION ROUTE TO HILLSBOROUGH COUNTY

TO U.S. HWY 19

LEGEND

DETOUR ROUTE

SYMBOLS

- SIGN WITH 18" x 18" (MINIMUM) ORANGE FLAG AND TYPE 'B' HIGH INTENSITY LIGHT
- WORK ZONE SIGN
- TYPE 'I' OR TYPE 'II' BARRICADES OR DRUMS (WITH STEADY BURN LIGHTS AT NIGHT ONLY)
- TYPE 'III' BARRICADES OR DRUMS (WITH STEADY BURN LIGHTS AT NIGHT ONLY)
- EASTBOUND DETOURED TRAFFIC
- WESTBOUND DETOURED TRAFFIC
- NOTE: ARROWS DENOTE DIRECTION OF TRAFFIC ONLY, AND DO NOT REFLECT PAVEMENT MARKINGS, UNLESS OTHERWISE NOTED
- VMS (X) VARIABLE MESSAGE SIGN SEE VARIABLE MESSAGE SIGN DETAIL TCP (3)
- HIGH INTENSITY FLASHING LIGHT (TEMPORARY TYPE)
- SP S (X) SEE TCP (3) FOR SPECIAL SIGN DETAILS

BRIDGE NO. 154000

R:\84065\CADD\DETOUR
C:\WORK\7DPLAN 08/08/95 12:29:49 AEV PRODUCED BY DSA CADD SYSTEM

REVISIONS			REVISIONS		
Date	By	Description	Date	By	Description

SEAL:

	Names	Dates
Drawn by	BST	5-95
Checked by	AAS	5-95
Designed by	BST	5-95
Checked by	AAS	5-95
Approved by	ALAN SOROORY	

DSA GROUP INC.

DSA GROUP, INC.
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

PINELLAS COUNTY
DEPARTMENT OF
PUBLIC WORKS

SHEET TITLE: TRAFFIC CONTROL PLAN (2)

PROJECT NAME: BECKETT BRIDGE REPAIRS

Drawing No. A-10

VARIABLE MESSAGE SIGN DETAIL

VMS #1 PRIOR

VARIABLE MESSAGE SIGN	
DISPLAY 1	DISPLAY 2
BRIDGE WILL BE CLOSED	SEPT XX THROUGH JAN XX

STEP 1

THIS SIGN SHALL BE IN PLACE 10 DAYS PRIOR TO BRIDGE CLOSING.THE MESSAGE SHALL CHANGE TO THE STEP 2 MESSAGE DURING THE BRIDGE CLOSURE.

VMS #1 DURING

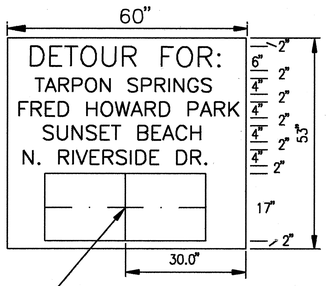
VARIABLE MESSAGE SIGN		
DISPLAY 1	DISPLAY 2	DISPLAY 3
BECKETT BRIDGE CLOSED	USE ALT ROUTE	FOLLOW DETOUR

STEP 2
TO BE IN PLACE DURING DETOUR

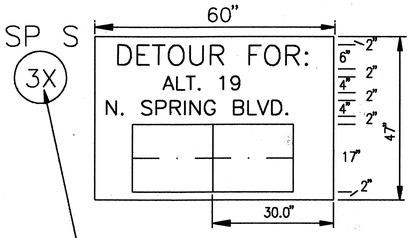
GENERAL NOTES

1. SEE SYMBOL ON PLAN VIEW FOR LOCATION,. SEE TCP (2).
2. ANY ADJUSTMENTS TO MESSAGES SHALL BE INCLUDED IN THE COST OF THE VARIABLE MESSAGE SIGN (TEMP) BID ITEM # 102-99.

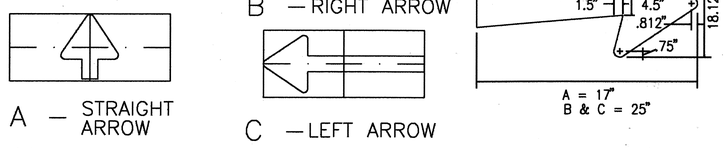
SP S 2X



SP S 3X



DETAILS



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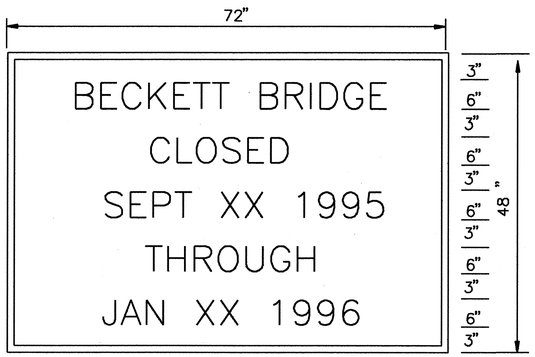
SPECIAL SIGN DETAIL

SP S 1



6" D SERIES LETTERING

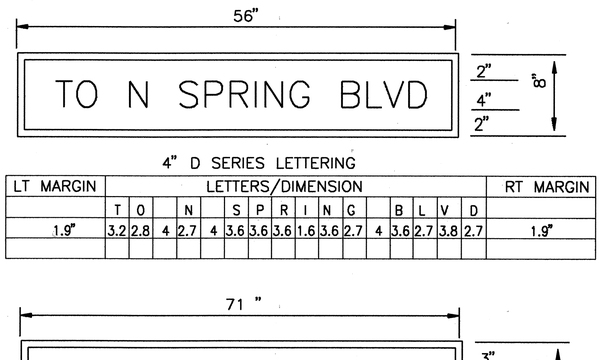
LT MARGIN	LETTERS/DIMENSION	RT MARGIN
	B E C K E T T 6 B R I D G E	
2.45"	5.5 4.8 5.2 5.3 4.4 4.4 3.7 6 5.5 5.5 2.4 5.2 5.5 3.7	2.45"
	C L O S E D	
21.2"	5.2 4.8 5.3 5.5 4.8 4.0	21.2"
	S E P T X X 1 9 9 5	
7.4"	5.5 4.8 4.8 3.7 6 4.8 4.0 6 2.9 5.2 5.5 4.0	7.4"
	T H R O U G H	
17.95"	4.8 5.5 5.2 5.6 5.5 5.5 4.0	17.95"
	J A N X X 1 9 9 6	
9.45"	4.9 6.1 4.0 6 4.8 4.0 6 2.9 5.2 5.2 4.0	9.45"

6" D SERIES LETTERING

LT MARGIN	LETTERS/DIMENSION	RT MARGIN
	D E T O U R F O R :	
2.9"	5.5 4.4 4.8 5.6 5.5 4.0 6 4.8 5.6 4.0 4.0	2.9"

4" D SERIES LETTERING

LT MARGIN	LETTERS/DIMENSION	RT MARG
	T A R P O N S P R I N G S	
6.8"	2.7 4.1 3.6 3.4 3.8 2.7 4 3.6 3.6 3.6 1.6 3.6 3.4 2.7	6.8"
	F R E D H O W A R D P A R K	
2.3"	3.2 3.6 3.2 2.7 4 3.6 3.6 3.8 4.1 3.6 2.7 4 2.9 4.1 3.6 2.8	2.2"
	S U N S E T B E A C H	
9.8"	3.6 3.6 3.6 3.6 2.9 2.4 4.0 3.6 2.9 4.1 3.4 2.7	9.8"
	N R I V E R S I D E D R	
8.2"	2.7 4.0 3.6 1.4 3.8 3.2 3.4 3.6 1.6 3.6 2.4 4.0 3.6 2.7	8.2"
	A L T 1 9	
21.1"	4.1 2.7 2.4 4.0 1.9 2.7	21.1"
	N S P R I N G B L V D	
8.9"	2.7 4.0 3.6 3.6 3.6 1.6 3.6 2.7 4.0 3.6 2.7 3.8 2.7	8.9"



4" D SERIES LETTERING

LT MARGIN	LETTERS/DIMENSION	RT MARGIN
	T O N S P R I N G B L V D	
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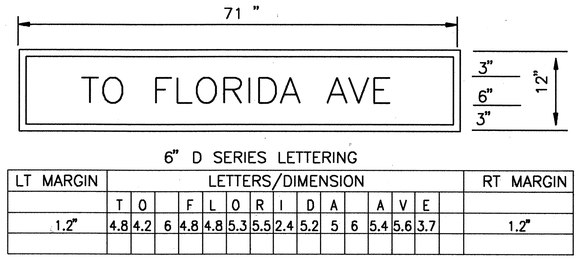

6" D SERIES LETTERING

LT MARGIN	LETTERS/DIMENSION	RT MARGIN
	T O F L O R I D A A V E	
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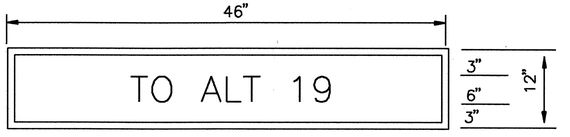


6" D SERIES LETTERING

LT MARGIN	LETTERS/DIMENSION	RT MARGIN
	T O A L T 1 9	
2.15"	4.8 4.2 6 6.1 4.0 3.7 6 2.9 4.0	2.15"

4" D SERIES LETTERING

LT MARGIN	LETTERS/DIMENSION	RT MARGIN
	T O N R I V E R S I D E	
1.85"	3.2 2.8 4 2.7 4 3.6 1.4 3.8 3.2 3.4 3.6 1.6 3.6 2.4	1.85"

GENERAL NOTES

1. ALL SPECIAL SIGNS CONSIST OF BLACK MESSAGE AND BORDER ON REFLECTORIZED ORANGE BACKGROUND
2. ALL COSTS FOR FABRICATION OF THESE SIGNS. ARE TO BE INCLUDED IN THE PRICE FOR MAINTENANCE OF TRAFFIC (ITEM 102-1, LUMP SUM).
3. SEE SYMBOL ON PLAN VIEW FOR LOCATION,. SEE TCP (2).

BRIDGE NO. 154000

REVISIONS			REVISIONS			SEAL:
Date	By	Description	Date	By	Description	

	Names	Dates
Drawn by	BST	5-95
Checked by	AAS	5-95
Designed by	BST	5-95
Checked by	AAS	5-95
Approved by	ALAN SOROORY	

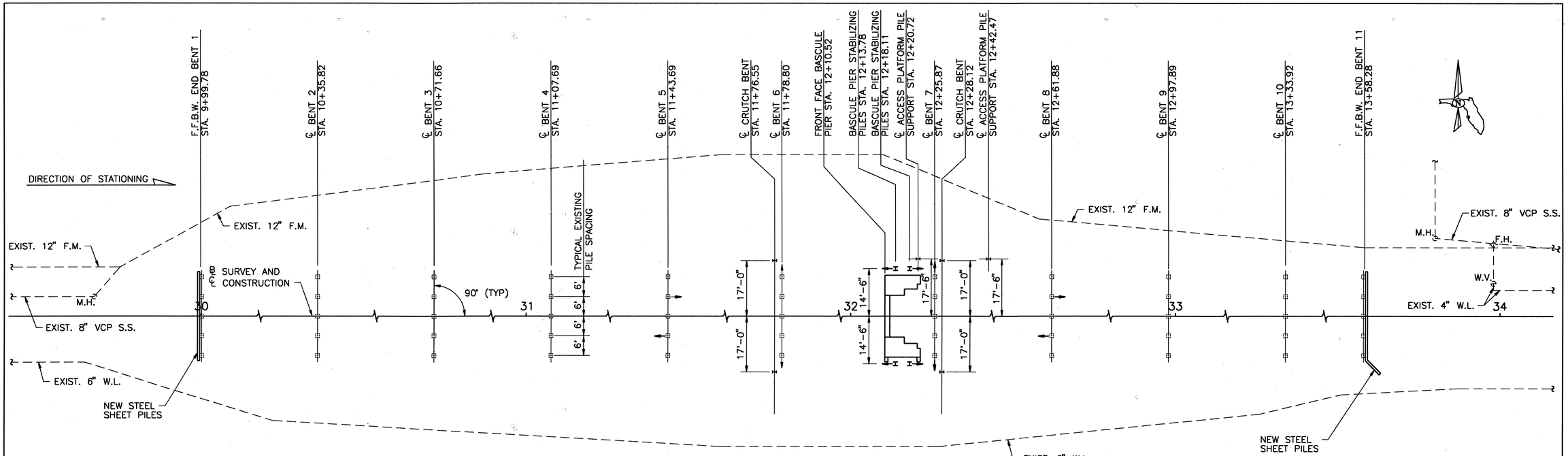
DSA GROUP INC.
DSA GROUP, INC.
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

PINELLAS COUNTY DEPARTMENT OF PUBLIC WORKS

SHEET TITLE: TRAFFIC CONTROL PLAN (3)

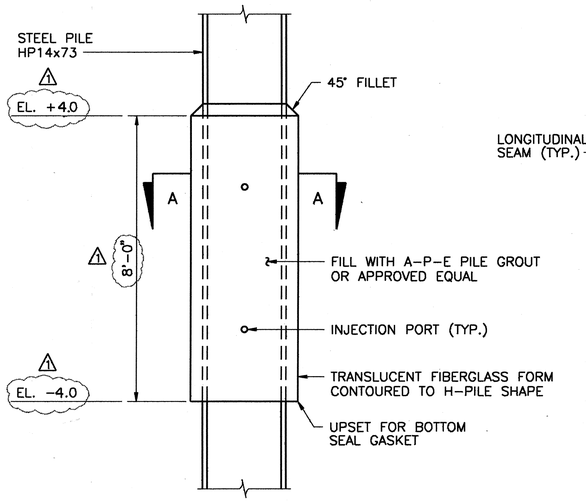
PROJECT NAME: BECKETT BRIDGE REPAIRS

Drawing No. A-11

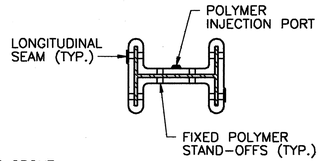


FOUNDATION LAYOUT
(NOT TO SCALE)

PILE INSTALLATION TABLE				
LOCATION	STATION	PILE SIZE (IN.)	DESIGN LOAD (TONS)	MIN. TIP EL. (FT.)
CRUTCH BENT–BENT 6	11+76.55	HP14x73	70	–35.0
BASCULE PIER STABILIZING	12+13.78	HP14x73	70	–35.0
BASCULE PIER STABILIZING	12+18.11	HP14x73	70	–35.0
ACCESS PLATFORM	12+20.72	HP14x73	70	–35.0
ACCESS PLATFORM	12+42.47	HP14x73	70	–35.0
CRUTCH BENT–BENT 7	12+28.12	HP14x73	70	–35.0



STEEL PILE JACKET DETAILS



SECTION A–A

NOTES:
1. ⊡ = EXISTING 14" SQUARE PRESTRESSED CONCRETE PILE.
2. → INDICATES THE DIRECTION OF BATTER OF THE PILES.
3. I = NEW STEEL HP 14x73 PILE
4. I→ INDICATES 3" PER FOOT BATTER
5. ALL NEW STEEL PILES TO HAVE PROTECTIVE JACKETS, SEE DETAILS, THIS SHEET.
6. FOR REPORT OF CORE BORINGS, SEE SHEET "REPORT OF CORE BORINGS."
7. PILE SPACING GIVEN AT PILE CUT OFF ELEVATIONS.
8. FOR STEEL SHEET PILE INSTALLATION DETAILS, SEE SHEETS "BULKHEAD DETAILS – END BENT 1" AND "BULKHEAD DETAILS – END BENT 11."
9. EXPOSED PARTS OF STEEL PILING, BRACING AND CONNECTIONS SHALL BE PAINTED IN ACCORDANCE WITH THE PROVISIONS FOR PAINTING STRUCTURAL STEEL, AS SPECIFIED IN SECTION 561 OF THE SPECIFICATIONS. A THREE COAT SYSTEM IS REQUIRED (EACH COAT SHALL HAVE A COLOR CONTRAST TO THE PREVIOUS COAT).
10. A MINIMUM OF ONE PDA TEST PILE SHALL BE PERFORMED. DRIVE ONE STEEL HP14x73 UNLOADED TEST PILE (LENGTH = 50 FT.) IN THE POSITION OF A PERMANENT PLUMB PILE. THE LOCATION SHALL BE APPROVED BY THE ENGINEER. THE UNLOADED TEST PILE SHALL BE EVALUATED USING A PILE DRIVING ANALYZER (PDA). PAYMENT FOR THE TEST PILE SHALL BE INCLUDED IN ITEM NO. 455–8–5.
11. THE CONTRACTOR SHALL USE PROTECTIVE DEVICES FOR PILE TIPS TO AVOID DAMAGE TO PILES DURING DRIVING OPERATION. REQUIREMENTS FOR PILE TIPS SHALL BE IN ACCORDANCE WITH SUBARTICLE A455–6.5 OF THE SUPPLEMENTAL SPECIFICATIONS. PAYMENT FOR PILE TIPS SHALL BE INCLUDED IN ITEM NO. 455–7–5.

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REVISIONS			REVISIONS		
Date	By	Description	Date	By	Description
2/12/96	RMC	1 PILE JACKET DIMENSION INCREASED ADDENDUM NO. 2			

SEAL: Mark Chamoff 2/12/96

	Names	Dates
Drawn by	TJL	5–95
Checked by	TJF	5–95
Designed by	MRC	5–95
Checked by	BGW	5–95
Approved by	T. J. FARRELL	

DSA GROUP INC.

DSA GROUP, INC.
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

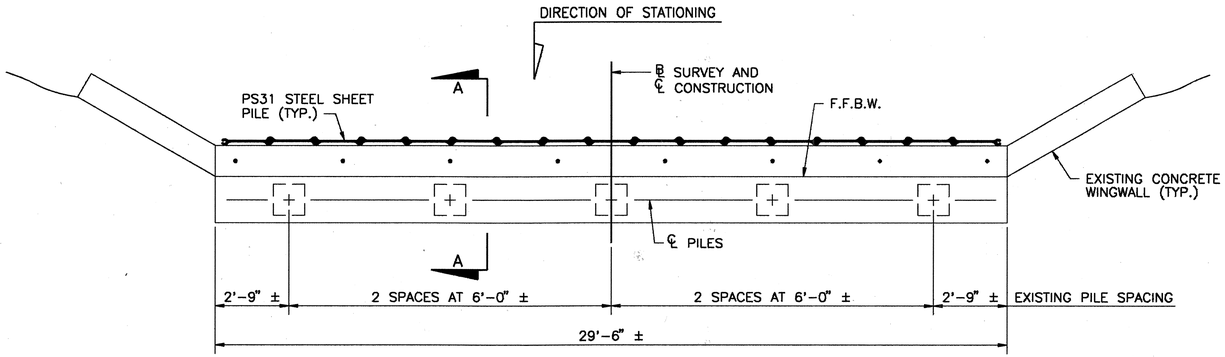
PINELLAS COUNTY FLORIDA BOARD OF COUNTY COMMISSIONERS

PINELLAS COUNTY
DEPARTMENT OF
PUBLIC WORKS

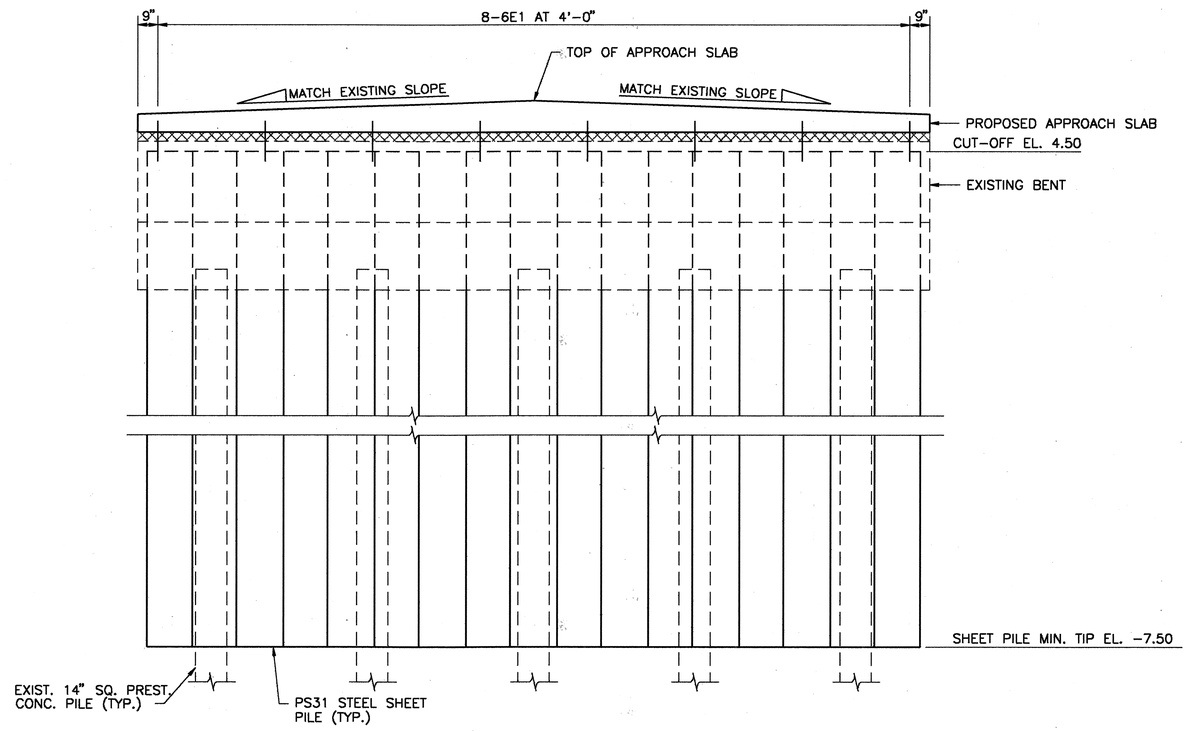
SHEET TITLE: FOUNDATION LAYOUT AND PILE JACKET DETAILS

PROJECT NAME: BECKETT BRIDGE REPAIRS

SHEET S-1



PLAN



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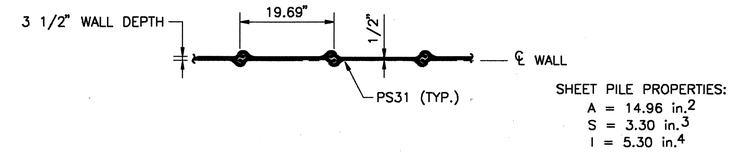
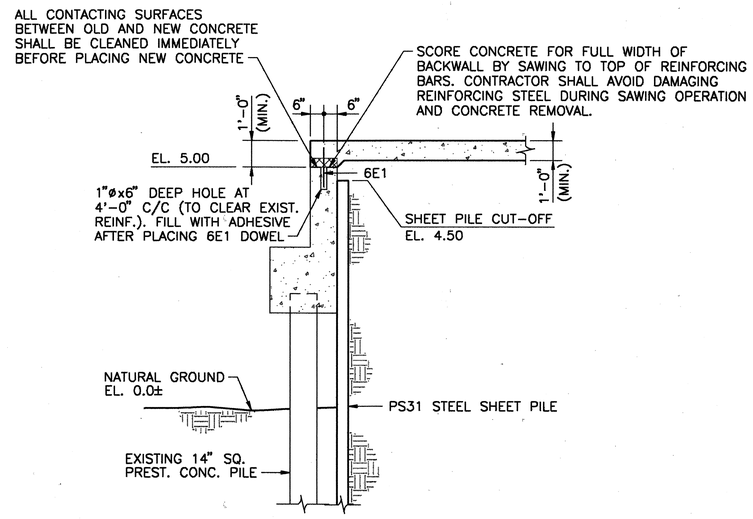


STEEL SHEET PILE DETAILS



SECTION A-A

ESTIMATED QUANTITIES		
ITEM	UNIT	QUANTITY
SHEET PILING STEEL	SF	335

NOTES:
1. ⊠ DENOTES EXISTING CONCRETE TO BE REMOVED.
2. TOP OF APPROACH SLAB SHALL MATCH TOP OF CONCRETE DECK AT FFBW.
3. COST OF CONCRETE REMOVAL SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR APPROACH SLABS CONCRETE, ITEM NO. 360-1.
4. FOR APPROACH SLAB DETAILS, SEE SHEET S-16.

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REVISIONS			REVISIONS		
Date	By	Description	Date	By	Description

SEAL:

	Names	Dates
Drawn by	KTL	5-95
Checked by	MRC	5-95
Designed by	MRC	5-95
Checked by	TJF	5-95
Approved by	T.J. FARRELL	

Timothy J. Farrell

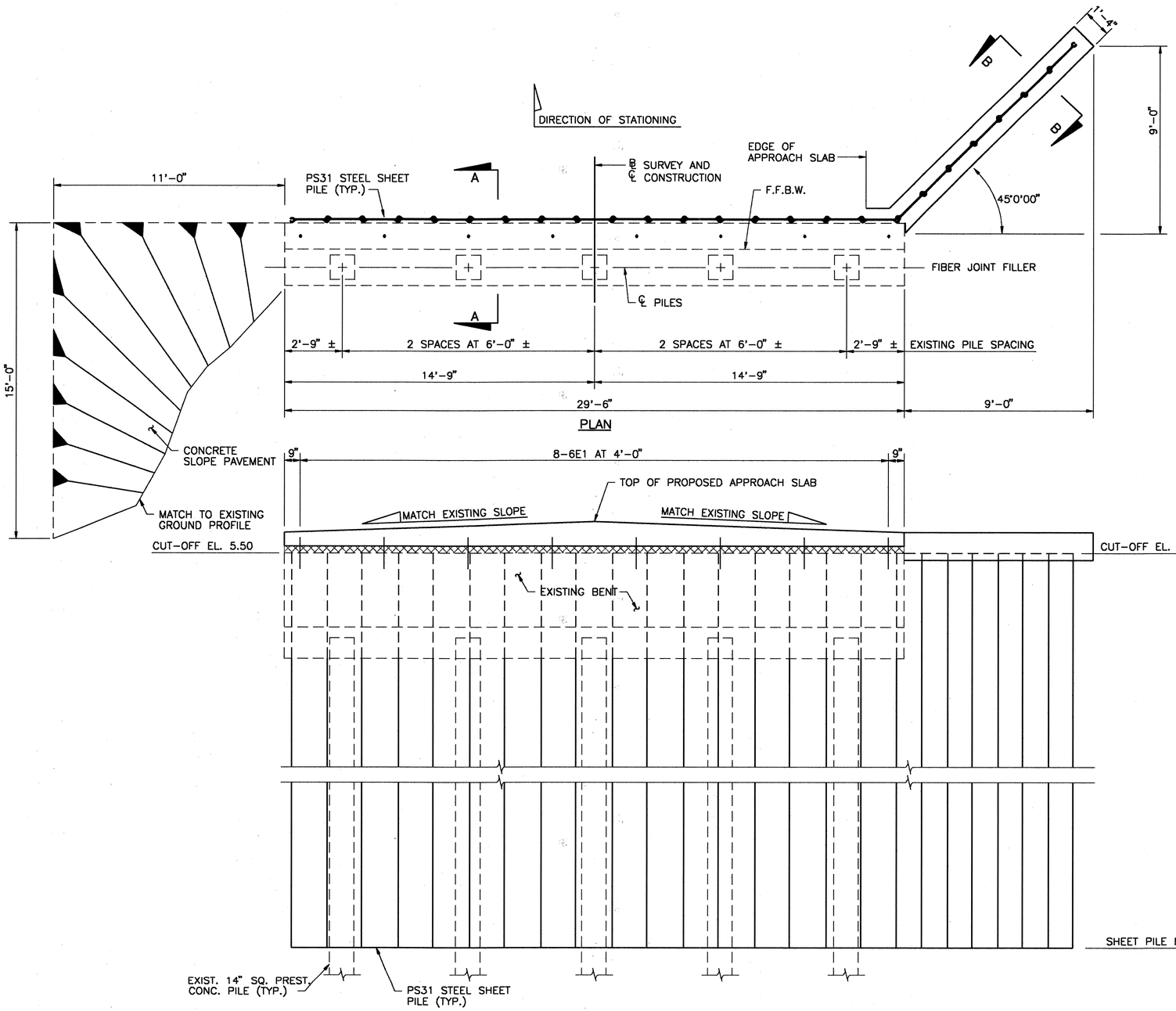
DSA GROUP INC.
DSA GROUP, INC.
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

PINELLAS COUNTY DEPARTMENT OF PUBLIC WORKS

SHEET TITLE: BULKHEAD DETAILS END BENT 1

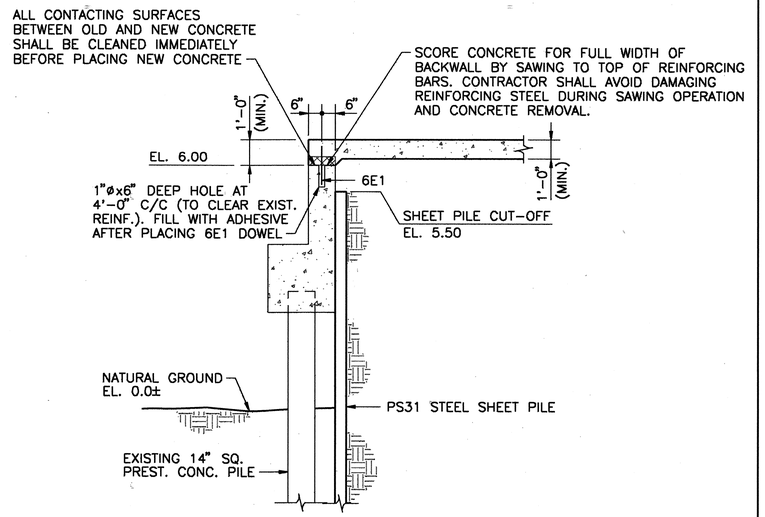
PROJECT NAME: BECKETT BRIDGE REPAIRS

SHEET S-2



PLAN

ELEVATION
(SLOPE PAVEMENT NOT SHOWN)



SECTION A-A

SECTION B-B

ESTIMATED QUANTITIES		
ITEM	UNIT	QUANTITY
SHEET PILING STEEL	SF	518
SLOPE PAVEMENT CONCRETE	SY	18

NOTES:
1. FOR STEEL SHEET PILE DETAILS SEE SHEET S-2
2. COST OF C.I.P. STEEL SHEET PILE CAP INCLUDING REINFORCING STEEL SHALL BE INCLUDED IN UNIT COST FOR SHEET PILING STEEL ITEM NO. 455-133.
3. COST OF CONCRETE REMOVAL SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR APPROACH SLABS CONCRETE, ITEM NO. 360-1.

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REVISIONS			REVISIONS		
Date	By	Description	Date	By	Description

SEAL:

	Names	Dates
Drawn by	KTL	5-95
Checked by	TJF	5-95
Designed by	BGW	5-95
Checked by	MRC	5-95
Approved by	T. J. FARRELL	

Timothy J. Farrell

DSA GROUP INC.

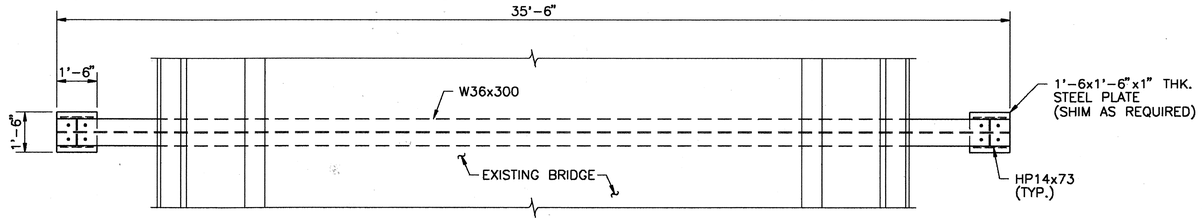
DSA GROUP, INC.
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

PINELLAS COUNTY DEPARTMENT OF PUBLIC WORKS

SHEET TITLE: BULKHEAD DETAILS END BENT 11

PROJECT NAME: BECKETT BRIDGE REPAIRS

SHEET S-3



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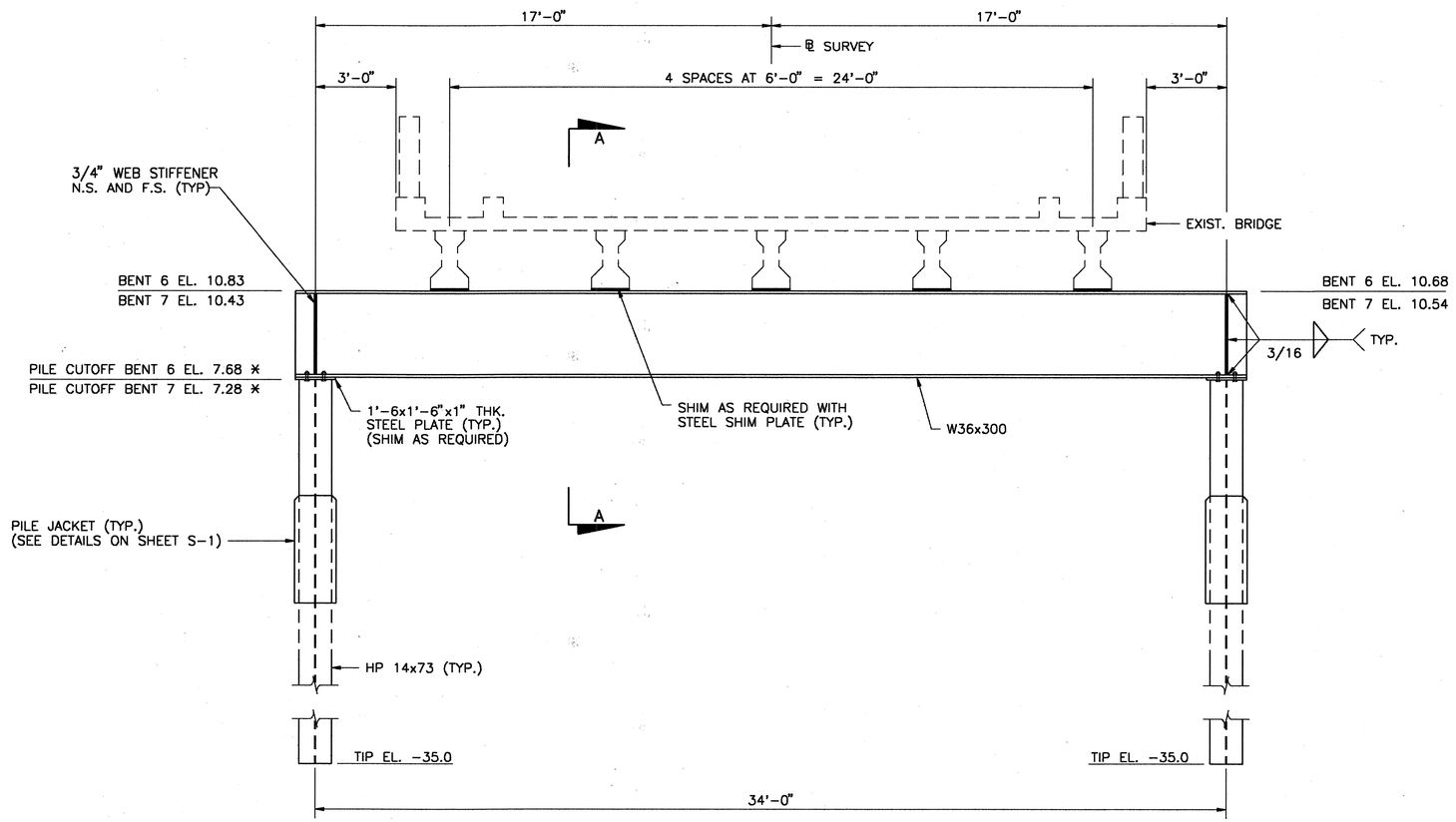

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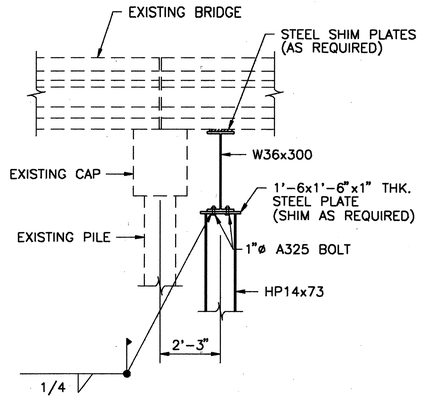

SECTION A-A

* THE CONTRACTOR SHALL ADJUST THESE ELEVATIONS IN ORDER TO ATTAIN FULL CONTACT BETWEEN THE EXISTING PRESTRESSED CONCRETE BEAMS AND THE W36x300.

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REVISIONS			REVISIONS		
Date	By	Description	Date	By	Description

SEAL:

	Names	Dates
Drawn by	TJL	4-95
Checked by	MRC	4-95
Designed by	MRC	4-95
Checked by	BGW	4-95
Approved by	T. J. FARRELL	

Timothy J. Farrell

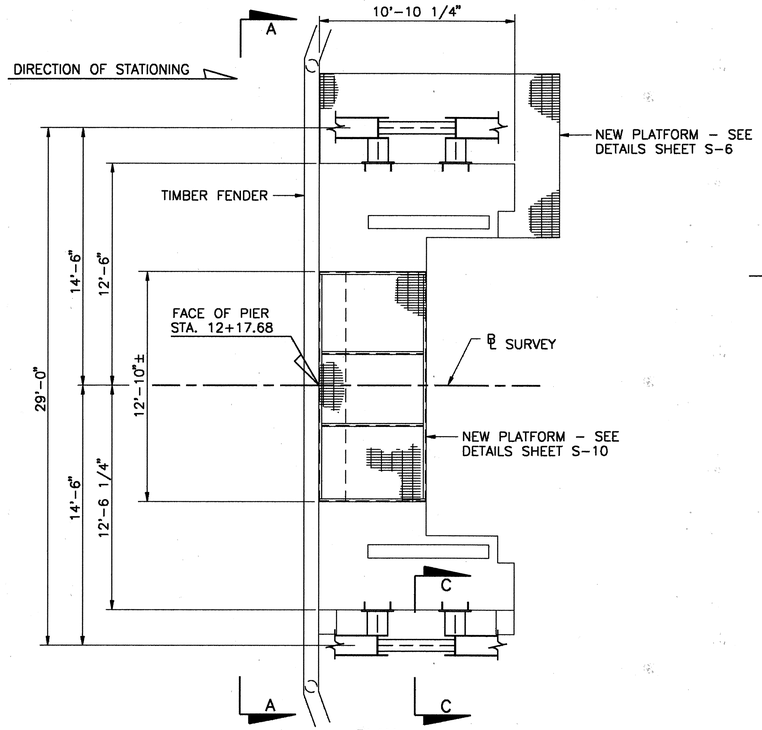
DSA GROUP INC.
DSA GROUP, INC.
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

PINELLAS COUNTY
DEPARTMENT OF
PUBLIC WORKS

SHEET TITLE:
CRUTCH BENT DETAILS

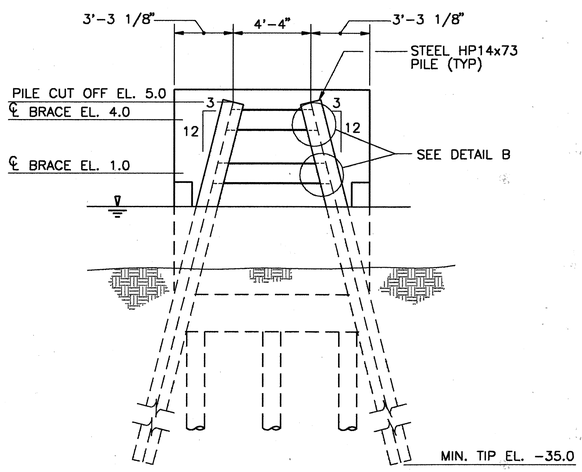
PROJECT NAME:
BECKETT BRIDGE REPAIRS

SHEET
S-4



PLAN

(SUPERSTRUCTURE OMITTED FOR CLARITY)



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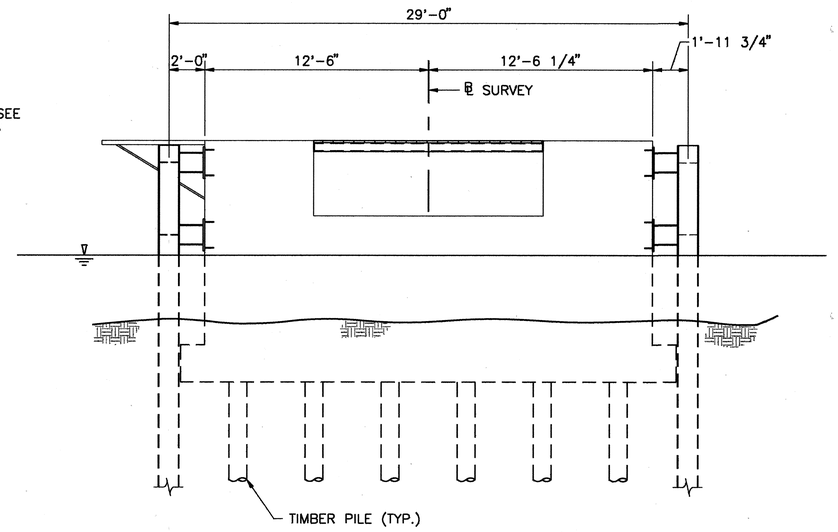
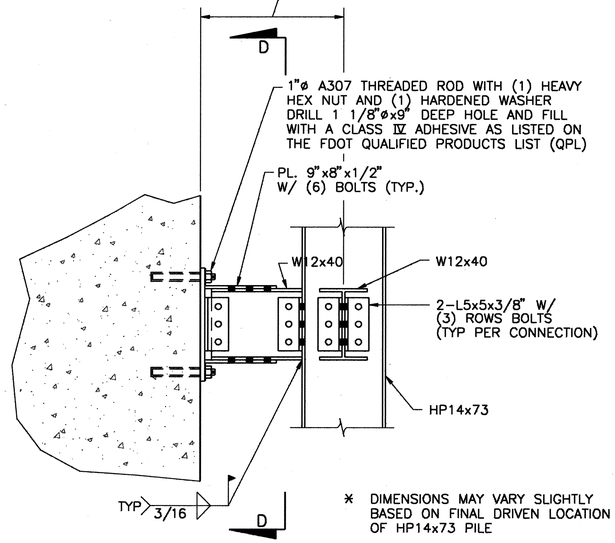


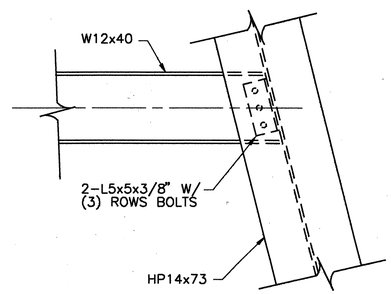
VIEW A-A

(FENDER NOT SHOWN FOR CLARITY)

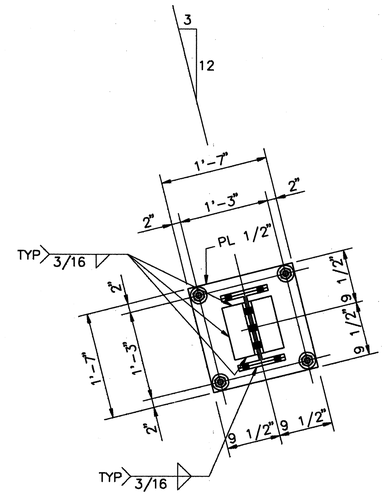


* DIMENSIONS MAY VARY SLIGHTLY BASED ON FINAL DRIVEN LOCATION OF HP14x73 PILE

SECTION C-C



DETAIL B



SECTION D-D

NOTE:
1. PAYMENT FOR BASCULE PIER STABILIZER BRACING AND CONNECTIONS SHALL BE PAID FOR UNDER PAY ITEM NO. 460-2-5 "STRUCTURAL STEEL (BASCULE LEAVES)".

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REVISIONS			REVISIONS		
Date	By	Description	Date	By	Description

SEAL:

	Names	Dates
Drawn by	CLM	5-95
Checked by	TJF	5-95
Designed by	TJF	5-95
Checked by	TJF	5-95
Approved by	T. J. FARRELL	

Timothy J. Farrell

DSA GROUP INC.

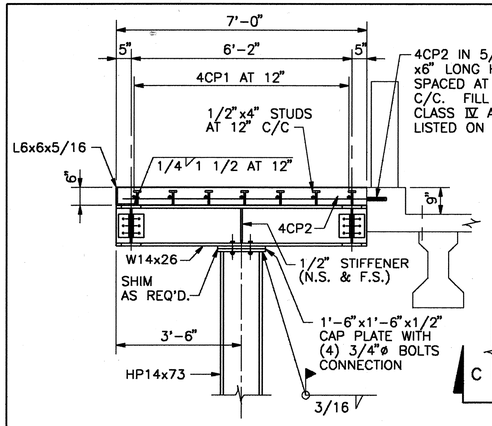
DSA GROUP, INC.
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

PINELLAS COUNTY DEPARTMENT OF PUBLIC WORKS

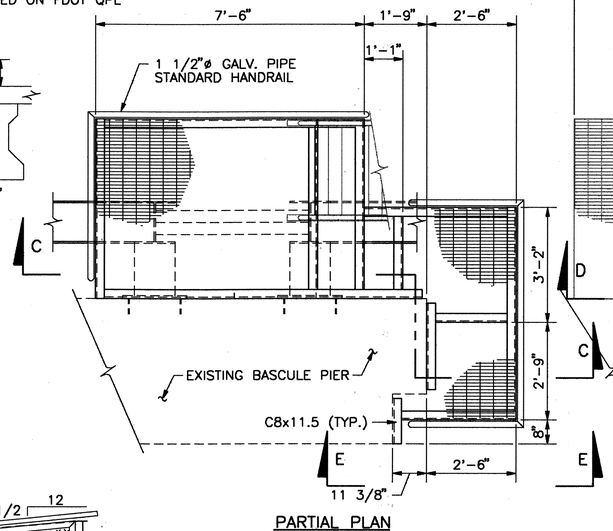
SHEET TITLE: BASCULE PIER STABILIZING DETAILS

PROJECT NAME: BECKETT BRIDGE REPAIRS

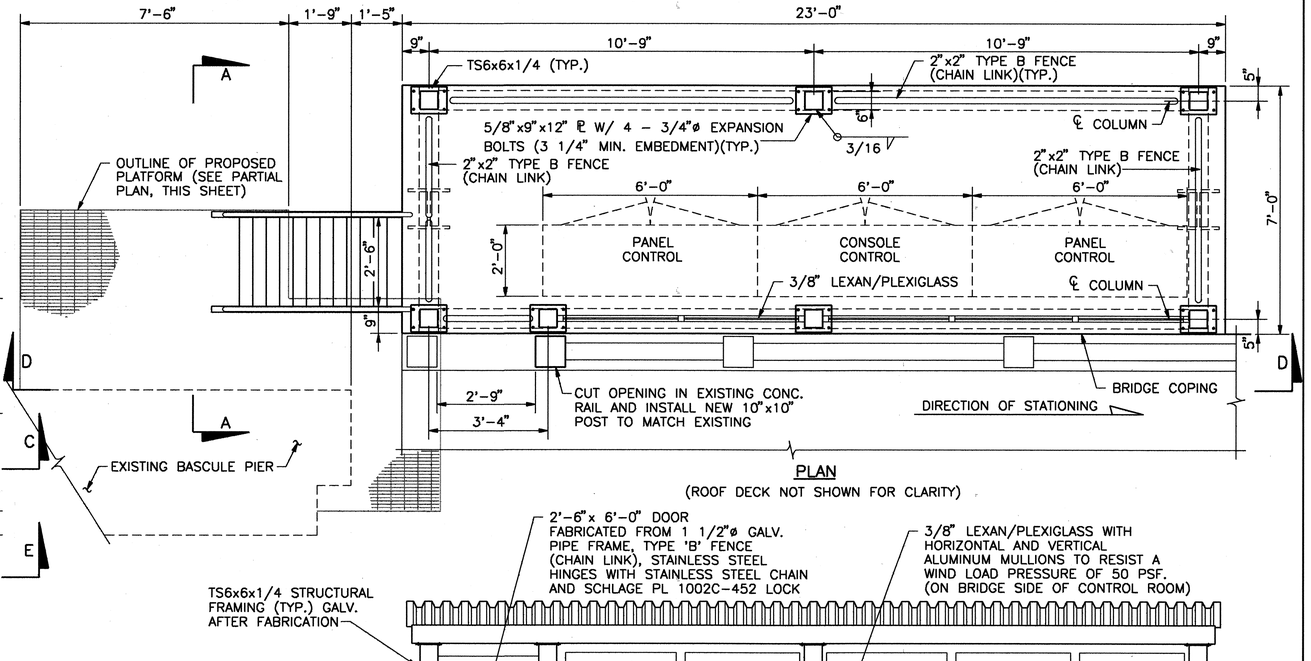
SHEET S-5



TYPICAL SLAB CROSS SECTION



PARTIAL PLAN



PLAN

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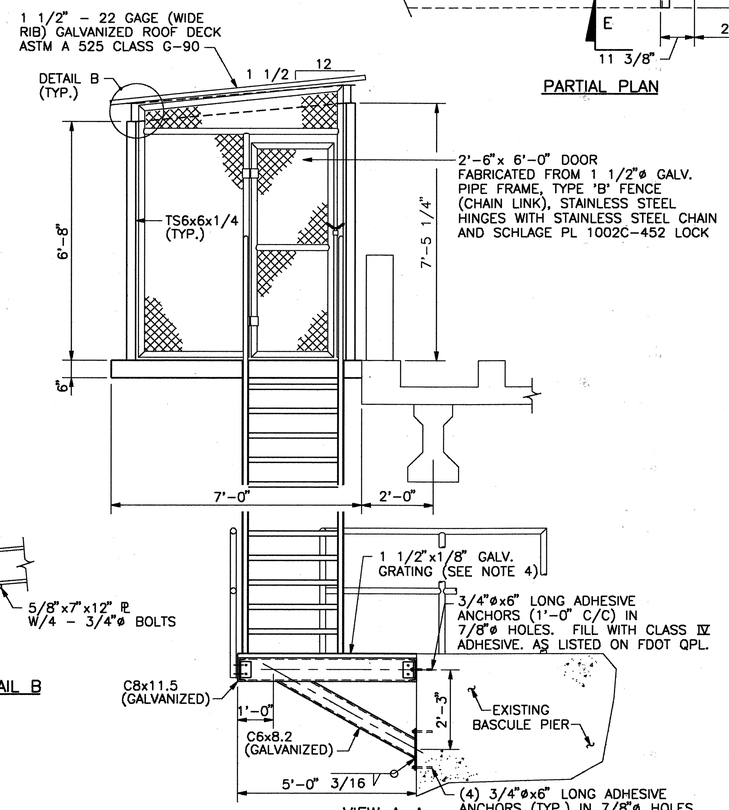
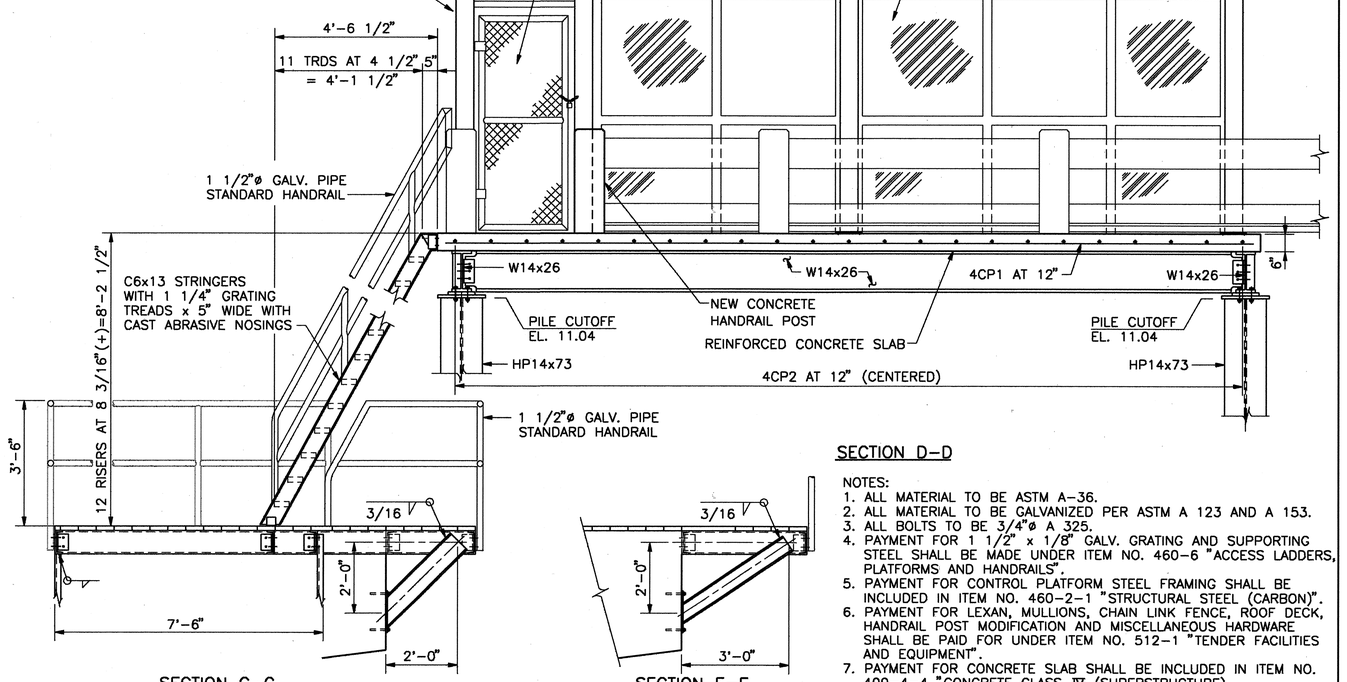


DETAIL B

VIEW A-A



SECTION C-C

SECTION E-E

SECTION D-D

NOTES:
1. ALL MATERIAL TO BE ASTM A-36.
2. ALL MATERIAL TO BE GALVANIZED PER ASTM A 123 AND A 153.
3. ALL BOLTS TO BE 3/4"ø A 325.
4. PAYMENT FOR 1 1/2" x 1/8" GALV. GRATING AND SUPPORTING STEEL SHALL BE MADE UNDER ITEM NO. 460-6 "ACCESS LADDERS, PLATFORMS AND HANDRAILS".
5. PAYMENT FOR CONTROL PLATFORM STEEL FRAMING SHALL BE INCLUDED IN ITEM NO. 460-2-1 "STRUCTURAL STEEL (CARBON)".
6. PAYMENT FOR LEXAN, MULLIONS, CHAIN LINK FENCE, ROOF DECK, HANDRAIL POST MODIFICATION AND MISCELLANEOUS HARDWARE SHALL BE PAID FOR UNDER ITEM NO. 512-1 "TENDER FACILITIES AND EQUIPMENT".
7. PAYMENT FOR CONCRETE SLAB SHALL BE INCLUDED IN ITEM NO. 400-4-4 "CONCRETE CLASS IV (SUPERSTRUCTURE).

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REVISIONS			REVISIONS		
Date	By	Description	Date	By	Description

SEAL:

	Names	Dates
Drawn by	CLM	5-95
Checked by	MRC	5-95
Designed by	MRC	5-95
Checked by	JMR	5-95
Approved by	T. J. FARRELL	

Timothy J. Farrell

DSA GROUP INC.

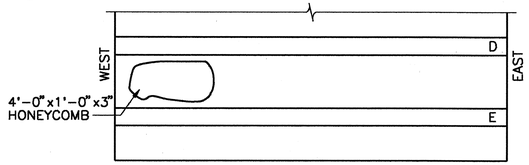
DSA GROUP, INC.
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

PINELLAS COUNTY DEPARTMENT OF PUBLIC WORKS

SHEET TITLE: CONTROL PLATFORM DETAILS

PROJECT NAME: BECKETT BRIDGE REPAIRS

SHEET S-6



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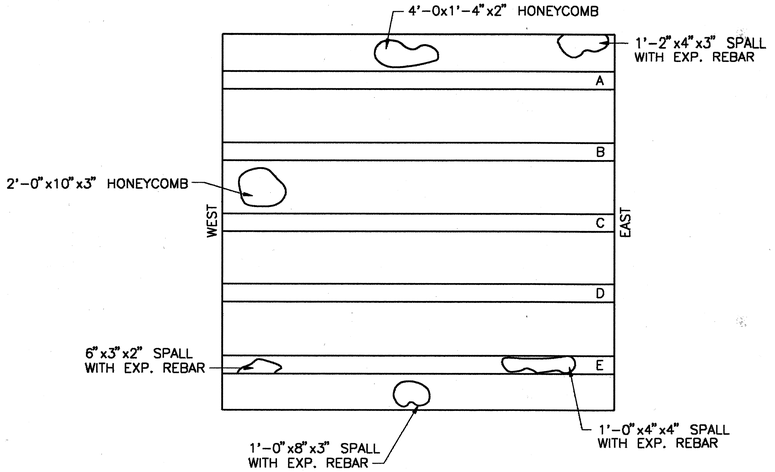

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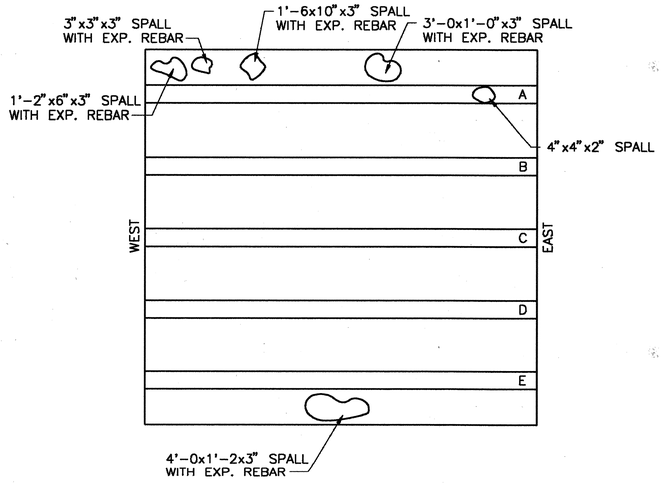

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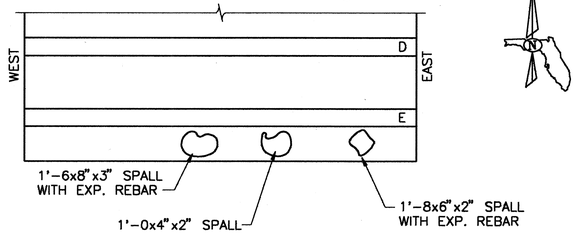

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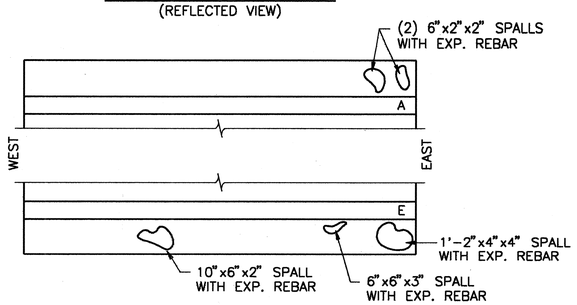

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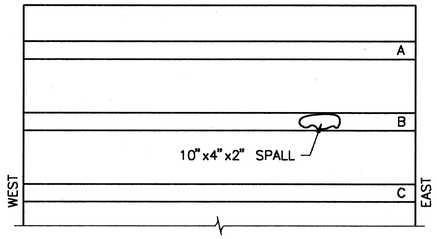

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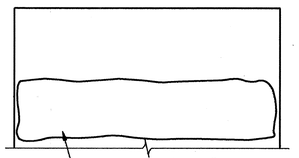
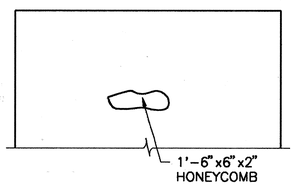
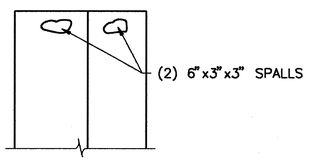


NORTH BASCULE PIER - NORTH FACE



SOUTH BASCULE PIER - SOUTH FACE



SOUTH BASCULE PIER - WEST FACE

REPAIR NOTES

PATCHING OF CONCRETE SPALLS:

SPALL WITHOUT EXPOSED REINFORCING STEEL: REPAIRING SPALLED CONCRETE SHALL INCLUDE ALL WORK REQUIRED TO REPAIR DETERIORATED CONCRETE SURFACES WHERE INDICATED OR AS DIRECTED BY THE ENGINEER, AND CONFORM TO MANUFACTURER'S SPECIFICATIONS. THIS WORK CONSISTS OF THE REMOVAL AND DISPOSAL OF LOOSE AND DISINTEGRATED CONCRETE, SAW-CUTTING, THE PREPARATION OF THE SURFACE AND PLACING OF POLYMER MODIFIED MORTAR. THE FOLLOWING STEPS SHALL BE USED IN ADDITION TO MANUFACTURER'S RECOMENDATIONS:

A. REMOVE UNSOUND CONCRETE FROM SPALLED AREA. POWER CHIPPING TOOLS MAY BE USED. BUT NOT TO EXCEED 30 POUNDS.

B. CLEAN CONCRETE SURFACES OF ALL LOOSE CONCRETE, DUST, AND ANY OTHER FOREIGN MATERIAL. BE SURE REPAIR AREA IS NOT LESS THAN 1/2 IN. IN DEPTH. PREPARE AREA TO OBTAIN AN AGGREGATE FRACTURED SURFACE WITH A MINIMUM SURFACE PROFILE OF ± 1/16 IN.

C. USE A POLYMER MODIFIED MORTAR (MASTERPATCH 230 VP AS MANUFACTURED BY MASTER BUILDERS, INC. OR APPROVED EQUAL) WHILE STILL TACKY. THE MATERIAL SHALL COMPLETELY FILL THE AREA. THOROUGHLY COMPACT THE COMPOUND ELIMINATING ALL AIR POCKETS. ALLOW THE MATERIAL TO STIFFEN ENOUGH BETWEEN LIFTS TO SUPPORT ITS OWN WEIGHT.

D. AFTER THE NEW CONCRETE IS IN PLACE, THE SURFACE SHALL BE FINISHED TO MATCH THE ADJACENT EXISTING AREAS.

SPALL WITH EXPOSED REINFORCING STEEL: REPAIRING SPALLED CONCRETE SHALL INCLUDE ALL WORK REQUIRED TO REPAIR DETERIORATED CONCRETE SURFACES WHERE INDICATED OR AS DIRECTED BY THE ENGINEER, AND CONFORM TO MANUFACTURER'S SPECIFICATIONS. THIS WORK CONSISTS OF THE REMOVAL AND DISPOSAL OF LOOSE AND DISINTEGRATED CONCRETE, SAW-CUTTING, THE PREPARATION OF THE SURFACE AND PLACING OF A POLYMER MODIFIED MORTAR. THE FOLLOWING STEPS SHALL BE USED IN ADDITION TO MANUFACTURER'S RECOMMENDATIONS:

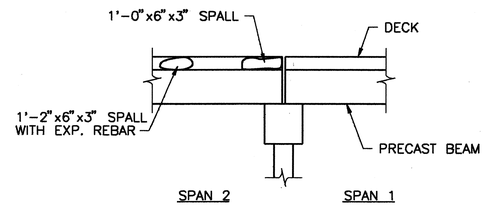
A. REMOVE UNSOUND CONCRETE FROM SPALLED AREA. PNEUMATIC TOOLS SHALL NOT BE PLACED IN DIRECT CONTACT WITH THE REINFORCING STEEL. EXTREME CARE SHALL BE TAKEN AS NOT TO DAMAGE THE STEEL OR ITS BOND IN THE SURROUNDING SOUND CONCRETE.

B. THE REMOVAL SHALL CONTINUE UNTIL AT LEAST 3/4 OF THE BAR'S CIRCUMFERENCE IS EXPOSED. IF UNSOUND CONCRETE IS ENCOUNTERED AT OR BELOW THE MID-DEPTH OF REINFORCEMENT BARS, REMOVAL SHALL EXTEND TO AT LEAST 3/4 INCHES BEYOND BARS.

C. CLEAN CONCRETE SURFACE AND EXPOSED REINFORCING STEEL OF ALL LOOSE CONCRETE, DUST, AND ANY FOREIGN MATERIAL. RUST SCALE SHALL BE REMOVED BY HYDROBLASTING.

D. THE REMAINING STEPS ARE SIMILAR TO THOSE USED FOR REPAIRING SPALLS WITHOUT EXPOSED REINFORCING STEEL. THE MATERIAL USED TO REPAIR CONCRETE SPALLS SHALL BE THE SAME TYPE USED FOR REPAIRING SPALLS WITHOUT EXPOSED REINFORCING STEEL.

E. WHEN REMOVING SPALLS AND UNSOUND CONCRETE, EDGES SHALL REMAIN VERTICAL (HORIZONTAL) WITH A MINIMUM DEPTH (WIDTH) OF 1/4" SUCH THAT THE NEW CEMENT IS NOT FEATHERED TO MATCH THE EXISTING CONCRETE SURFACE.



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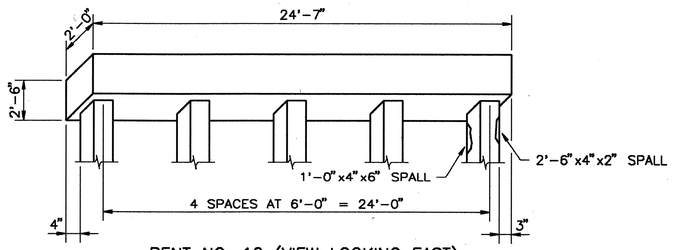

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REVISIONS			REVISIONS		
Date	By	Description	Date	By	Description

SEAL:

	Names	Dates
Drawn by	CLM	5-95
Checked by	MRC	5-95
Designed by	MRC	5-95
Checked by	BGW	5-95
Approved by	T. J. FARRELL	

Timothy J. Farrell

DSA GROUP INC.

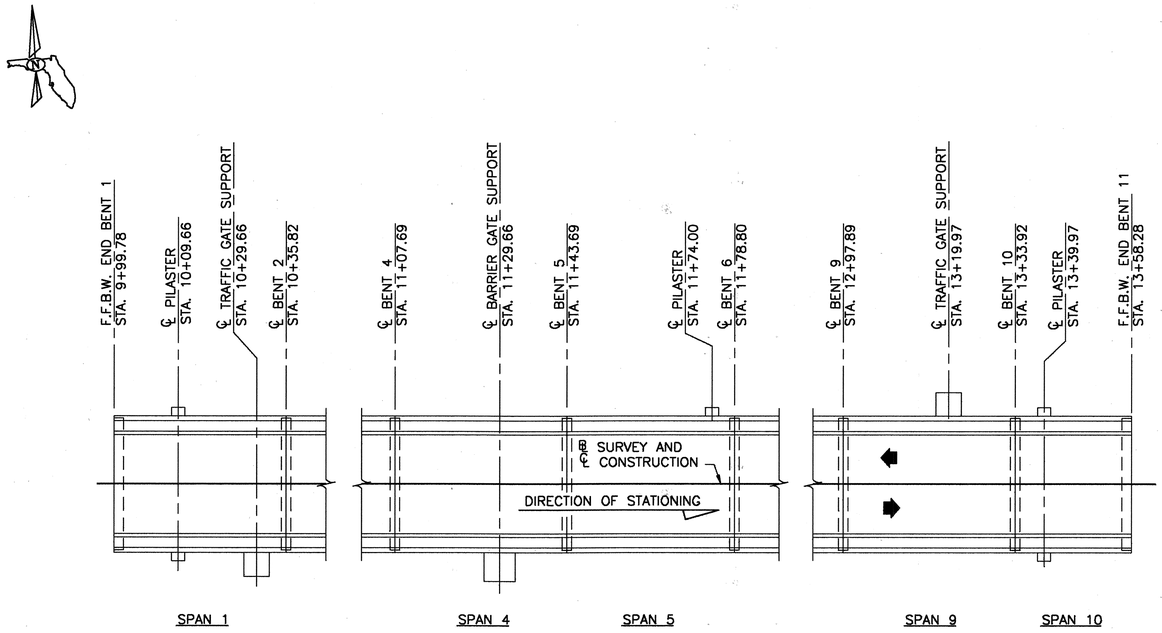
DSA GROUP, INC.
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

PINELLAS COUNTY DEPARTMENT OF PUBLIC WORKS

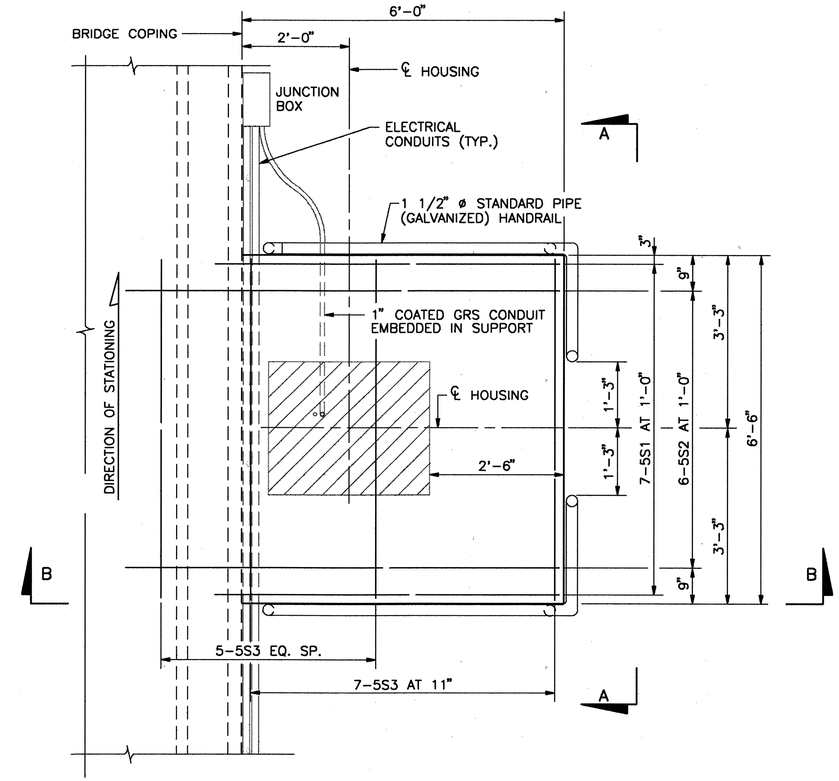
SHEET TITLE: CONCRETE REPAIR DETAILS

PROJECT NAME: BECKETT BRIDGE REPAIRS

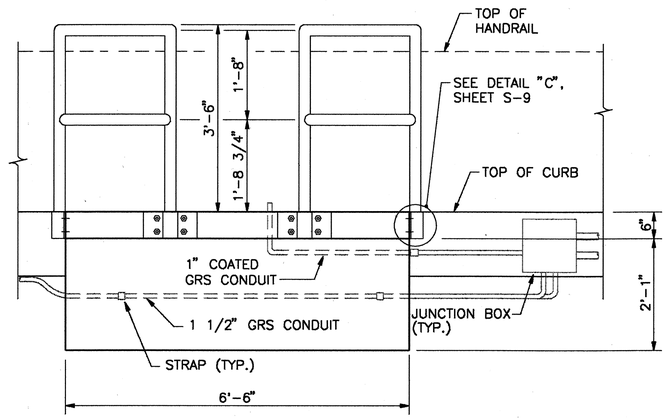
SHEET S-7



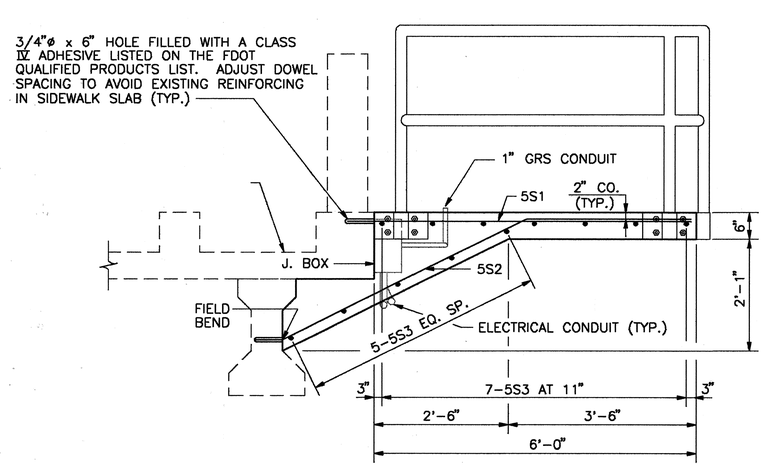
PLAN



PLAN-BARRIER GATE SUPPORT



VIEW A-A



SECTION B-B

* ESTIMATED QUANTITIES		
ITEM	UNIT	QUANTITY
CONCRETE CLASS IV (SUPERSTRUCTURE)	CY	5.1
REINFORCING STEEL (SUPERSTRUCTURE)	LB	796
HANDRAILS	LB	400

* QUANTITIES INCLUDE BARRIER GATE SUPPORT, TRAFFIC GATE SUPPORTS AND PILASTERS.

NOTES:
1. FOR HANDRAIL NOTES, LIGHT POLE PILASTER DETAILS AND DETAIL 'C', SEE SHEET S-9.
2. FOR REINFORCING BAR LIST, SEE SHEET S-16.
3. COST FOR PIPE HANDRAIL AND MISCELLANEOUS CONNECTION PIECES SHALL BE PAID FOR UNDER THE CONTRACT PRICE FOR ACCESS LADDERS, PLATFORMS, HANDRAILS, ITEM NO. 460-6.

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REVISIONS			REVISIONS		
Date	By	Description	Date	By	Description

SEAL:

	Names	Dates
Drawn by	CLM	5-95
Checked by	MRC	5-95
Designed by	MRC	5-95
Checked by	BGW	5-95
Approved by	T. J. FARRELL	

Timothy J. Farrell

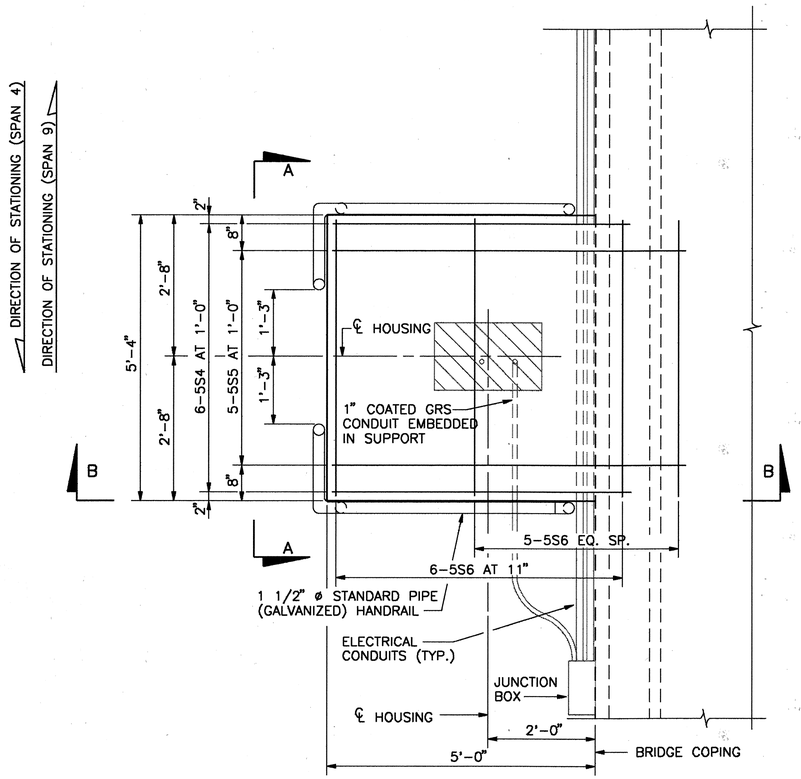
DSA GROUP INC.
DSA GROUP, INC.
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

PINELLAS COUNTY DEPARTMENT OF PUBLIC WORKS

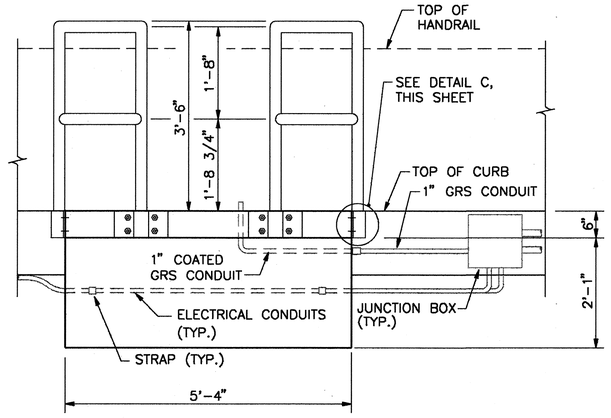
SHEET TITLE: BARRIER GATE SUPPORT DETAILS

PROJECT NAME: BECKETT BRIDGE REPAIRS

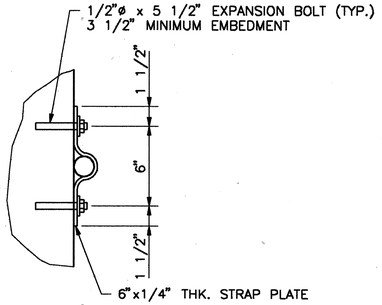
SHEET S-8



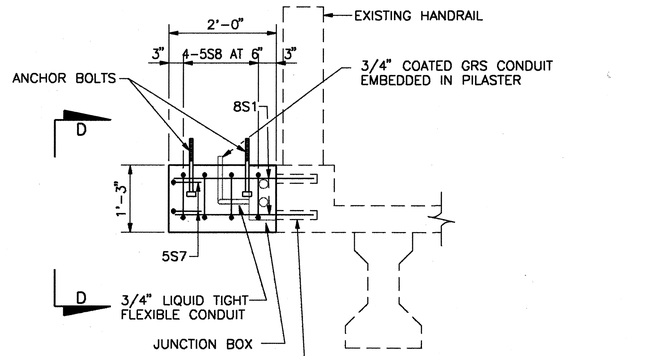
PLAN – TRAFFIC GATE SUPPORT



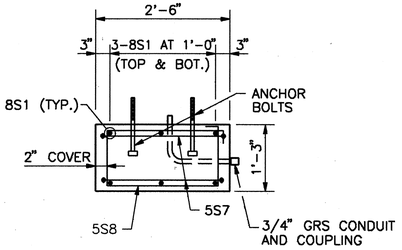
VIEW A–A



DETAIL C



TYPICAL PILASTER SECTION



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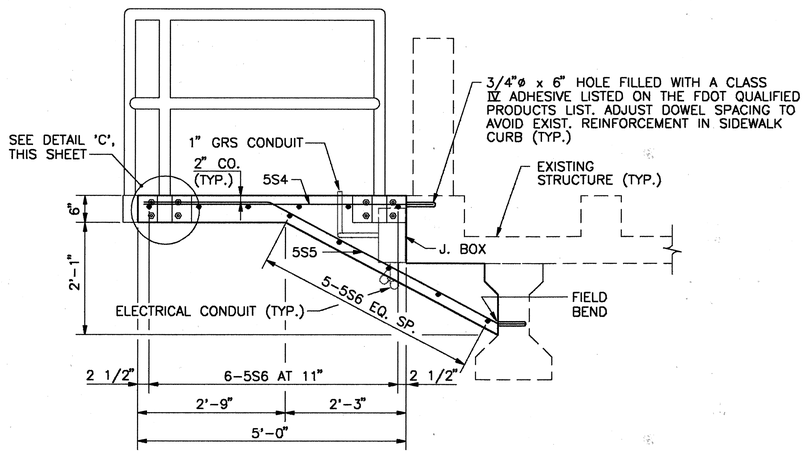

SECTION B–B

NOTES:
1. ANCHOR BOLTS TO BE HEADED BOLTS WITH A MINIMUM EMBEDMENT OF 6". ANCHOR BOLT SIZE AND LOCATION BASED ON LIGHT POLE AND TRAFFIC SIGNAL MANUFACTURER'S MOUNTING DETAILS.
2. AFTER NUTS HAVE BEEN TIGHTENED, ALL EXTERIOR HANDRAIL SUBJECT TO POSSIBLE VANDALISM SHALL HAVE THE THREADS ON THE ANCHOR BOLTS KNURLED TO PREVENT REMOVAL OF THE NUTS.
3. FOR REINFORCING BAR LIST, SEE SHEET S–16.
4. COST FOR HANDRAIL AND MISCELLANEOUS CONNECTION PIECES SHALL BE PAID FOR UNDER THE CONTRACT PRICE FOR ACCESS LADDERS, PLATFORMS, HANDRAILS, ITEM NO. 460–6.
5. FOR ESTIMATED QUANTITIES, SEE SHEET S–8.

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REVISIONS			REVISIONS		
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SEAL:

	Names	Dates
Drawn by	KTL	5–95
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Designed by	MRC	5–95
Checked by	BGW	5–95
Approved by	T. J. FARRELL	

Timothy J. Farrell

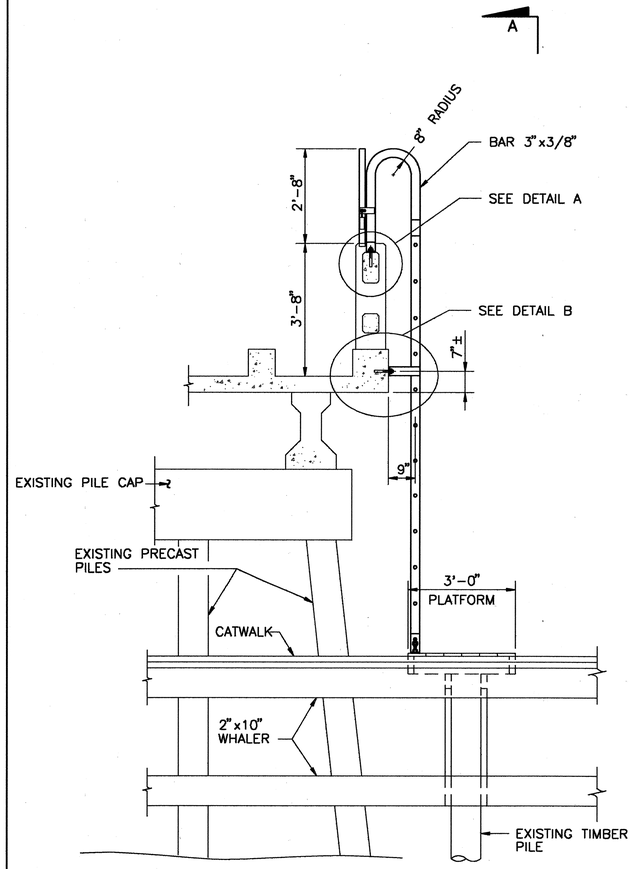
DSA GROUP INC.
DSA GROUP, INC.
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

PINELLAS COUNTY DEPARTMENT OF PUBLIC WORKS

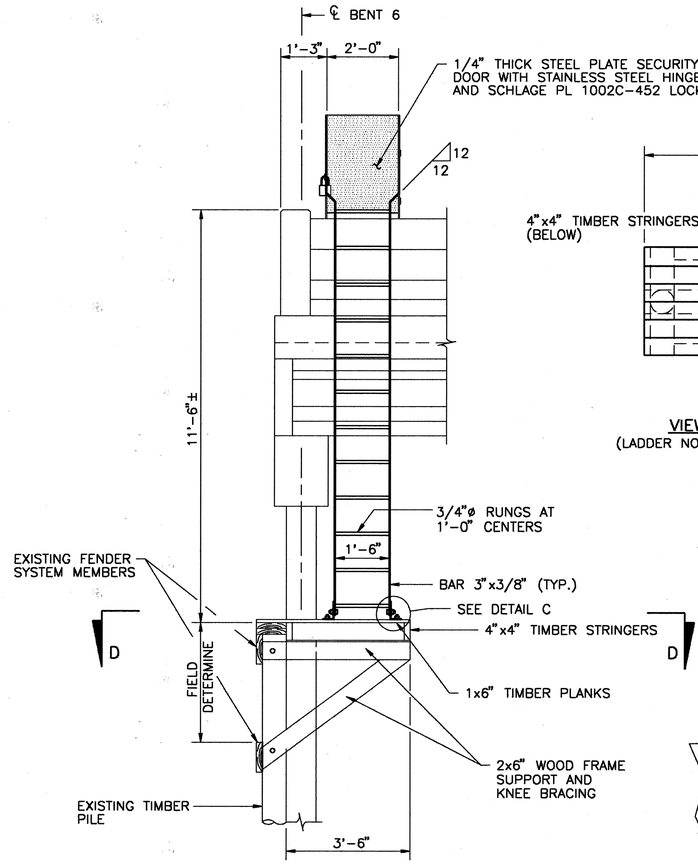
SHEET TITLE: TRAFFIC GATE SUPPORT AND PILASTER DETAILS

PROJECT NAME: BECKETT BRIDGE REPAIRS

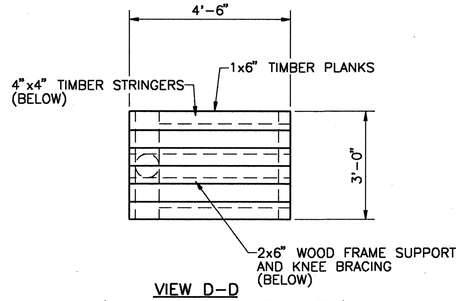
SHEET S–9



FENDER ACCESS LADDER DETAIL



VIEW A-A



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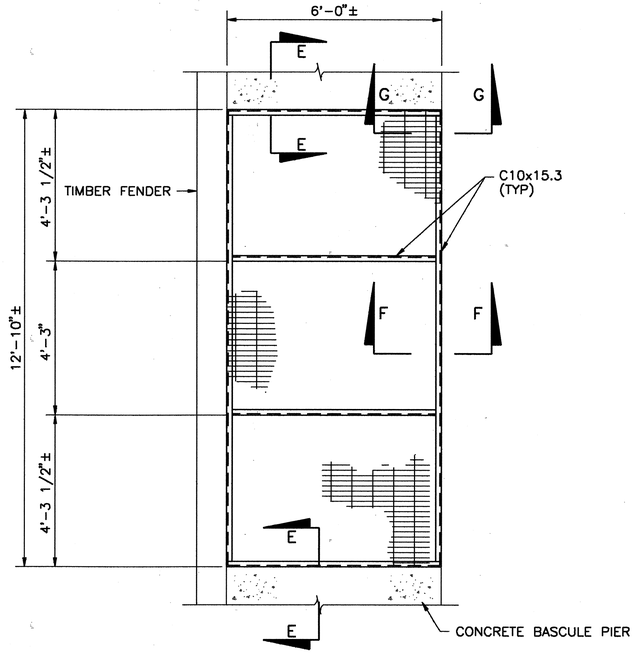
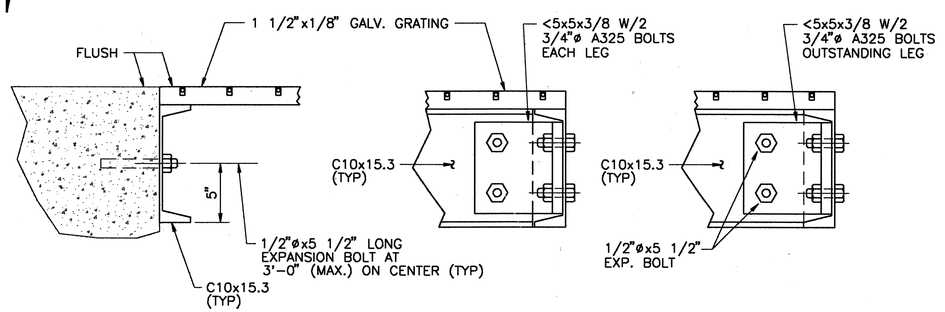
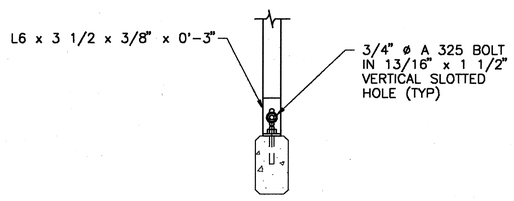


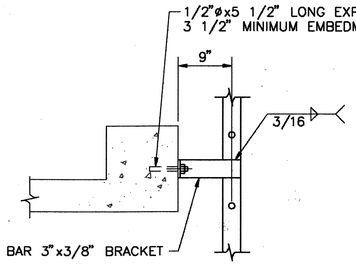
BASCULE PIER PLATFORM DETAIL



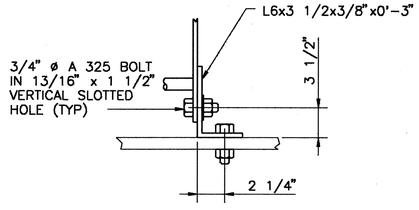
SECTION E-E SECTION F-F SECTION G-G



DETAIL A



DETAIL B



DETAIL C

NOTES:
1. ALL STEEL MATERIAL TO BE ASTM A 36 HOT DIP GALVANIZED PER ASTM A123.
2. THE LOCATION OF TIMBER LANDING SHOWN IS APPROXIMATE. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND MODIFY THE PLATFORM AS REQUIRED WITH PRIOR APPROVAL OF THE ENGINEER.
3. ALL DIMENSIONS TO BE FIELD VERIFIED PRIOR TO THE START OF ANY FABRICATION.
4. ALL TIMBER SHALL BE ROUGH AND TREATED IN ACCORDANCE WITH SECTION 955 OF THE STANDARD SPECIFICATIONS.
5. ALL TIMBER SHALL BE CUT TO DIMENSIONS REQUIRED PRIOR TO TREATMENT.
6. ALL HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH A.S.T.M. A153.
7. DOMEHEAD BOLTS SHALL BE PROVIDED WITH FINS OR SQUARE SHANKS TO PREVENT UNWANTED TURNING.
8. DOMEHEAD BOLTS AND DRIVE SPIKES SHALL HAVE SLOTS OR HOLES ON HEADS FOR 6d NAILS. DRIVE SPIKES SHALL BE 7/8"ø.
9. NO SEPARATE PAYMENT SHALL BE MADE FOR THE TIMBER LANDING PLATFORM OR SECURITY DOOR AND THE COST THEREOF SHALL BE INCLUDED UNDER "LADDERS, PLATFORMS, HANDRAILS, PAY ITEM NO. 460-6
10. PAYMENT FOR BASCULE PIER PLATFORM AND SUPPORTING STEEL SHALL BE MADE UNDER ITEM NO. 460-6 "ACCESS LADDERS, PLATFORMS, HANDRAILS)".

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Designed by	MRC	5-95
Checked by	TJF	5-95
Approved by	T. J. FARRELL	

Timothy J. Farrell

DSA GROUP INC.

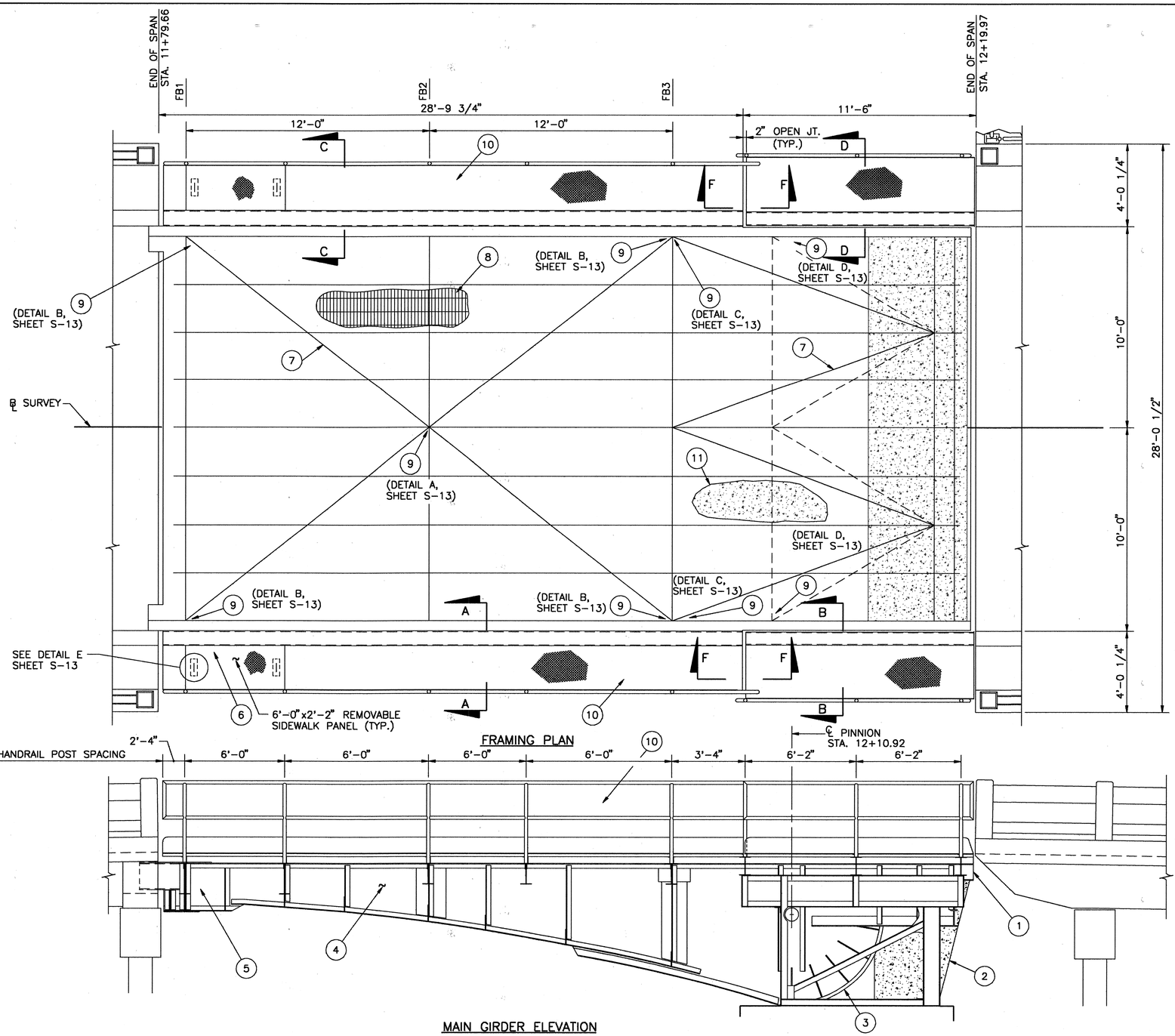
DSA GROUP, INC.
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

PINELLAS COUNTY DEPARTMENT OF PUBLIC WORKS

SHEET TITLE:
ACCESS LADDERS AND PLATFORM DETAILS

PROJECT NAME:
BECKETT BRIDGE REPAIRS

SHEET
S-10



LEGEND

1. REPLACE DETERIORATED COUNTERWEIGHT SUPPORT MEMBERS.
2. REPLACE CONCRETE COUNTERWEIGHT.
3. REHABILITATE WEAR PLATES.
4. CLEAN AND PAINT STRUCTURAL STEEL
5. FURNISH AND INSTALL NEW NAVIGATION LIGHTS.
6. REMOVE EXISTING HAND OPERATED SPAN LOCK SYSTEM.
7. REPLACE STEEL BRACING ANGLES (TYP.).
8. CLEAN AND PAINT OPEN STEEL GRATING.
9. REPLACE DIAGONAL BRACING GUSSET PLATES.
10. FURNISH AND INSTALL NEW SIDEWALK AND HANDRAILS.
11. FILL EXISTING OPEN STEEL GRATING WITH CONCRETE TO FB3

ESTIMATED QUANTITIES		
ITEM	UNIT	QUANTITY
STRUCTURAL STEEL (BASCULE LEAVES)	LBS.	11,750
PAINT STRUCTURAL STEEL	TN.	34

NOTE:
FOR SECTIONS A-A, B-B, C-C, D-D AND F-F, SEE SHEET S-12.

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Drawn by	CLM	5-95
Checked by	TJF	5-95
Designed by	MRC	5-95
Checked by	TJF	5-95
Approved by	T.J. FARRELL	

Timothy J. Farrell

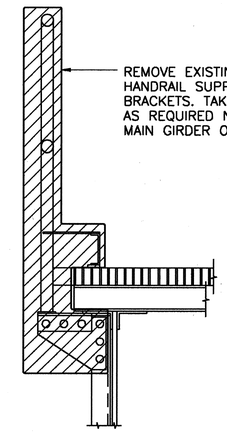
DSA GROUP INC.
DSA GROUP, INC.
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

PINELLAS COUNTY DEPARTMENT OF PUBLIC WORKS

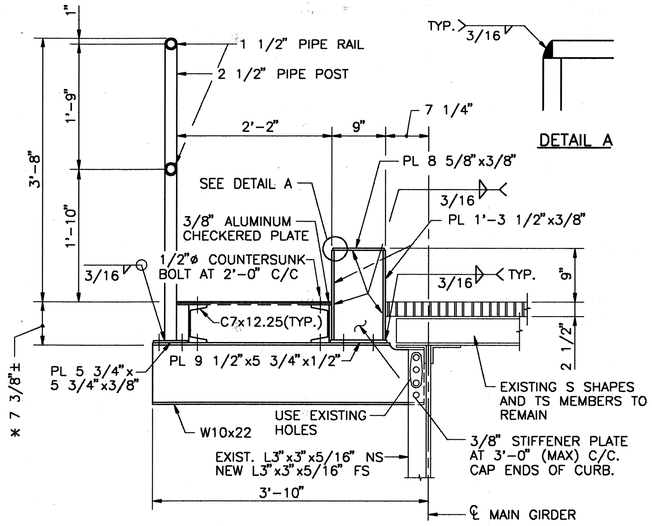
SHEET TITLE: BASCULE SPAN REPAIRS

PROJECT NAME: BECKETT BRIDGE REPAIRS

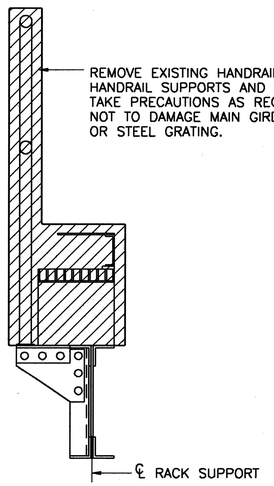
SHEET S-11



SECTION A–A DEMOLITION



SECTION A–A REHABILITATION
(REQ'D. AT 3 LOCATIONS)



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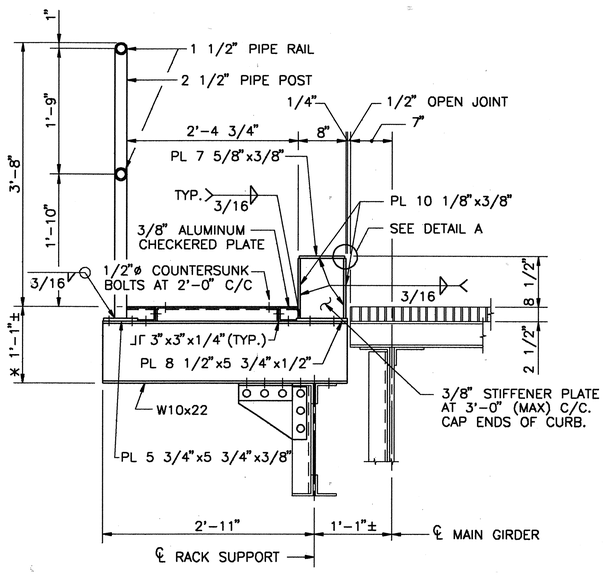


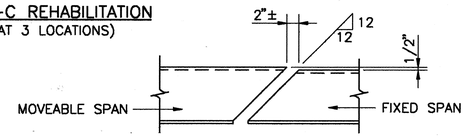
SECTION B–B REHABILITATION
(REQ'D. AT 3 LOCATIONS)

SECTION C–C DEMOLITION

SECTION C–C REHABILITATION
(REQ'D. AT 3 LOCATIONS)

SECTION D–D DEMOLITION

SECTION D–D REHABILITATION
(REQ'D. AT 3 LOCATIONS)



VIEW F–F

* CONTRACTOR SHALL ADJUST THIS DIMENSION SUCH THAT THE TOP OF BASCULE SPAN SIDEWALK IS LEVEL WITH THE TOP OF CONCRETE APPROACH SPAN SIDEWALK BY PROVIDING FULL BEARING SHIMS BETWEEN W10x22 AND SIDEWALK SUPPORT MEMBERS.

NOTES:
1. SEE SHEET A–2 FOR GENERAL NOTES REGARDING MATERIAL AND FABRICATION REQUIREMENTS.
2. ALL BOLTED CONNECTIONS TO BE FRICTION TYPE UTILIZING 3/4"ø A325 BOLTS (TYPE I).
3. SEE SHEET M–3 FOR SIDEWALK BRACKET DETAILS AT SPAN LOCKS.
4. COST OF PIPE RAILS AND POSTS SHALL BE INCLUDED IN ITEM NO. 460–2–5, "STRUCTURAL STEEL (BASCULE LEAVES)".

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REVISIONS			REVISIONS		
Date	By	Description	Date	By	Description

SEAL:

	Names	Dates
Drawn by	CLM	5–95
Checked by	TJF	5–95
Designed by	MRC	5–95
Checked by	TJF	5–95
Approved by	T. J. FARRELL	

Timothy J. Farrell

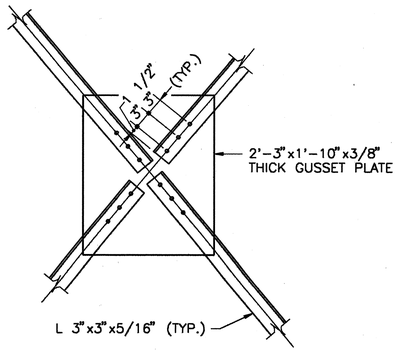
DSA GROUP INC.
DSA GROUP, INC.
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

PINELLAS COUNTY DEPARTMENT OF PUBLIC WORKS

SHEET TITLE:
BASCULE SPAN–
SIDEWALK AND HANDRAIL DETAILS

PROJECT NAME:
BECKETT BRIDGE REPAIRS

SHEET
S–12



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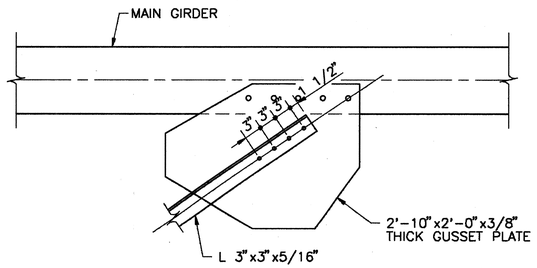

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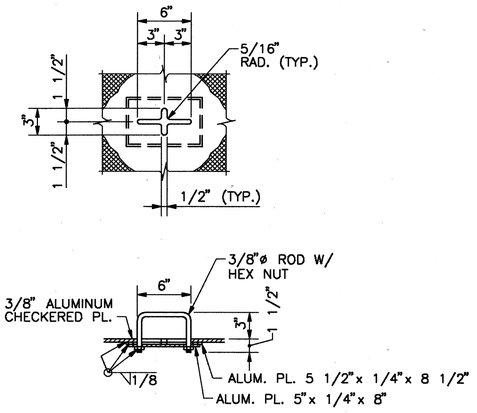
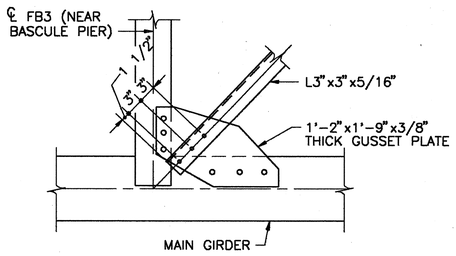


DETAIL E



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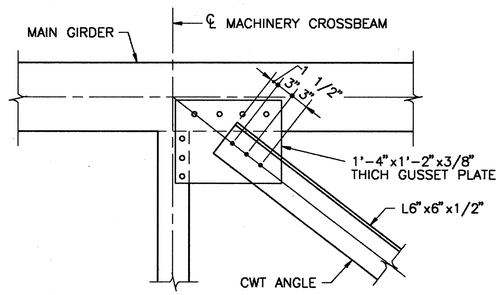

DETAIL "D"

NOTES:
1. THE NEW BRACING GUSSET PLATES SHALL BE CONSTRUCTED FROM ASTM A709 GRADE 36 STEEL.
2. REMOVE EXISTING RIVETS IN LATERAL BRACING AS REQUIRED. RIVETS SHALL BE REPLACED BY 7/8"ø HIGH STRENGTH BOLTS.
3. NEW HOLES IN EXISTING BRACING ANGLES AND CORRESPONDING HOLES IN NEW GUSSET PLATES SHALL BE FIELD DRILLED.
4. FOR FRAMING PLAN, SEE SHEET S-11.

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REVISIONS			REVISIONS		
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	Names	Dates
Drawn by	KTL	5-95
Checked by	MRC	5-95
Designed by	MRC	5-95
Checked by	TJF	5-95
Approved by	T.J. FARRELL	

Timothy J. Farrell

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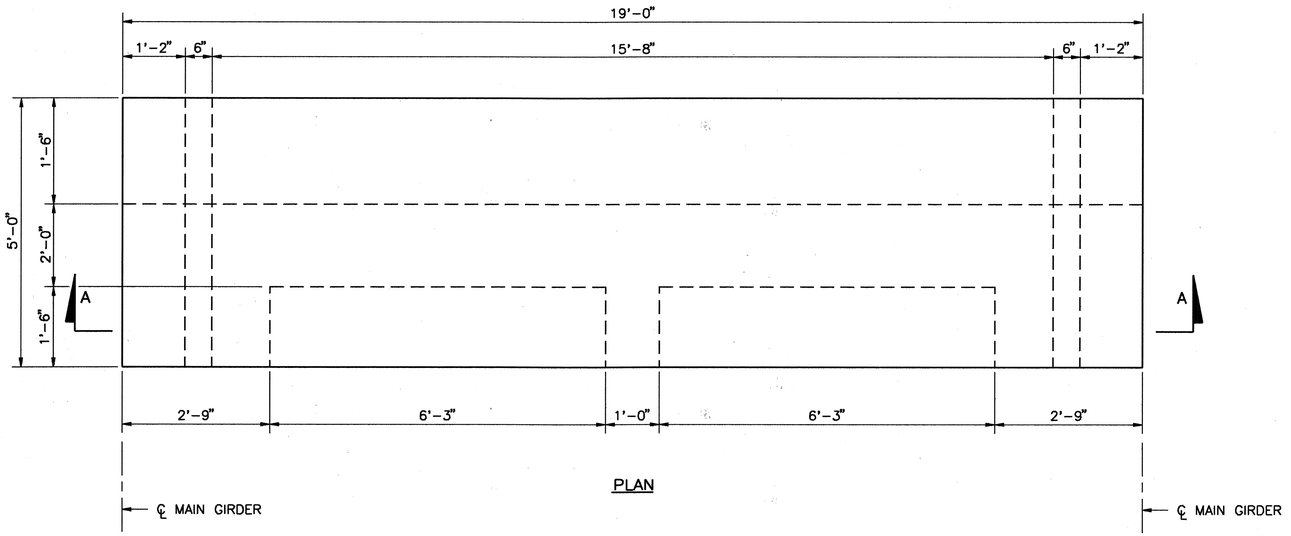
DSA GROUP, INC.
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

PINELLAS COUNTY
DEPARTMENT OF
PUBLIC WORKS

SHEET TITLE:
STRUCTURAL STEEL REPAIR DETAILS

PROJECT NAME:
BECKETT BRIDGE REPAIRS

SHEET
S-13



PLAN

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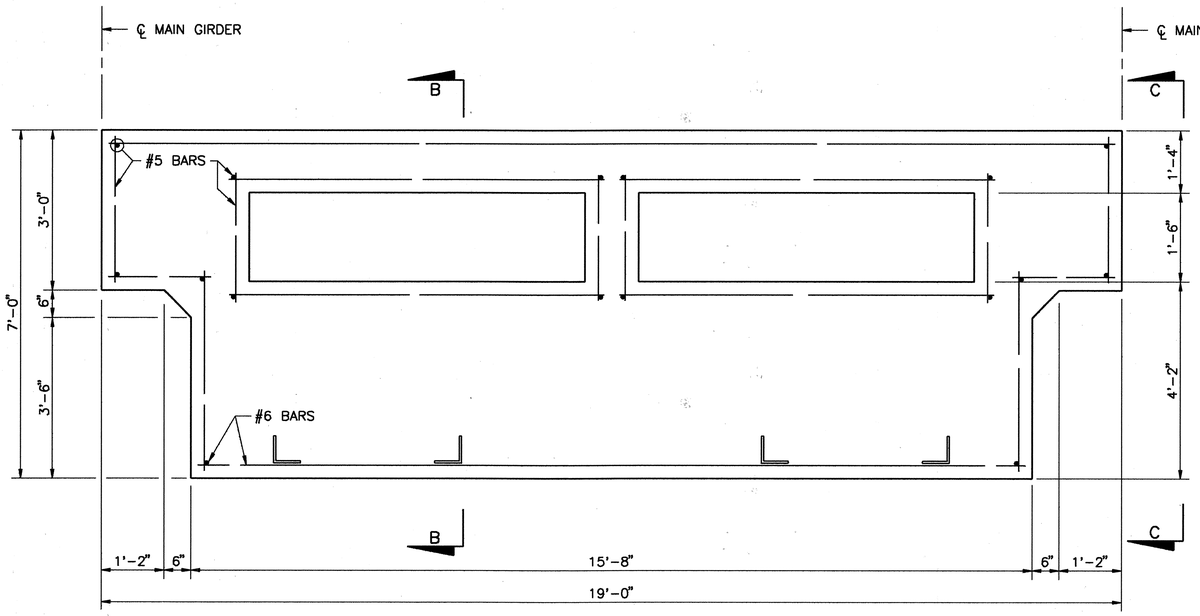
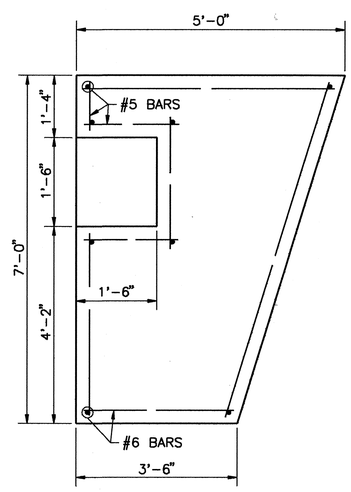


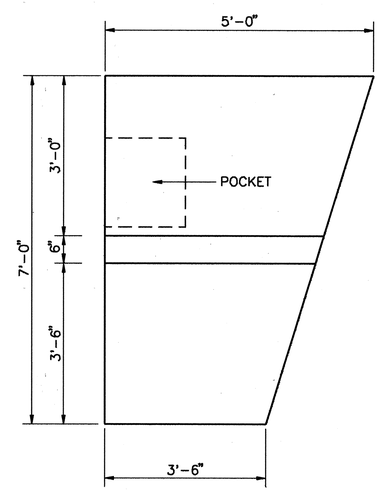
SECTION A–A

NOTES:
1. FOR GENERAL NOTES, SEE SHEET A–2.
2. ALL REINFORCING SHALL HAVE 3" COVER UNLESS OTHERWISE SHOWN.
3. REINFORCING: #5 BARS AT 12" SPACING (TOP AND AROUND POCKETS); #6 BARS AT 6" SPACING (BOTTOM).
4. COUNTERWEIGHT DIMENSIONS AND CENTER OF GRAVITY SHALL BE CHECKED BY THE CONTRACTOR USING WEIGHT DETERMINED FROM APPROVED SHOP DRAWINGS (SEE SECTION 481 OF THE TECHNICAL SPECIAL PROVISIONS).
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL BALANCING OF LEAF (SEE SECTION 481 OF THE TECHNICAL SPECIAL PROVISIONS).
6. THIS SHEET IS INTENDED AS A GUIDE ONLY. CONTRACTOR WILL BE REQUIRED TO SUBMIT SHOP DRAWINGS SHOWING DETAILS OF COUNTERWEIGHT AND SHALL SUBMIT CALCULATIONS SHOWING BALANCE OF LEAF (SEE SECTION 481 OF THE TECHNICAL SPECIAL PROVISIONS).
7. DESIGN CALCULATIONS TO DETERMINE THE DIMENSIONS OF THE COUNTERWEIGHT CONCRETE NECESSARY TO BALANCE THE MOMENT PRODUCED BY THE STRUCTURAL STEEL AND MACHINERY ASSUME A UNIT WEIGHT OF 245 POUNDS PER CUBIC FOOT FOR CONCRETE. THE CONTRACTOR SHALL ADJUST THE DIMENSIONS OF THE COUNTERWEIGHT BASED ON THE DESIGN CALCULATIONS TO PRODUCE A MOMENT BALANCE USING THE ACTUAL UNIT WEIGHT OF THE CONCRETE TO BE USED IN THE CONSTRUCTION OF THE COUNTERWEIGHT. IRON ORE OR STEEL PUNCHINGS OR FILINGS OR OTHER HEAVY MATERIAL SHALL BE MIXED WITH THE AGGREGATE TO ASCERTAIN THE REQUIRED WEIGHT OF CONCRETE. STEEL PLATES (6'–0" x 1'–4" x 1/4" THK.) SHALL BE USED IN THE POCKETS TO BALANCE THE LEAF. PLATES EQUAL TO 5% OF CALCULATED COUNTERWEIGHT SHALL BE PROVIDED. METHODS OF MIXING AND PLACING SHALL BE DEVISED TO GIVE CLOSE CONTROL AND UNIFORMITY OF UNIT WEIGHT OF THE CONCRETE THROUGHOUT THE COUNTERWEIGHT CONCRETE MASS. THE CONCRETE SHALL BE PLACED IN LAYERS AND CONSOLIDATED WITH VIBRATORS OR TAMPERS. THE CONCRETE IN THE COUNTERWEIGHT SHALL HAVE A 28 DAY STRENGTH OF 3,400 PSI.
8. THE CONTRACTOR MAY USE OTHER METHODS OF PROVIDING THE COUNTERWEIGHT MASS PROVIDED THEY MEET THE REQUIREMENTS OF THESE GENERAL NOTES AND ARE APPROVED BY THE ENGINEER.
9. COST OF BALANCING STEEL PLATES AND REINFORCING STEEL SHALL BE INCUDED IN ITEM NO. 400–2–6 "CONCRETE CLASS II (COUNTERWEIGHT)".

ESTIMATED QUANTITIES		
ITEM	UNIT	QUANTITY
CONCRETE – COUNTERWEIGHT	CY	18.0
REINFORCING STEEL	LBS	1,800



SECTION B–B



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REVISIONS			REVISIONS		
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	Names	Dates
Drawn by	KTL	5–95
Checked by	MRC	5–95
Designed by	MRC	5–95
Checked by	TJF	5–95
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2005 PAN AM CIRCLE
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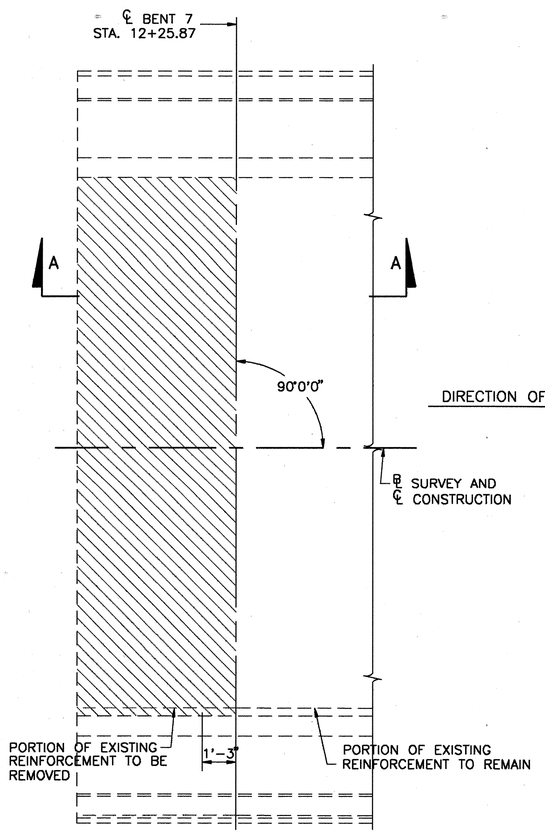
PINELLAS COUNTY
DEPARTMENT OF
PUBLIC WORKS

SHEET TITLE: COUNTERWEIGHT DETAILS

PROJECT NAME: BECKETT BRIDGE REPAIRS

SHEET S-14



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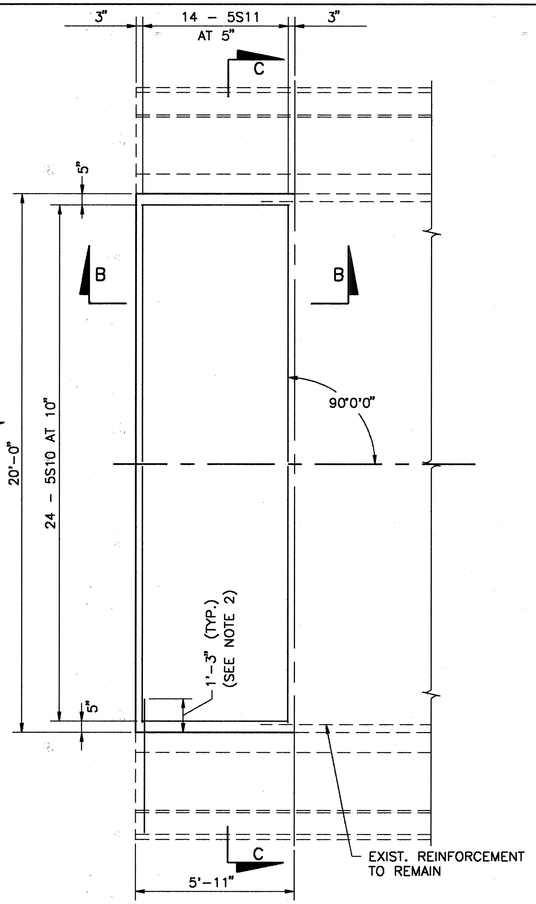

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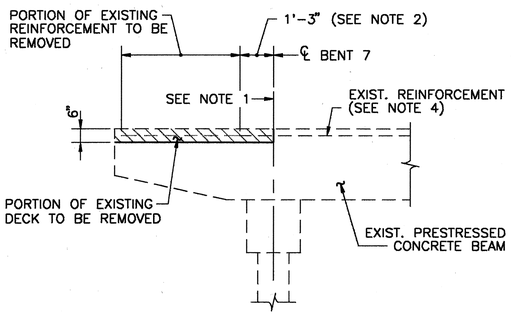
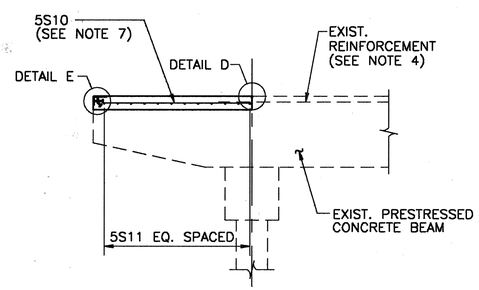


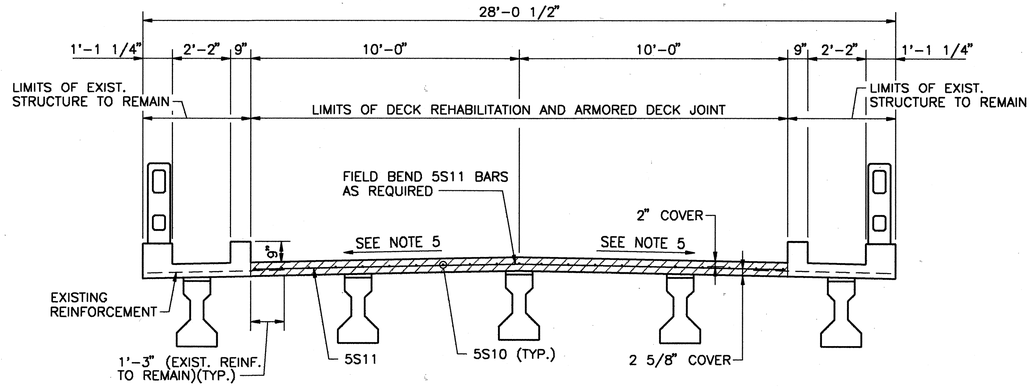
SECTION A-A

DEMOLITION PHASE

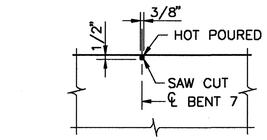


SECTION B-B

CONSTRUCTION PHASE



SECTION C-C



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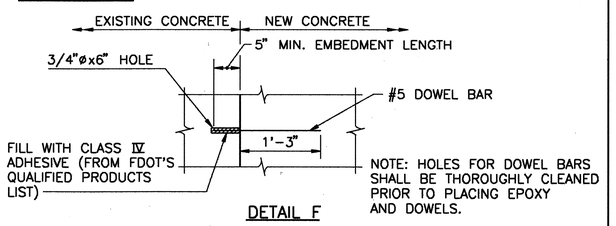

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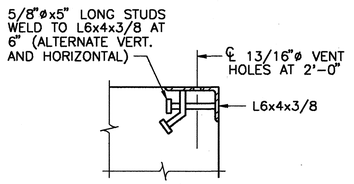

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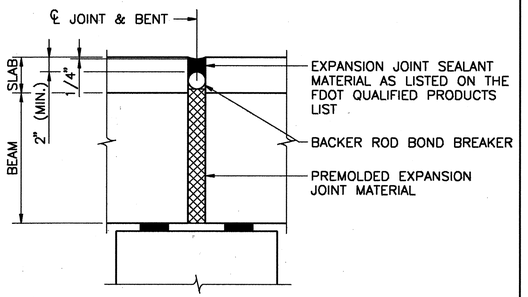

OPEN JOINT REPAIR DETAIL

(REQ'D. AT EB1, BENTS 2,3,4,5,8,9,10, EB11)

NOTES:

1. SCORE CONCRETE FOR FULL LENGTH OF SPAN BEING REPLACED BY SCORING TO THE TOP OF REINFORCING BARS. CONTRACTOR SHALL AVOID DAMAGE TO REINFORCING STEEL DURING SCORING OPERATION AND SLAB REMOVAL.
2. THE CONTRACTOR SHALL REMOVE THE DECK IN THE AREA SHOWN, LEAVING THE EXISTING REINFORCEMENT. THE EXPOSED REINFORCEMENT SHALL BE WIRE BRUSH CLEANED, STRAIGHTENED AND EMBEDDED IN NEW SLAB. IF BARS ARE BROKEN OR OTHERWISE DETERMINED TO BE UNSATISFACTORY BY THE ENGINEER, THEY SHALL BE REPLACED BY DOWEL BARS (SEE DETAIL F).
3. ALL CONTACTING SURFACES BETWEEN OLD AND NEW CONCRETE SHALL BE CLEANED IMMEDIATELY BEFORE CASTING CONCRETE.
4. THE EXISTING REINFORCEMENT IS ASSUMED TO BE #4 BARS AT 12". THE CONTRACTOR SHALL FIELD VERIFY AND ADJUST THE SPACING OF NEW REINFORCEMENT TO SPLICE WITH EXISTING REINFORCEMENT.
5. MATCH DIMENSIONS, CROSS SLOPE AND LONGITUDINAL SLOPE WITH THE EXISTING DECK.
6. ▨ DENOTES EXISTING STRUCTURE TO BE REMOVED.
7. IF THE EXISTING REINFORCEMENT SPACING DOES NOT ACCOMODATE THE PROPOSED REINFORCEMENT SPACING, THE CONTRACTOR SHALL SUBMIT THE DECK SLAB DESIGN (BASED ON THE SPACING OF THE EXISTING REINFORCEMENT) TO THE ENGINEER FOR APPROVAL (OR) THE CONTRACTOR SHALL MEET THE FOLLOWING CRITERIA:
   A. MAIN REINFORCEMENT (PERPENDICULAR TO TRAFFIC) = 0.74 SQ. IN. PER FT. WIDTH OF SLAB.
   B. DISTRIBUTION REINFORCEMENT (LONGITUDINAL TO TRAFFIC = 0.33 SQ. IN. PER FT WIDTH OF SLAB.

* ESTIMATED QUANTITIES		
ITEM	UNIT	QUANTITY
CONCRETE CLASS IV (SUPERSTRUCTURE)	CY	13.40
REINFORCING STEEL (SUPERSTRUCTURE)	LB	1,100
CLEANING AND SEALING DECK JOINTS	LF	252
EXPANSION JOINT	LF	20

* QUANTITIES ARE FOR DECK REPAIRS ONLY.

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REVISIONS			REVISIONS		
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	Names	Dates
Drawn by	TJL	5-95
Checked by	MRC	5-95
Designed by	MRC	5-95
Checked by	TJF	5-95
Approved by	T.J. FARRELL	

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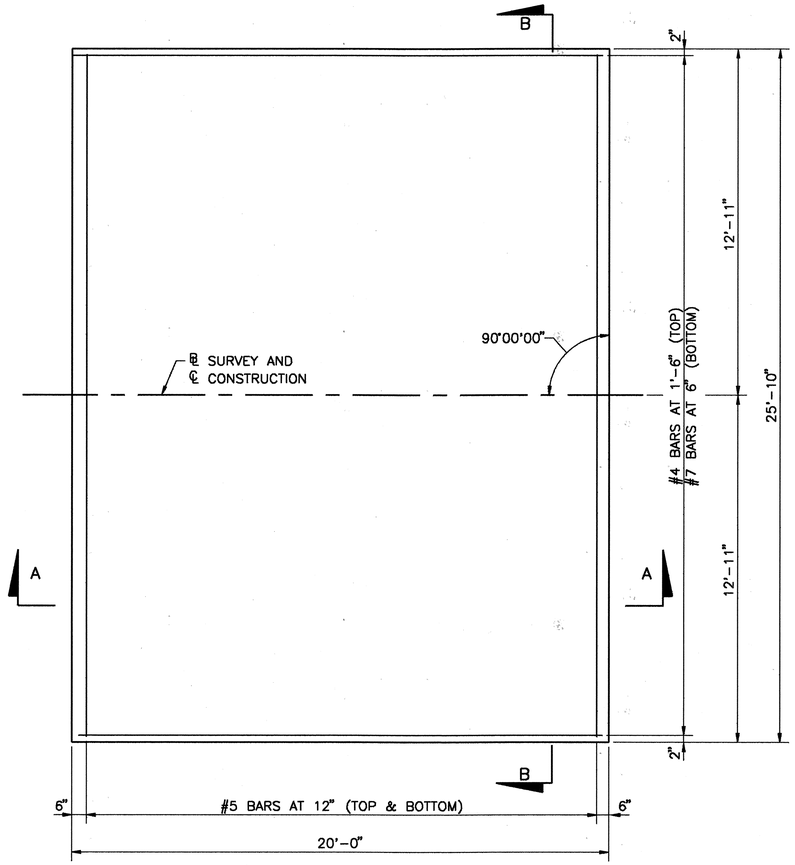
DSA GROUP, INC.
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

PINELLAS COUNTY DEPARTMENT OF PUBLIC WORKS

SHEET TITLE: CONCRETE DECK REPLACEMENT AND JOINT DETAILS

PROJECT NAME: BECKETT BRIDGE REPAIRS

SHEET S-15



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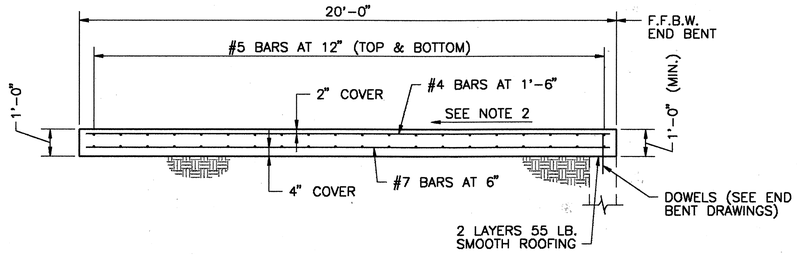
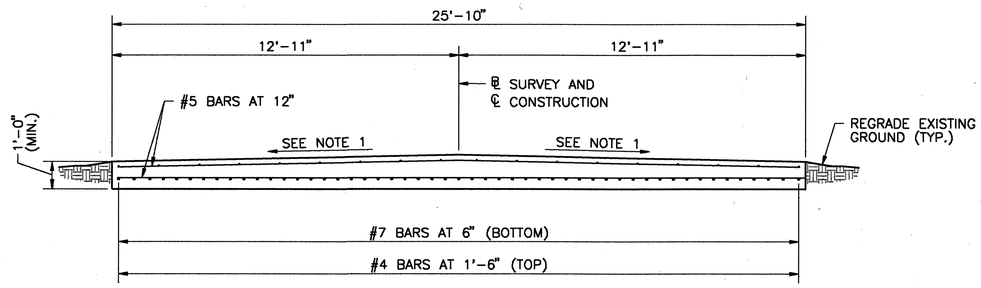


SECTION A-A



SECTION B-B

* ESTIMATED QUANTITIES		
ITEM	UNIT	QUANTITY
CONCRETE	CY	19.1
REINFORCING STEEL	LB	3,111

* QUANTITIES FOR ONE APPROACH SLAB ONLY

NOTES:
1. MATCH WITH EXISTING CROSS SLOPE.
2. MATCH WITH EXISTING LONGITUDINAL SLOPE.
3. PAYMENT FOR APPROACH SLAB CONCRETE, REINFORCING STEEL AND THE INCIDENTALS RELATING THERETO SHALL BE PAID UNDER UNIT PRICE FOR APPROACH SLABS, ITEM NO. 360-1.
4. THE COST FOR REGRADING THE EXISTING GROUND TO THE ELEVATION OF APPROACH SLABS SHALL BE INCLUDED IN THE UNIT PRICE FOR APPROACH SLABS.

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REVISIONS			REVISIONS		
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	Names	Dates
Drawn by	TJL	5-95
Checked by	MRC	5-95
Designed by	MRC	5-95
Checked by	TJF	5-95
Approved by	T. J. FARRELL	

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2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

PINELLAS COUNTY
DEPARTMENT OF
PUBLIC WORKS

SHEET TITLE:
APPROACH SLAB DETAILS

PROJECT NAME:
BECKETT BRIDGE REPAIRS

SHEET
S-16

BARRIER GATE SUPPORT (NO. REQ'D. = 1)

MARK		LENGTH	NO. BARS	TYPE BAR	STYLE		B	C	D	E	F	H	J	K	N	θ
SIZE	DES.	FT.-IN.			A	G	FT.-IN.	FT.-IN.	FT.-IN.	FT.-IN.	FT.-IN.	FT.-IN.	FT.-IN.	FT.-IN.	NO.	ANG.
5	S1	5-8	7	1			5-8									
5	S2	8-9	6	12			3-4	5-5								30
5	S3	6-2	12	1			6-2									

TRAFFIC GATE SUPPORT (NO. REQ'D. = 2)

MARK		LENGTH	NO. BARS	TYPE BAR	STYLE		B	C	D	E	F	H	J	K	N	θ
SIZE	DES.	FT.-IN.			A	G	FT.-IN.	FT.-IN.	FT.-IN.	FT.-IN.	FT.-IN.	FT.-IN.	FT.-IN.	FT.-IN.	NO.	ANG.
5	S4	4-8	6	1			4-8									
5	S5	7-9	5	12			2-7	5-2								31
5	S6	5-0	11	1			5-0									

LIGHT POLE PILASTERS (NO. REQ'D. = 1)

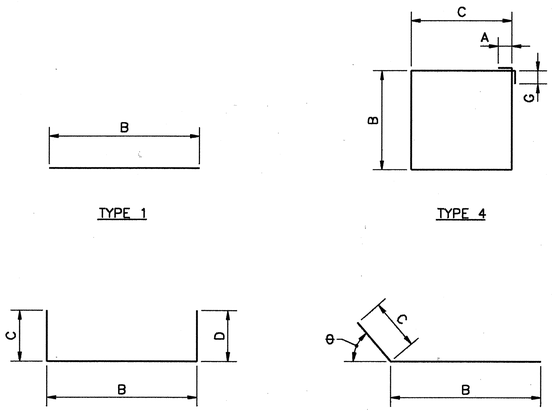
MARK		LENGTH	NO. BARS	TYPE BAR	STYLE		B	C	D	E	F	H	J	K	N	θ
SIZE	DES.	FT.-IN.			A	G	FT.-IN.	FT.-IN.	FT.-IN.	FT.-IN.	FT.-IN.	FT.-IN.	FT.-IN.	FT.-IN.	NO.	ANG.
5	S7	3-2	2	11			2-2	0-6	0-6							
5	S8	7-2	4	4	6	6	0-11	2-2								
8	S1	2-4	6	1			2-4									

DECK SLAB - SPAN 7 (NO. REQ'D. = 1)

MARK		LENGTH	NO. BARS	TYPE BAR	STYLE		B	C	D	E	F	H	J	K	N	θ
SIZE	DES.	FT.-IN.			A	G	FT.-IN.	FT.-IN.	FT.-IN.	FT.-IN.	FT.-IN.	FT.-IN.	FT.-IN.	FT.-IN.	NO.	ANG.
5	S10	5-7	24	1			5-7									
5	S11	20-0	14	1			20-0									

CONTROL PLATFORM (NO. REQ'D. = 1)

MARK		LENGTH	NO. BARS	TYPE BAR	STYLE		B	C	D	E	F	H	J	K	N	θ
SIZE	DES.	FT.-IN.			A	G	FT.-IN.	FT.-IN.	FT.-IN.	FT.-IN.	FT.-IN.	FT.-IN.	FT.-IN.	FT.-IN.	NO.	ANG.
4	CP1	22-6	7	1			22-6									
4	CP2	7-3	23	1			7-3									



BAR BENDING DETAILS

R:\84065\CADD\BRIDGE
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REVISIONS			REVISIONS		
Date	By	Description	Date	By	Description

SEAL:

	Names	Dates
Drawn by	TJL	5-95
Checked by	MRC	5-95
Designed by	MRC	5-95
Checked by	TJF	5-95
Approved by	T. J. FARRELL	

Timothy J. Farrell

DSA GROUP INC.

DSA GROUP, INC.
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

PINELLAS COUNTY FLORIDA

PINELLAS COUNTY
DEPARTMENT OF
PUBLIC WORKS

SHEET TITLE: REINFORCING BAR LIST

PROJECT NAME: BECKETT BRIDGE REPAIRS

SHEET S-17

ELECTRICAL SYMBOLS AND ABBREVIATIONS

SYMBOL	DESCRIPTION	MOUNTING
	FENDER NAVIGATION LIGHT (RED)	FENDERS
	CLEARANCE GUAGE FLOODLIGHT, (ARROW SHOWS AIMING)	FENDERS
	LIGHTING FIXTURE, (SQUARE) CEILING TYPE	SEE FIXTURE SCHEDULE
	LIGHTING FIXTURE, WALL BRACKET TYPE	SEE FIXTURE SCHEDULE
	FLUORESCENT FIXTURE	SEE FIXTURE SCHEDULE
	FLUORESCENT STRIP	SEE FIXTURE SCHEDULE
	INDICATOR LIGHT – WALL BRACKET TYPE	SEE FIXTURE SCHEDULE
S_a	SINGLE POLE SWITCH – LETTER IF SHOWN INDICATES LIGHT CONTROLLED, 20A	℄ 48" AFF OR AS NOTED
S_3	THREE–WAY SWITCH, 20A	℄ 48" AFF OR AS NOTED
S_K	KEY OPERATED SWITCH, 20A	℄ 48" AFF OR AS NOTED
	SWITCH WITH PILOT LIGHT, 20A	℄ 48" AFF OR AS NOTED
	DUPLEX RECEPTACLE, 125V, 20A	℄ 18" AFF OR AS NOTED
	QUADRAPLEX RECEPTACLE,125V,20A	AS NOTED
	RECEPTACLE, 250V, 30A	℄ 18" AFF OR AS NOTED
	SPECIAL RECEPTACLE AS NOTED	℄ 18" AFF OR AS NOTED

SYMBOL	DESCRIPTION	MOUNTING
	ELECTRICAL PANEL 480 VOLT	SEE PANEL SCHEDULE
	ELECTRICAL PANEL 208 OR 240 VOLT	SEE PANEL SCHEDULE
T	TRANSFORMER	AS REQUIRED
3 NF 30 3R	HEAVY DUTY DISCONNECT SWITCH INDICATES FUSE SIZE, NF=NONFUSED, X=SIZE PER MOTOR NAMEPLATE INDICATES NEMA TYPE ENCLOSURE, IF NONE SHOWN=NEMA 1 INDICATES FRAME SIZE INDICATES # OF POLES	AS REQUIRED
M	MANUAL MOTOR STARTER	AS REQUIRED
	MAGNETIC MOTOR STARTER	AS REQUIRED
3 NF 1 3R	COMBINATION MAGNETIC MOTOR STARTER INDICATES FUSE OR CIRCUIT BREAKER SIZE, NF=NONFUSED INDICATES NEMA TYPE ENCLOSURE, IF NONE SHOWN=1 INDICATES STARTER SIZE INDICATES # OF POLES	AS REQUIRED
3 S F	FRACTIONAL HORSEPOWER RATED TOGGLE SWITCH, WITH THERMAL ELEMENTS, # = POLES	AS REQUIRED
(5)	MOTOR, CONNECTION, NUMERIAL = H.P. F = FRACTIONAL	AS REQUIRED
W	TELEPHONE OUTLET WITH MIN. 3/4" CONDUIT TO TELEPHONE TERMINAL BOARD U.O.N.	℄ 18" AFF W = ℄ 48" AFF
PS	TELEPHONE OUTLET (P.S. FOR PAY STATION) W/MIN. 3/4"C. TO TELE. TER. BOARD U.O.N.	℄ 54" AFF OR AS NOTED
	INTERCOM OUTLET AND DESK SET	℄ 18" AFF OR AS NOTED
	INTERCOM SET, WALL MOUNTED	℄ 54" AFF OR AS NOTED
B	ALARM BELL OR GONG	AS REQUIRED

SYMBOL	DESCRIPTION	MOUNTING
C	CONTACTOR	AS REQUIRED
PE	PHOTO ELECTRIC CONTROL	CEILING MOUNTED
R	RELAY	AS REQUIRED
J	JUNCTION BOX	AS REQUIRED
PB	PULL BOX	AS REQUIRED
	DRIVEN GROUND, 3/4" x 10' COPPERWELD U.O.N.	
	CONDUIT, CONCEALED IN CEILING SPACE, WALL OR FLOOR	
–UC–	CONDUIT RUN UNDERGROUND	
	CONDUIT RUN EXPOSED	
	HOME RUN TO PANEL (NO. OF CKT'S ARE INDICATED BY NO. OF ARROWS)	
	CONDUIT RUN–UP OR RUN–DOWN	
T	HOME RUN TO TELEPHONE TERMINAL CABINET	
PHASE NEUTRAL	NO. OF SLASHES EQUAL NO. OF WIRES NO. SLASHES=2 #12 AWG MIN. W/GROUND, OTHER SIZES NOTED. EQUIPMENT GREEN GRND. WIRE NOT SHOWN BUT REQUIRED AS SPECIFIED.	

SYMBOL	DESCRIPTION	MOUNTING
	FUSED SWITCH	AS REQUIRED
	MOLDED CASE CIRCUIT BREAKER TRIP AND FRAME RATING AS INDICATED	AS REQUIRED
	FUSE	AS REQUIRED
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR, GROUNDED	AS REQUIRED
VS	VOLTMETER SWITCH	AS REQUIRED
AS	AMMETER SWITCH	AS REQUIRED
A	AMMETER	AS REQUIRED
V	VOLTMETER	AS REQUIRED
KW	KILOWATT METER	AS REQUIRED
WH	WATT–HOUR METER	AS REQUIRED
	LIGHTNING ARRESTOR	AS REQUIRED
	PUSH–BUTTON STATION OR SWITCH K = KEY OPERATED	AS REQUIRED
	POTENTIAL, CONTROL OR POWER TRANSFORMER	AS REQUIRED
	3/4"ø x 10' LG. COPPERWELD GROUND ROD.	MOUNTED MINIMUM 18" BELOW GRADE
	CADWELD CONNECTION	
	AIR TERMINAL	AS REQUIRED
1	GENERAL NOTE NO.	
	CONTACTOR OR CONTACT	
	MANUAL CONTROLLERS ON–OFF / START–STOP	
LS	LIMIT SWITCH	
TF	TACHOMETER FEEDBACK	

ABBREVIATIONS:

AF	– AMPERE FRAME
AFF	– ABOVE FINISHED FLOOR
AT	– AMPERE TRIP
ATS	– AUTOMATIC TRANSFER SWITCH
BFG	– BELOW FINISHED GRADE
C	– CONDUIT
CB,C/B	– CIRCUIT BREAKER
CKT	– CIRCUIT
CLF	– CURRENT LIMITING FUSE
CLG	– CEILING
CPT	– CONTROL POWER XFMR.
DISC	– DISCONNECT
DN	– DOWN
ELEC	– ELECTRIC
EMERG	– EMERGENCY
ENCL	– ENCLOSURE
EP	– EMERGENCY PANEL
EQ	– EQUIPMENT
EX	– EXPLOSION PROOF
EXIST	– EXISTING
FA	– FIRE ALARM
FAA	– FIRE ALARM ANNUNCIATOR
FACP	– FIRE ALARM CONTROL PANEL
FC	– FLEX CABLE
FIXT	– FIXTURE
FLA	– FULL LOAD AMPERES
FS	– FLOAT SWITCH
G	– GROUNDED, GROUNDING
GRND	– GROUND
GFI	– GROUND FAULT INTERRUPTER
GRS	– GALVANIZED RIGID STEEL
HID	– HIGH INTENSITY DISCHARGE
d	– DEDICATED OUTLET/CIRCUIT
HOA	– HAND OFF AUTOMATIC
HP	– HORSEPOWER
HORIZ	– HORIZONTAL
JB	– JUNCTION BOX
LRA	– LOCKED ROTOR AMPERES
LS	– LIMIT SWITCH
LTG	– LIGHTING
LTS	– LIGHTS
MCB	– MAIN CIRCUIT BREAKER
MCC	– MOTOR CONTROL CENTER
MCP	– MOTOR CIRCUIT PROTECTOR
MH	– MANHOLE
MLO	– MAIN LUGS ONLY
MS	– MOTOR STARTER
MTD	– MOUNTED
MTG	– MOUNTING
N	– NEUTRAL
NO.	– NUMBER
OL	– OVERLOAD
PB	– PULL BOX
P/D	– PULLED/DRIVEN
PL	– PILOT LIGHT
PNL	– PANEL
PWR	– POWER
RC	– REEL CABLE
RECEPT	– RECEPTACLE
SC	– SUBMARINE CABLE
SPEC	– SPECIFICATIONS
SW	– SWITCH
TEL	– TELEPHONE
TF	– TACHOMETER FEEDBACK
TL	– TWISTLOCK
TVSS	– TRANSIENT VOLTAGE SURGE SUPPRESSOR
U.O.N.	– UNLESS OTHERWISE NOTED
UPS	– UNINTERRUPTIBLE POWER SUPPLY
VSD	– VARIABLE SPEED DRIVE
VERT	– VERTICAL
W/G	– PROTECTIVE WIRE GUARD
WHM	– WATT HOUR METER
WP	– WEATHER PROOF
XDCR	– TRANSDUCER
XFMR	– TRANSFORMER
3P	– 3 POLES
3W	– 3 WIRES

SCHEMATIC DIAGRAM SYMBOLS

TERMINALS
- MOTOR STARTER
- 1 CONTROL PANEL
- 2 CONTROL DESK
- D DRIVE SYSTEM PANEL
- G GATE OPERATOR
- SPANLOCK OPERATOR
- S SUBMARINE CABLE (CABINET–CABLE–CABINET)
- PANEL WIRING
- FIELD WIRING

LIMIT SWITCH – LS
- NORMALLY CLOSED
- NORMALLY CLOSED HELD OPEN
- NORMALLY OPEN
- NORMALLY OPEN HELD CLOSED

(LIMIT SWITCHES ARE SHOWN WITH BRIDGE DOWN, LOCKS DRIVEN AND TRAFFIC GATES UP)

PRESSURE OR VACUUM SWITCH – PS
- NORMALLY OPEN CLOSES ON RISING PRESSURE
- NORMALLY CLOSED OPENS ON RISING PRESSURE

TEMPERATURE SWITCH OR THERMOSTAT – TS
- NORMALLY OPEN CLOSES ON RISING TEMPERATURE
- NORMALLY CLOSED OPENS ON RISING TEMPERATURE

FLOAT SWITCH – FS
- NORMALLY OPEN CLOSES ON RISING LEVEL
- NORMALLY CLOSED OPENS ON RISING LEVEL

TIME DELAY RELAY CONTACTS
- TIME DELAY CLOSE ON ENERGIZATION
- TIME DELAY OPEN ON ENERGIZATION
- TIME DELAY CLOSE ON DEENERGIZATION
- TIME DELAY OPEN ON DEENERGIZATION

HAND SWITCH – HS
- TOGGLE SWITCH
- HOA HAND–OFF–AUTO (LOCAL–OFF–REMOTE)
- PUSHBUTTON
- NORMALLY OPEN
- NORMALLY CLOSED

INDICATOR LIGHT – IL (R)
- R – RED
- G – GREEN
- A – AMBER
- O – ORANGE
- B – BLUE
- W – WHITE

RELAY COIL (MR)
- 27 UNDERVOLTAGE
- CR CONTROL RELAY
- TR TIME DELAY RELAY
- M MOTOR CONTACTOR
- MF MOTOR FORWARD CONTACTOR
- MR MOTOR REVERSE CONTACTOR
- PE PHOTOELECTRIC RELAY

RELAY CONTACTS
- NORMALLY OPEN CONTACT
- NORMALLY CLOSED CONTACT

NEMA STYLE OPERATORS
- MUSHROOM HEAD BUTTON PUSH/PULL OPERATION
- PUSHBUTTON STATION MOMENTARY OPERATION
- SELECTOR SWITCH, POSITIONS AS INDICATED
- KEY OPERATED SWITCH

NOTES:
1. ALL SYMBOLS SHOWN ON DRAWINGS IN DASHED LINES OR WITH (E) ARE EXISTING. U.O.N.
2. EQUIPMENT AND DEVICES SHOWN HATCHED SHALL BE REMOVED.
3. THESE ARE STANDARD SYMBOLS AND MAY NOT APPEAR ON THE PROJECT DRAWINGS; HOWEVER, WHEREVER THE SYMBOL ON THE PROJECT DRAWING OCCURS, THE ITEM SHALL BE PROVIDED AND INSTALLED.

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REVISIONS			REVISIONS		
Date	By	Description	Date	By	Description

SEAL:

	Names	Dates
Drawn by	ALC	5–95
Checked by	GMM	5–95
Designed by	GMM	5–95
Checked by	RMC	5–95
Approved by	G.M. MOSCINSKI	

DSA GROUP INC.

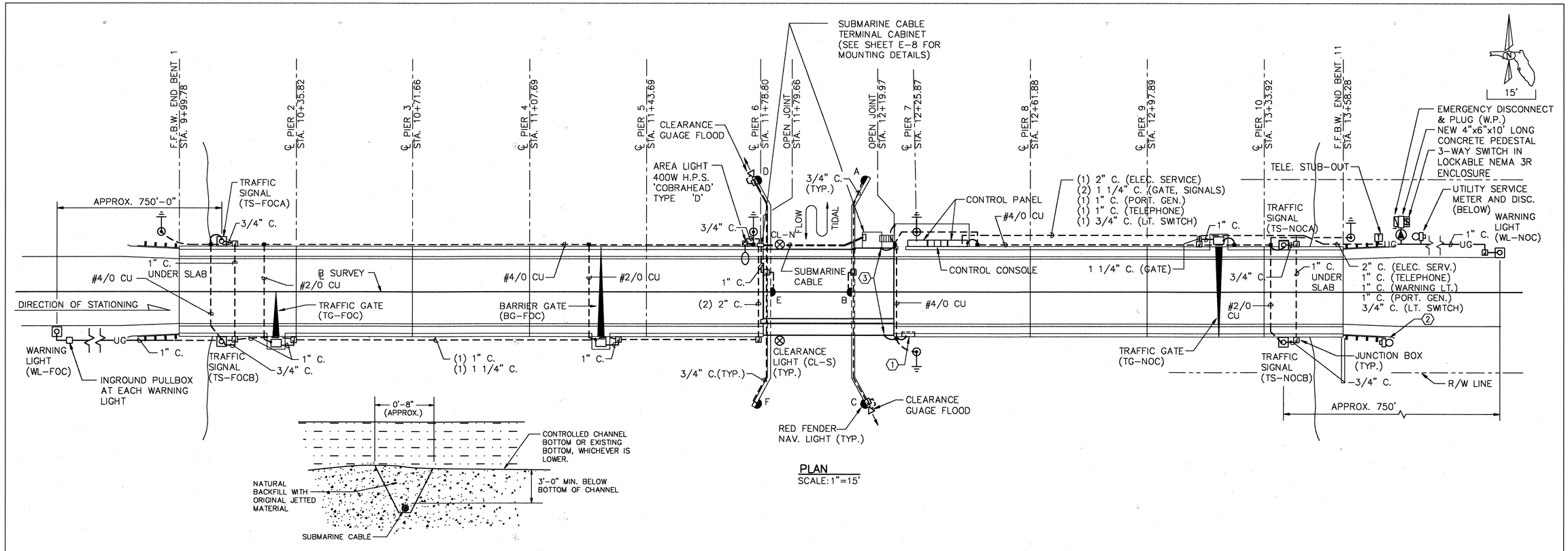
DSA GROUP, INC.
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

PINELLAS COUNTY DEPARTMENT OF PUBLIC WORKS

SHEET TITLE: ELECTRICAL SYMBOLS AND ABBREVIATIONS

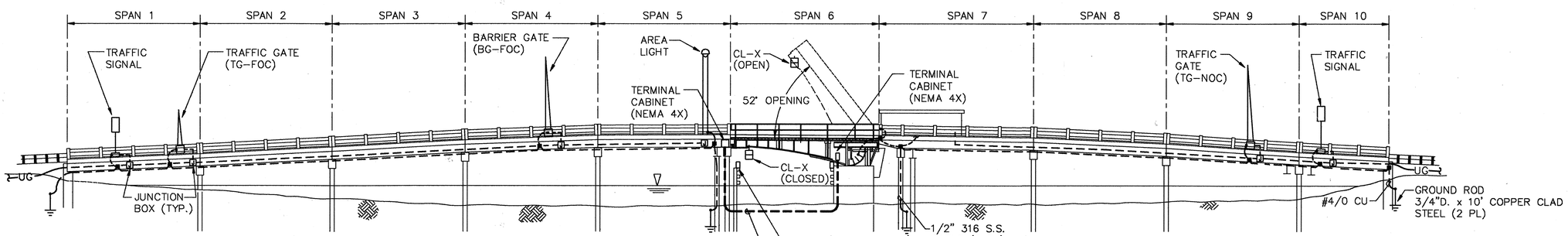
PROJECT NAME: BECKETT BRIDGE REPAIRS

SHEET E–1



PLAN
SCALE: 1"=15'

SUBMARINE CABLE INSTALLATION DETAIL
SCALE: NONE



ELEVATION
SCALE: 1"=15'

NOTES:

1. REFER TO SHEET S-8 & S-9 FOR CONDUIT AND JUNCTION BOX LOCATIONS UNDER BRIDGE, AT GATES AND AT SIGNALS.
2. PROVISION SHALL BE MADE TO RE-USE THE EXISTING SERVICE ALONG WITH A NEW STARTER FOR THE EMERGENCY DRIVE MOTOR TO OPERATE THE BRIDGE DURING THE CONSTRUCTION PHASE. NEW STARTER SHALL BE SIZE 1, REVERSING COMBINATION TYPE IN NEMA 4X ENCLOSURE WITH LOCKABLE DISCONNECT AND SURFACE MOUNTED CONTROLS.

DRAWING NOTES:

(1) EXISTING CONTROL CABINET, ALL CONDUIT AND WIRING, INCLUDING FEEDS TO EXISTING DRIVE MOTOR, FENDER LIGHTS AND TRAFFIC SIGNALS TO BE DEMOLISHED AFTER NEW OR TEMPORARY SERVICE IS IN OPERATION. LOCATE NEW EMERG. STARTER IN EXIST. CABINET FOR TEMPORARY BRIDGE OPERATION DURING CONSTRUCTION.

(2) EXISTING UTILITY SERVICE LOCATION. METER AND FEEDER TO BE DEMOLISHED UPON COMPLETION OF NEW SERVICE, CONTROLS AND DRIVE MOTOR INSTALLATION.

(3) PROVIDE FLEXIBLE BOND AT TRUNNION. BOND ALL METAL HANDRAILS, CONTROL SHED AND PANELS.

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REVISIONS			REVISIONS		
Date	By	Description	Date	By	Description

SEAL:

	Names	Dates
Drawn by	ALC	5-95
Checked by	GMM	5-95
Designed by	GMM	5-95
Checked by	RMC	5-95
Approved by	G.M. MOSCINSKI	

DSA GROUP INC.

DSA GROUP, INC.
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

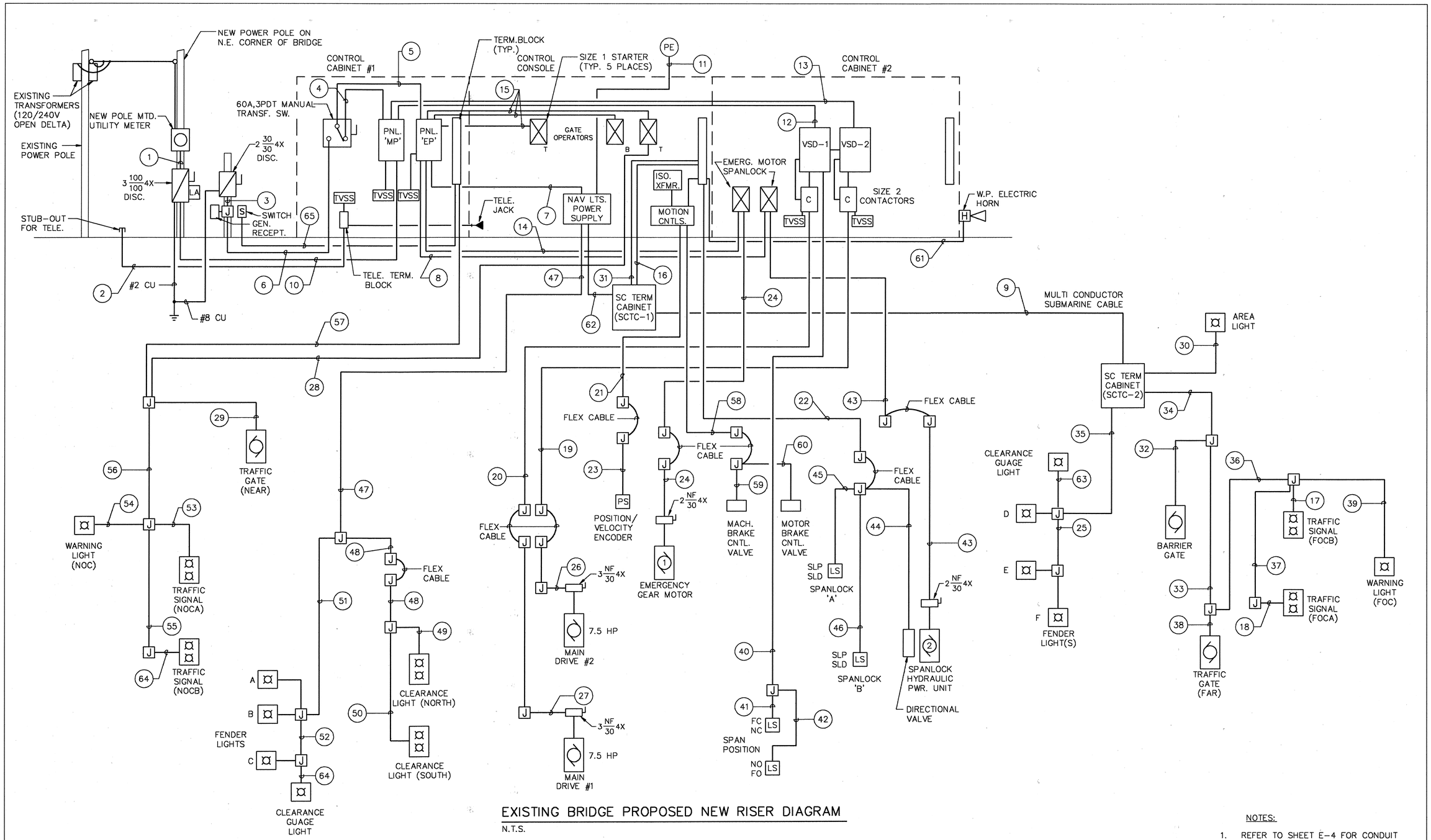
PINELLAS COUNTY DEPARTMENT OF PUBLIC WORKS

BRIDGE NO. 154000

SHEET TITLE: ELECTRICAL SITE PLAN

PROJECT NAME: BECKETT BRIDGE REPAIRS

SHEET E-2



EXISTING BRIDGE PROPOSED NEW RISER DIAGRAM

N.T.S.

NOTES:

1. REFER TO SHEET E-4 FOR CONDUIT AND CABLE SCHEDULE.

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REVISIONS			REVISIONS		
Date	By	Description	Date	By	Description

SEAL:

	Names	Dates
Drawn by	ALC	5-95
Checked by	GMM	5-95
Designed by	GMM	5-95
Checked by	RMC	5-95
Approved by	G.M. MOSCINSKI	

DSA GROUP INC.

DSA GROUP, INC.
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

PINELLAS COUNTY FLORIDA
BOARD OF COUNTY COMMISSIONERS

PINELLAS COUNTY
DEPARTMENT OF
PUBLIC WORKS

SHEET TITLE: RISER DIAGRAM

PROJECT NAME: BECKETT BRIDGE REPAIRS

SHEET E-3

COND. NO.	SIZE	FROM	TO	CONDUCTORS		
				NO.	SIZE	DESIGNATION
1	2	UTILITY METER	SERVICE DISCONNECT (NORMAL)	4	1/0	L1,L2,L3,N
				1	2	GND
2	1	TELEPHONE PEDESTAL	TEL. TERM. BLOCK	6 PR	24	TELEPHONE
3	3/4	EMERG. RECEPTACLE	EMERG. DISCONNECT	3	10	E1,E2,N
				1	10	GND
4	1	PANEL 'MP'	MAN. XFER. SWITCH	3	6	MP-2,4,N
				1	10	GND
5	1	MAN. XFER. SWITCH	EMERG. PANEL 'EP'	3	6	X1,X2,N
				1	10	GND
6	1	EMERG. DISCONNECT 3-WAY SWITCH	MAN. XFER. SWITCH CONTROL CONSOLE	3	6	E1,E2,N
				1	10	GND
7	⟨2⟩	EMERG. PANEL 'EP'	NAV. LTS. POWER SUPPLY	2	12	EP-13,N
				1	12	GND
8	⟨2⟩	EMERG. PANEL 'EP'	EMERG. DRIVE STARTER	2	10	EP-10,12
				1	12	GND
9	SUBM. CABLE	SCTC-1	SCTC-2	24	10	POWER (9 SPARE)
				48	12	CONTROL (12 SPARE)
				4	10	GND (1 SPARE)
10	2	SERVICE DISCONNECT	SERVICE PANEL 'MP'	4	1/0	L1,L2,L3,N
				1	2	GND
11	1/2	NAV. LTS. POWER SUPPLY	P.E. SWITCH	3	14	-
				1	12	GND
12	⟨2⟩	SERVICE PANEL 'MP'	VSD-1	3	10	MP-1,3,5
				1	10	GND
13	⟨2⟩	SERVICE PANEL 'MP'	VSD-2	3	10	MP-7,9,11
				1	10	GND
14	⟨2⟩	EMERG. PANEL 'EP'	SPANLOCK STARTER	2	10	EP-2,4
				1	12	GND
15	⟨2⟩	EMERG. PANEL 'EP'	GATE OPERATOR STARTER (TYP.)	2	10	EP-1,3 (EP-5,7) (EP-9,11)
				1	12	GND
16	2	CONTROL CONSOLE	SCTC-1	12	10	NAV-1,N,EP-5,7,9,11,N,TS-1,WS-1,N, MP-12,SW,N
				6	10	SPARE
				4	10	GND
17	3/4	JUNCTION BOX	TRAFFIC SIGNAL (FOCB)	2	10	TS-1,N
				2	12	CONTROL
				1	10	GND
18	3/4	JUNCTION BOX	TRAFFIC SIGNAL (FOCB)	2	10	TS-1,N
				2	12	CONTROL
				1	10	GND
19	3/4	VSD-2 CONTACTOR	JUNCTION BOX	3	10	MP-7,9,11
				1	10	GND
20	3/4	VSD-1 CONTACTOR	JUNCTION BOX	3	10	MP-1,3,5
				1	10	GND
21	3/4	MOTION CONTROLLER	JUNCTION BOX (OPTICAL ENCODER)			PER ENCODER MFR. REQMT'S
22	1	JUNCTION BOX (SPANLOCK)	TERMINAL BLOCK	19	14	SPANLOCK LIMIT SW'S, DIR. VALVE
23	3/4	JUNCTION BOX	POSITION/VELOCITY ENCODER	4	18 SH	ENCODER SIGNALS
24	3/4	EMERG. MOTOR STARTER	DISCONNECT SWITCH (EMERG. GEAR MOTOR)	2	10	EP-10,12
				1	12	GND

COND. NO.	SIZE	FROM	TO	CONDUCTORS		
				NO.	SIZE	DESIGNATION
25	3/4	JUNCTION BOX	(JUNCTION BOX) (FENDER LIGHTS, CLEARANCE GAUGE LIGHT)	3	10	NAV-1,PE,N
				2	12	CONTROL
				1	10	GND
26	3/4	JUNCTION BOX	DISCONNECT SWITCH (MAIN DRIVE #2)	3	10	MP-7,9,11
				1	10	GND
27	3/4	JUNCTION BOX	DISCONNECT SWITCH (MAIN DRIVE #1)	3	10	MP-1,3,5
				1	10	GND
28	1 1/4	GATE OPERATOR STARTER (NEAR TRAFFIC)	JUNCTION BOX	2	10	EP-1,3
				8	12	CONTROL
				1	12	GND
29	1	JUNCTION BOX	NEAR TRAFFIC GATE	2	10	EP-1,3
				8	12	CONTROL
				1	12	GND
30	3/4	SCTC-2	AREA LIGHT	3	10	MP-12,SW,N
				1	12	GND
31	2	SCTC-1	CONTROL CONSOLE	48	12	CONTROLS
32	1 1/4	JUNCTION BOX	BARRIER GATE	3	10	EP-9,11,N
				16	12	CONTROL
				1	10	GND
33	1 1/4	JUNCTION BOX	JUNCTION BOX (GATE, SIGNALS, WARNING LIGHT)	7	10	EP-5,7,N,TS-1,N,WS-1,N
				12	12	CONTROL
				2	10	GND
34	(2) 2	SCTC-2	JUNCTION BOX (GATES, SIGNALS)	9	10	EP-5,7,9,11,N,TS-1,N,WS-1,N
				32	12	CONTROL
				3	10	GND
35	1	SCTC-2	JUNCTION BOX (FENDER LIGHTS AND CLEARANCE GUAGE LIGHT)	3	10	NAV-1,PE,N
				4	12	CONTROL
				1	10	GND
36	1	JUNCTION BOX	JUNCTION BOX (TRAFFIC SIGNALS, WARNING LIGHT)	4	10	TS-1,N,WS-1,N
				4	12	CONTROL
				1	10	GND
37	1	JUNCTION BOX	JUNCTION BOX TRAFFIC SIGNAL (FOCA) (FOCB)	2	10	TS-1,N
				2	12	CONTROL
				1	10	GND
38	1	JUNCTION BOX	TRAFFIC GATE (FAR)	3	10	EP-5,7,N
				8	12	CONTROL
				1	10	GND
39	1	JUNCTION BOX	WARNING LIGHT (FOC)	2	10	WS-1,N
				1	10	GND
40	3/4	VSD-1	JUNCTION BOX (SPAN LIMIT SWITCHES)	8	14	FC-1,2,NC-1,2,NO-1,2,FO-1,2
41	3/4	JUNCTION BOX	LIMIT SWITCH FC/NC	4	14	FC-1,FC-2,NC-1,NC-2
42	3/4	JUNCTION BOX	LIMIT SWITCH NO/FO	4	14	NO-1,NO-2,FO-1,FO-2
43	3/4	SPANLOCK STARTER	DISCONNECT SWITCH (HYD. PWR. UNIT)	2	10	EP-2,4
				1	12	GND

COND. NO.	SIZE	FROM	TO	CONDUCTORS		
				NO.	SIZE	DESIGNATION
44	3/4	SPANLOCK HYDRAULIC POWER UNIT (DIRECTIONAL VALVE)	JUNCTION BOX (LIMIT SWITCHES)	3	14	-
45	3/4	JUNCTION BOX	LIMIT SWITCHES SPANLOCK 'A'	8	14	SLAP-1,2,3,4,SLAD-1,2,3,4 ⟨1⟩
46	3/4	JUNCTION BOX	LIMIT SWITCHES SPANLOCK 'B'	8	14	SLBP-1,2,3,4,SLBD-1,2,3,4 ⟨1⟩
47	1	NAV. LTS. POWER SUPPLY	JUNCTION BOX (NAVIGATION LIGHTS)	3	12	NAV-2,PE,N
				8	12	CONTROLS
				1	12	GND
48	3/4	JUNCTION BOX (FLEX CABLE)	CLEARANCE LIGHTS	2	12	NAV-2,N
				2	12	CONTROLS
				1	12	GND
49	3/4	JUNCTION BOX	CLEARANCE LIGHT (NORTH)	2	12	NAV-2,N
				2	12	CONTROLS
				1	12	GND
50	3/4	JUNCTION BOX	CLEARANCE LIGHT (SOUTH)	2	12	NAV-2,N
				2	12	CONTROLS
				1	12	GND
51	3/4	JUNCTION BOX	JUNCTION BOX (FENDER LIGHTS & CLEARANCE GUAGE LIGHT)	3	12	NAV-2,PE,N
				4	12	CONTROLS
				1	12	GND
52	3/4	FENDER LIGHT	CLEARANCE GUAGE LIGHT	3	12	NAV-2,PE,N
				1	12	GND
53	1	JUNCTION BOX	TRAFFIC SIGNAL (NOCA)	2	12	TS-2,N
				2	12	CONTROLS
				1	12	GND
54	1	JUNCTION BOX	WARNING LIGHT (NOC)	2	10	WS-2,N
				1	12	GND
55	1	JUNCTION BOX	JUNCTION BOX TRAFFIC SIGNAL (NOCB)	2	12	TS-2,N
				2	12	CONTROLS
				1	12	GND
56	1	JUNCTION BOX	JUNCTION BOX (NEAR TRAFFIC SIGNALS)	3	10	TS-2,WS-2,N
				4	12	CONTROLS
				1	12	GND
57	1 1/4	CONTROL CABINET #1	JUNCTION BOX	3	10	TS-2,WS-2,N
				4	12	CONTROLS
				1	12	GND
58	1	MOTION CONTROLLER	JUNCTION BOX (BRAKE CONTROLS)	8	14	CONTROLS
				(2)4	18 SH	CONTROLS
59	3/4	JUNCTION BOX	MACHINE BRAKE SOLENOID	5	14	CONTROLS
				4	18 SH	CONTROLS
60	3/4	JUNCTION BOX	MOTOR BRAKE SOLENOID	3	14	CONTROLS
				4	18 SH	CONTROLS
61	3/4	CONTROL CONSOLE	ELECTRIC HORN	2	12	POWER
				1	12	GND
62	1	NAV. LTS. POWER SUPPLY	SCTC-1	3	10	NAV-1,PE,N
				8	12	CONTROLS
				1	12	GND
63	3/4	JUNCTION BOX	CLEARANCE GUAGE LIGHT	3	10	PE,N
				2	12	CONTROLS
				1	12	GND
63	3/4	JUNCTION BOX	CLEARANCE GUAGE LIGHT	3	10	PE,N
				2	12	CONTROLS
				1	12	GND
64	3/4	JUNCTION BOX	TRAFFIC SIGNAL (NOCB)	2	12	TS-2,N
				2	12	CONTROLS
				1	12	GND
65	3/4	LIGHT SWITCH	CONTROL CABINET #1	2	12	MP-12,SW LEG
				1	12	GND

DRAWING NOTES:

⟨1⟩ QUANTITIES SHOWN ARE MINIMUM. PROVIDE REQUIRED QUANTITIES AND SIZES OF CONDUCTORS BASED ON SUBMITTED CONTROL DIAGRAMS.

⟨2⟩ INTERNAL CONSOLE/CABINET WIRING.

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REVISIONS			REVISIONS		
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Designed by	GMM	5-95
Checked by	RMC	5-95
Approved by	G.M. MOSCINSKI	

DSA GROUP INC.
DSA GROUP, INC.
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

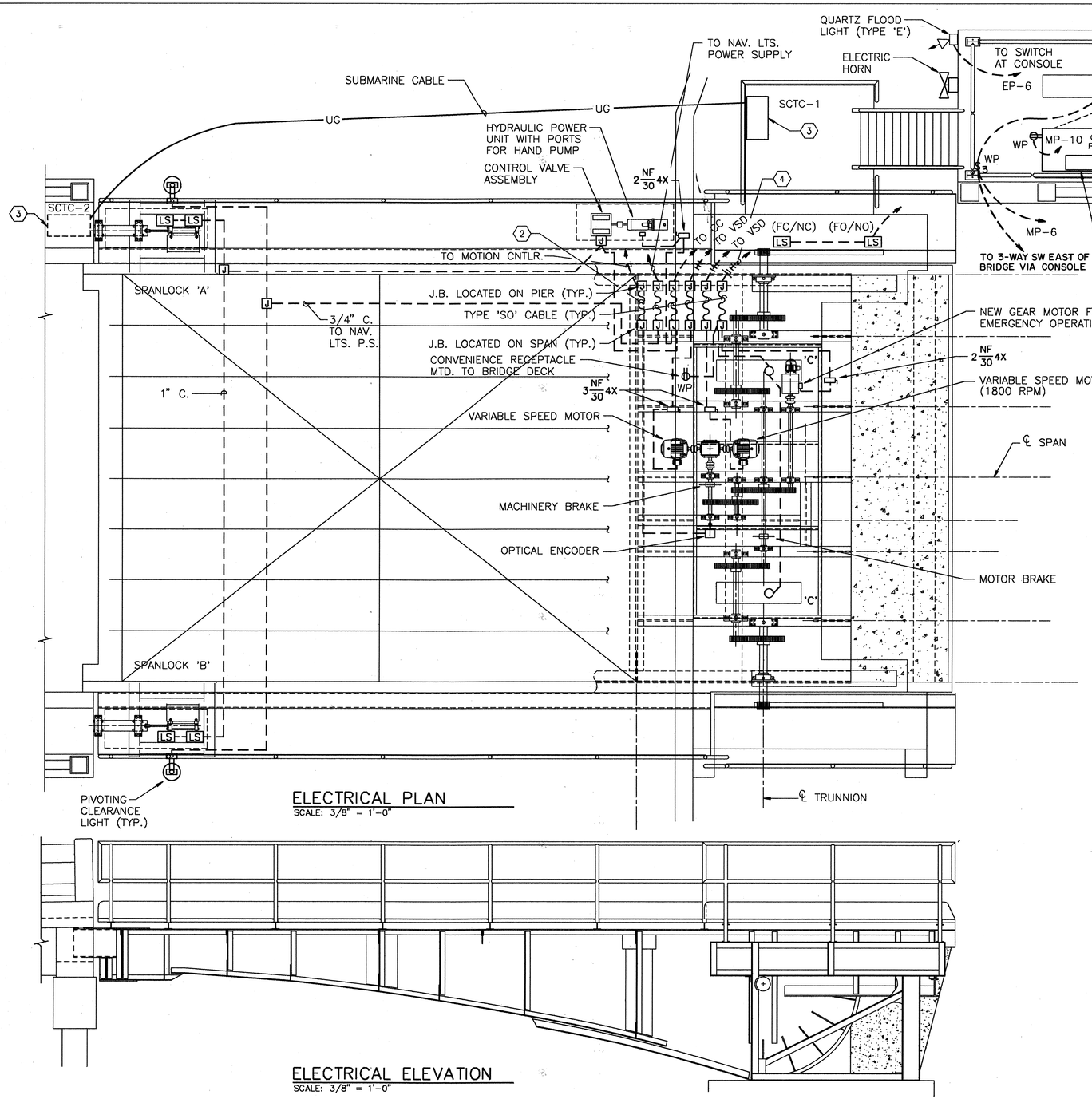
PINELLAS COUNTY FLORIDA

PINELLAS COUNTY DEPARTMENT OF PUBLIC WORKS

SHEET TITLE: CONDUIT AND CABLE SCHEDULE

PROJECT NAME: BECKETT BRIDGE REPAIRS

SHEET E-4



ELECTRICAL PLAN
SCALE: 3/8" = 1'-0"

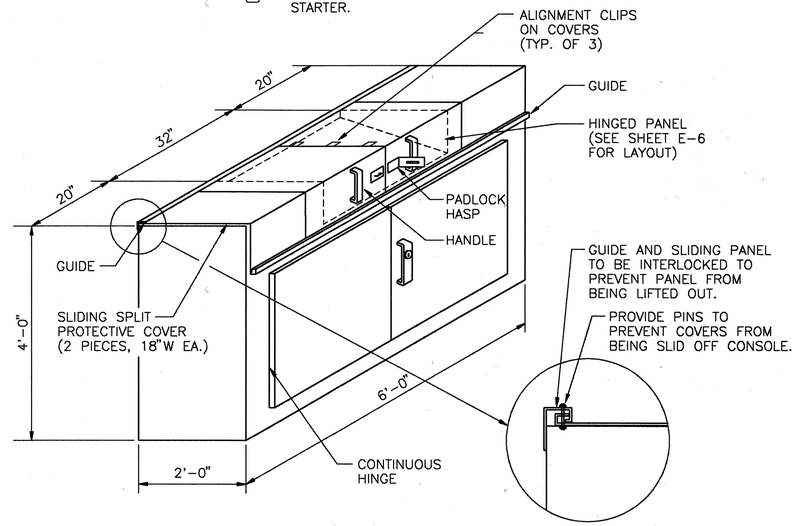
ELECTRICAL ELEVATION
SCALE: 3/8" = 1'-0"

NOTES:

1. LOCATIONS OF DISCONNECTS, CONDUIT, LIGHT FIXTURES AND JUNCTION BOXES ARE DIAGRAMATIC; MOUNT TO SPAN STRUCTURAL STEEL UNDERDECK OR ON PIER AS APPROPRIATE.
2. FLEXIBLE CONNECTIONS AT TRUNNIONS SHALL ALLOW FOR A MIN. 8 FEET OF HORIZONTAL MOVEMENT AS WELL AS 60 DEG. OF ROTATION.

DRAWING NOTES:

1. MOUNT FIXTURES TO (WIDE RIB) GALVANIZED ROOF WITH CORROSION RESISTANT HARDWARE. SEAL ALL PENETRATIONS WITH WEATHER-RESISTANT, UV-STABLE SEALANT.
2. COORDINATE CABLE TYPE WITH ENCODER SUPPLIER.
3. SUBMARINE CABLE TERMINAL CABINET. REFER TO SHEET E-8 FOR CABINET AND CABLE SUPPORT.
4. TO CIRCUIT EP-6 VIA CONTROL CONSOLE AND EP-10 VIA STARTER.



NOTE:
PROTECTIVE COVER DESIGN IS DIAGRAMATIC. CONTRACTOR MAY PROVIDE SUITABLE, COMPARABLE ARRANGEMENT FOR APPROVAL.

CONTROL CONSOLE DETAIL
N.T.S.

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Designed by	GMM	5-95
Checked by	RMC	5-95
Approved by	G.M. MOSCINSKI	

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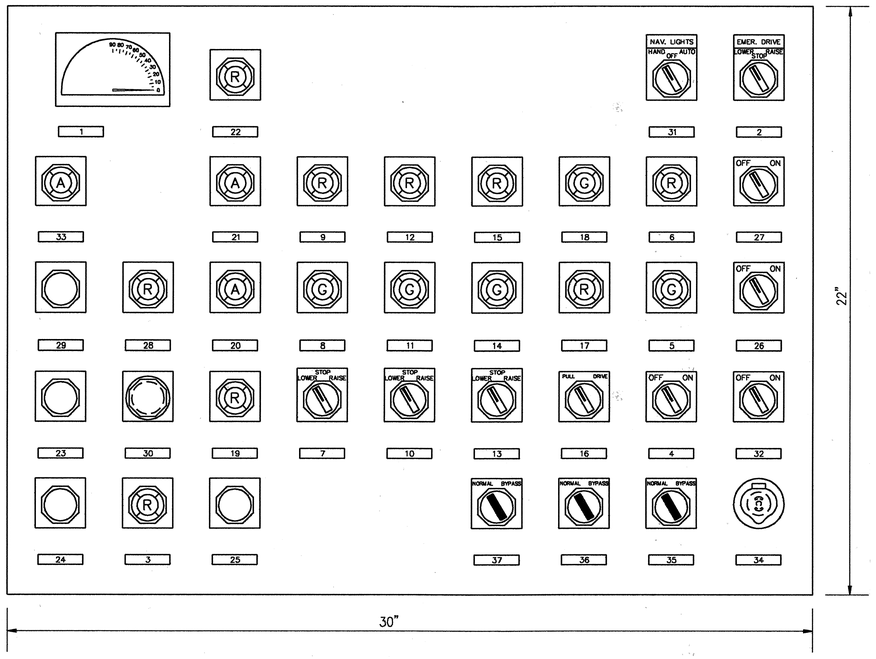
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

PINELLAS COUNTY DEPARTMENT OF PUBLIC WORKS

SHEET TITLE: SPAN ELECTRICAL PLAN

PROJECT NAME: BECKETT BRIDGE REPAIRS

SHEET E-5



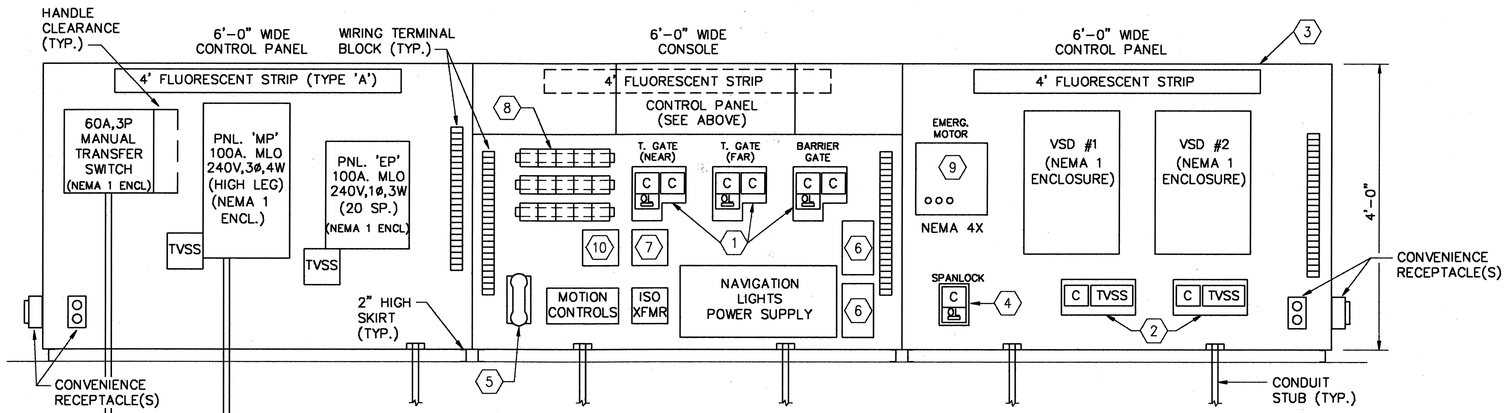
CONTROL PANEL NAMEPLATE

SCALE: 3/8"=1"

DRAWING NOTES:

1. SIZE 1 REVERSING STARTER IN OPEN FRAME, HORIZONTAL MOUNT. SQUARE 'D' #8736 OR APPROVED EQUAL.
2. SIZE 2 CONTACTOR IN OPEN FRAME, HORIZONTAL MOUNT. SQUARE 'D' #8736 OR APPROVED EQUAL, WITH TRANSIENT VOLTAGE SURGE SUPPRESSOR ON LOAD SIDE OF CONTACTOR.
3. STAINLESS STEEL CABINET, WELDED CONSTRUCTION, GASKETED DOUBLE DOORS. CONTINUOUS HINGE PINS AND LOCKING LATCH HANDLES.
4. SIZE Ø FULL VOLTAGE STARTER IN OPEN FRAME, VERTICAL MOUNT. SQUARE 'D' #8536 OR APPROVED EQUAL.
5. PORTABLE TELEPHONE HANDSET, STORAGE CRADLE MOUNTED ON INSIDE OF DOOR. PROVIDE WEATHERPROOF TELEPHONE RECEPTACLE ON CONSOLE (HUBBELL PH6596 OR EQUAL) WITH TELEPHONE CABLE ASSEMBLY (HUBBELL PH6599 OR EQUAL). PROVIDE MATCHING PLUG AND CABLE ON HANDSET.
6. LOW VOLTAGE TVSS DEVICE, 10-PAIR UNIT EQUAL TO APT TE/DA20B-XX. SUITABLE FOR 24V DC SIGNALS.
7. POWER SUPPLY FOR MOTION CONTROLLER.
8. RAIL MOUNTED CONTROL RELAYS.
9. SIZE 1 STARTER FOR EMERGENCY DRIVE MOTOR. RELOCATED FROM SOUTH SIDE OF BRIDGE (SEE SITE PLAN).
10. 24 VOLT, 400W POWER SUPPLY FOR EMERGENCY DRIVE CLUTCH.

CONTROL PANEL NAME PLATE SCHEDULE		
NO.	FIRST LINE	SECOND LINE
1	LEAF POSITION	
2	EMERGENCY DRIVE	MOTOR
3	DRIVE FAILURE	
4	TRAFFIC	SIGNALS
5	TRAFFIC LIGHTS	OFF (GREEN)
6	TRAFFIC LIGHTS	ON (RED)
7	WEST TRAFFIC	GATE CONTROL
8	WEST TRAFFIC	GATE OPEN
9	WEST TRAFFIC	GATE CLOSED
10	EAST TRAFFIC	GATE CONTROL
11	EAST TRAFFIC	GATE OPEN
12	EAST TRAFFIC	GATE CLOSED
13	BARRIER	GATE CONTROL
14	BARRIER	GATE OPEN
15	BARRIER	GATE CLOSED
16	NOSE LOCK	CONTROL
17	NOSE LOCK	LOCK PULLED
18	NOSE LOCK	LOCK DRIVEN
19	BRIDGE SPAN	FULLY CLOSED
20	BRIDGE SPAN	NEARLY CLOSED
21	BRIDGE SPAN	NEARLY OPEN
22	BRIDGE SPAN	FULLY OPEN
23	BRIDGE SPAN	RAISE
24	BRIDGE SPAN	LOWER
25	WARNING HORN	PUSHBUTTON
26	BRIDGE LIGHT	
27	DESK LIGHT	
28	BRAKE FAILURE	
29	NORMAL STOP	(MOTOR BRAKE)
30	EMERGENCY STOP	(MACHINE BRAKE)
31	NAVIGATION LIGHTS	
32	MACHINE AREA	LIGHT
33	LEAF OVERSPEED	
34	TELEPHONE RECEPTACLE	
35	SPAN LOCK	BYPASS
36	SPAN LIMIT	SWITCH BYPASS
37	GATE LIMIT	SWITCH BYPASS



CONTROL CONSOLE/PANEL ELEVATION

SCALE: 1"=1'-0"

NOTE:

1. ALL SWITCHES AND PILOT LIGHTS SHALL BE OIL TIGHT, CORROSION-RESISTANT.
2. PROVIDE SWITCH INSIDE EACH CABINET AND CONTROL CONSOLE FOR THE FLUORESCENT LIGHT.

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REVISIONS			REVISIONS		
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	Names	Dates
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Designed by	GMM	5-95
Checked by	RMC	5-95
Approved by	G.M. MOSCINSKI	

DSA GROUP INC.
DSA GROUP, INC.
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

PINELLAS COUNTY DEPARTMENT OF PUBLIC WORKS

SHEET TITLE: CONTROL PANEL DETAILS & NOTES

PROJECT NAME: BECKETT BRIDGE REPAIRS

SHEET E-6

SUMMARY OF QUANTITIES

ITEM	UNIT	QUANTITY
ELECTRICAL SYSTEM	L.S.	1
TYPE 'A' LIGHT FIXTURE	EA.	3
TYPE 'B' LIGHT FIXTURE	EA.	2
TYPE 'C' LIGHT FIXTURE	EA.	1
TYPE 'D' LIGHT FIXTURE	EA.	1
TOGGLE LIGHT SWITCH	EA.	1
GENERATOR RECEPTACLE, WP	EA.	1
METER SOCKET	EA.	1
DISCONNECT SWITCHES		
3P-100-100-4X	EA.	1
2P-NF-30-4X	EA.	3
3P-NF-30-4X	EA.	2
STARTER SIZE 0	EA.	1
STARTER SIZE 1	EA.	4
CONTACTOR SIZE 2	EA.	2
PULLBOX (12" SQ.)	EA.	8
LIGHTNING ARRESTOR (TVSS)	EA.	5
PANEL 'MP' (240/120V, 3Ø)	EA.	1
PANEL 'EP' (240/120V, 1Ø)	EA.	1
JUNCTION BOX (4" SQ.)	EA.	46
W.P. ELECTRIC HORN 95dB @ 10'	EA.	1
DEMOLITION	L.S.	1
CONTROL CABINET	EA.	2
CONTROL CONSOLE	EA.	1
LIMIT SWITCH	EA.	4
GROUNDING ELECTRODE (COPPERWELD)	L.F.	30
GROUNDING ELECTRODE (STAINLESS STEEL)	L.F.	20
(CONDUCTOR) #14 CU THHN/MTW	L.S.	1
(CONDUCTOR) #12 CU THWN	L.S.	1
(CONDUCTOR) #10 CU THWN	L.S.	1
(CONDUCTOR) #6 CU THWN	L.S.	1
(CONDUCTOR) #4/0 (BARE)	L.S.	1
(CONDUIT) 1" PVC SCH. 80	L.S.	1
(CONDUIT) 3/4" FIBERGLASS REINFORCED EPOXY	L.S.	1
(CONDUIT) 1" FIBERGLASS REINFORCED EPOXY	L.S.	1
(CONDUIT) 1 1/2" FIBERGLASS REINF. EPOXY	L.S.	1
(CONDUIT) 2" FIBERGLASS REINFORCED EPOXY	L.S.	1
(CONDUIT) 1" RIGID GALVANIZED STEEL	L.S.	1
SUBMARINE CABLE	L.F.	90

SCHEDULE - PANEL 'MP'

LOAD SERVED DESCRIPTION	CND. SIZE	WIRE SIZE	CT BKR AMPS	CT BKR P	CT #	AØ KVA	BØ KVA	CØ KVA	CT #	CT BKR P	CT BKR AMPS	WIRE SIZE	CND. SIZE	LOAD SERVED DESCRIPTION
MAIN DRIVE #1		#10	50	3	1	3.00								
		#10			3	6.2	3.00		2	2	60	#6		PANEL 'EP'
		#10			5		5.5	3.00	4			#6		(MAIN XFER. SW.)
MAIN DRIVE #2		#10	50	3	7	3.00		0.5	6	1	20	#12		LIGHTING
		#10			9	0.5	3.00		8	1	20			SPARE
		#10			11		1.0	3.00	10	1	20	#12		CONV. RECEPTACLES
SPARE			20	1	13	0.5		0.5	12	1	20	#10		AREA LIGHT
SPARE			20	1	15	-	0.5		14	3	30	#10		TVSS
SPARE			20	1	17		-	0.5	16					
SPARE			20	1	19	0.5		-	18					
SPACE					21	0.5	-		20	1	20			SPARE
SPACE					23		0.5	-	22	1	20			SPARE
SPACE					25	-		-	24					SPACE
SPACE					27	-	-		26					SPACE
SPACE					29		-	-	28					SPACE
								-	30					SPACE

PANEL TYPE: 3Ø 4 WIRE 120/240 VOLTS — 14.2 13.5 7.5 — DEMAND FACTOR: NONE
MANUFACTURER: SQUARE 'D' — 35.2/.42 = 84A/Ø — TOTAL DEMAND AMPS:
CATALOG NO.: QO LOAD CENTER — TOTAL CONNECTED AMPS — TOTAL DEMAND KVA:
MAIN: LOCATION: TOP LUGS: 100 AMP
ENCLOSURE: NEMA 1 MOUNTING: SURFACE
PANEL SHORT CIRCUIT INTERRUPTING CAPACITY: 10,000 AMPS SYMMETRICAL (MINIMUM)
MODIFICATIONS:

REFER TO RISER DIAGRAM (SHEET E-3) AND CONDUIT SCHEDULE (SHEET E-4) FOR ADDITIONAL CONDUIT AND CABLE INFO.

SCHEDULE - PANEL 'EP'

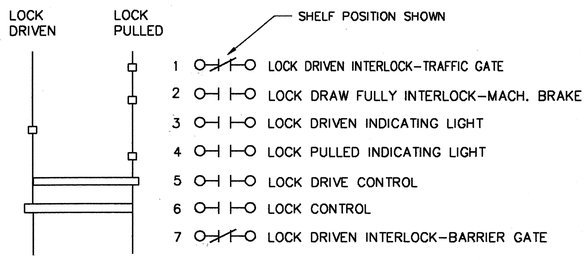
LOAD SERVED DESCRIPTION	CND. SIZE	WIRE SIZE	CT BKR AMPS	CT BKR P	CT #	AØ	BØ	CT #	CT BKR P	CT BKR AMPS	WIRE SIZE	CND. SIZE	LOAD SERVED DESCRIPTION
TRAFFIC GATE (NEAR)		#10	20	2	1	.75							
		#10			3	.75	.75	2	2	20	#10		SPANLOCK HYD. POWER UNIT
TRAFFIC GATE (FAR)		#10	20	2	5	.75	.75	4			#10		
		#10			7	.75	1.0	6	1	20	#12		CONV. RECEPT. & LIGHTING
BARRIER GATE		#10	20	2	9	0.5	0.5	8	1	20			SPARE
		#10			11	0.5	0.5	10	2	20	#10		EMERGENCY DRIVE MOTOR
NAV. LIGHTS P.S.		#12	20	1	13	1.0	0.5	12			#10		
TRAFFIC/WARNING SIGNALS		#10	20	1	15	.7	0.5	14	1	20	#12		ISOLATION XFMR.
SPARE			20	1	17	0.5	0.5	16	2	30	#10		TVSS
SPACE					19	-	0.5	18					
							-	20					

PANEL TYPE: 1Ø 3 WIRE 120/240 VOLTS — 6.2 5.5 — DEMAND FACTOR:
MANUFACTURER: SQUARE 'D' — 11.7/.24 = 49A/Ø — TOTAL DEMAND AMPS:
CATALOG NO.: QO LOAD CENTER — TOTAL CONNECTED AMPS — TOTAL DEMAND KVA:
MAIN: MLO LOCATION: - LUGS: 100 AMP
ENCLOSURE: NEMA 1 MOUNTING: SURFACE
PANEL SHORT CIRCUIT INTERRUPTING CAPACITY: 10,000 AMPS SYMMETRICAL (MINIMUM)
MODIFICATIONS:

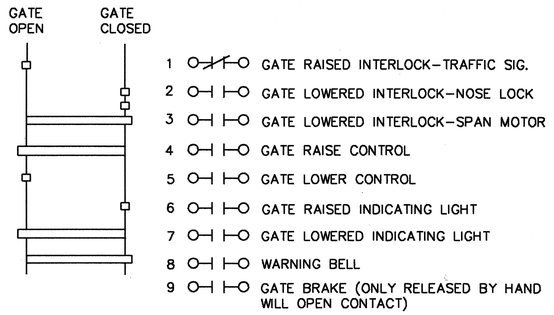
FIXTURE SCHEDULE

MARK	MANUFACTURER	CATALOG NO.	VOLTAGE	LAMPS PER FIXTURE NO.	WATTS	TYPE	COLOR	MOUNTING REMARKS
A	COLUMBIA	K148-120-PAF	120	1	40	F40T12/RS	W.W.	SURFACE
B	COLUMBIA	LUN-240-WL-120-SSLTP	120	2	40	F40T12/RS	W.W.	SURFACE, WP
C	PARAMOUNT	71438-MD-120	120	2	40	F40T12/RS	W.W.	SURFACE, WP *
D	G.E.	M400A2 'POWRDOOR', MEDIUM SEMI-CUTOFF TYPE II DISTRIB.	120	1	400	LU400		25' TAPERED ALUM. POLE W/6' ARM
E	G.E.	QHF-300	120	1	300	Q300T3		SURFACE, CAST BOX

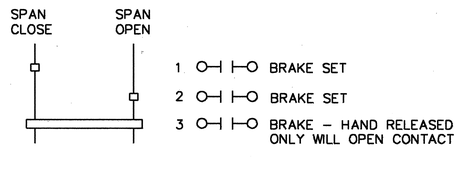
* BRASS LAMP SOCKETS AND VIBRATION RESISTANT LAMP SUPPORTS.



NOSE LOCK LIMIT SWITCH DEVELOPMENT



TRAFFIC GATE LIMIT SWITCH DEVELOPMENT



SERVICE BRAKE LIMIT SWITCH DEVELOPMENT

NOTE:
QUANTITIES ARE APPROXIMATE. CONTRACTOR SHALL PROVIDE TOTAL QUANTITIES NEEDED TO COMPLETE PROJECT.

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REVISIONS Date	By	Description	REVISIONS Date	By	Description

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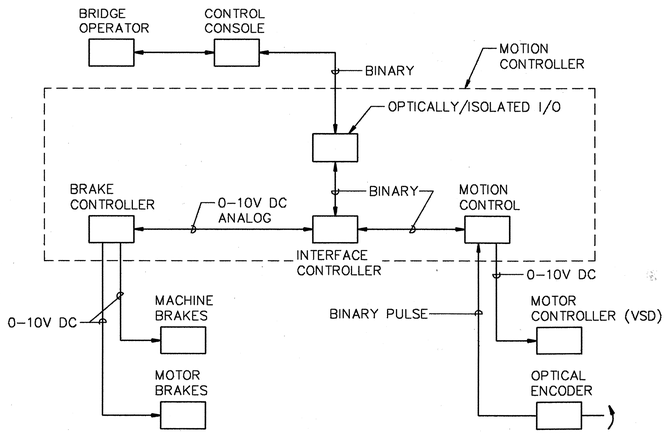
Checked by	RMC	5-95
Approved by	G.M. MOSCINSKI	

DSA GROUP INC.
DSA GROUP, INC.
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

PINELLAS COUNTY FLORIDA
PINELLAS COUNTY DEPARTMENT OF PUBLIC WORKS

SHEET TITLE: SCHEDULES
PROJECT NAME: BECKETT BRIDGE REPAIRS
SHEET: E-7



ADAPTIVE MOTION CONTROL WITH ENCODER FEEDBACK
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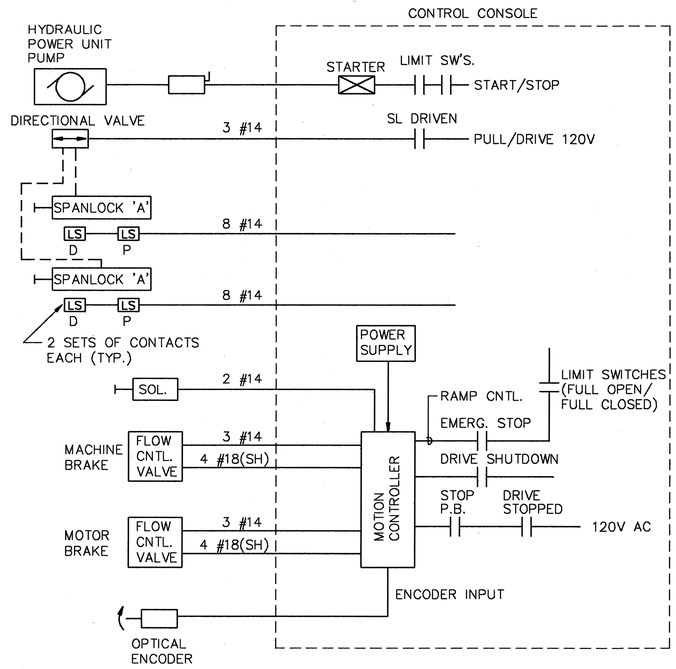

SPANLOCK/BRAKE HYDRAULIC POWER UNIT
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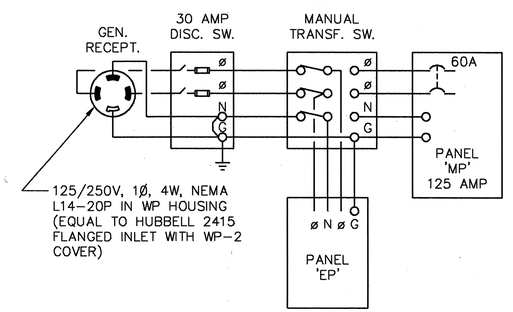

EMERGENCY POWER SUPPLY WIRING
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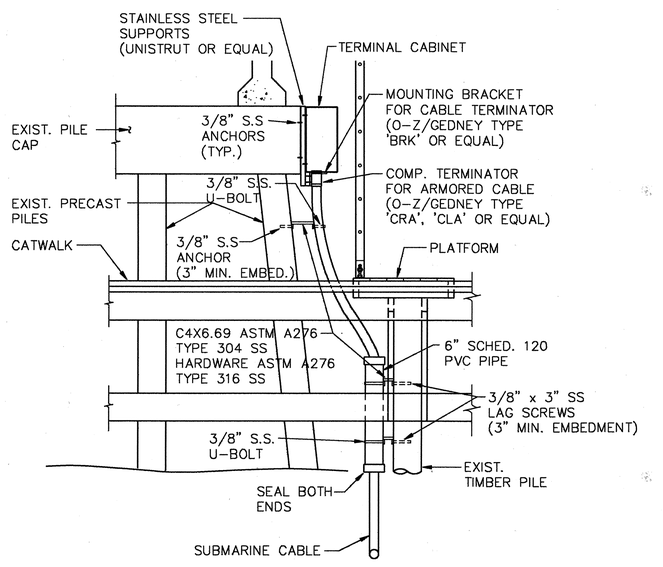
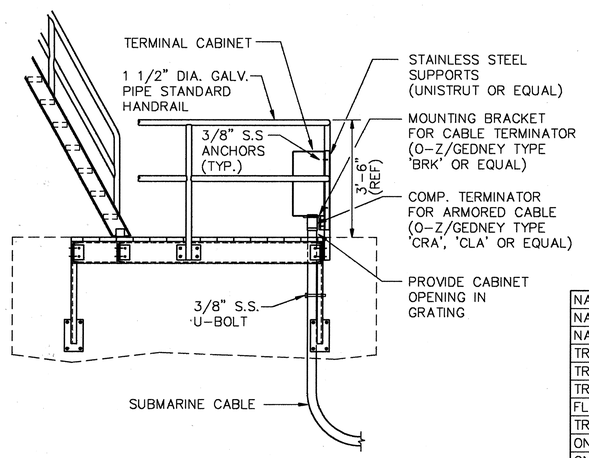
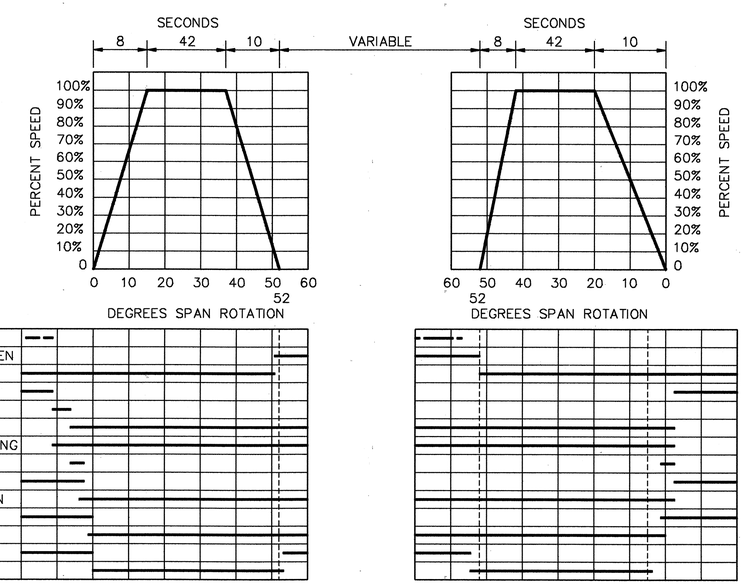


SCTC MOUNTING DETAIL
TYPICAL SUBMARINE CABLE SUPPORT





SEQUENCE TIME DIAGRAM
NOT TO SCALE

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REVISIONS			REVISIONS		
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	Names	Dates
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Checked by	RMC	5-95
Approved by	G.M. MOSCINSKI	

DSA GROUP INC.

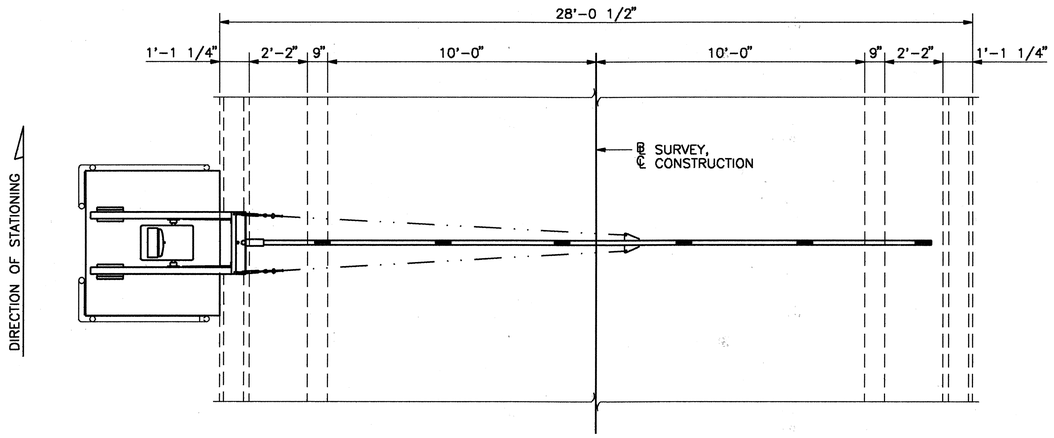
DSA GROUP, INC.
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

PINELLAS COUNTY DEPARTMENT OF PUBLIC WORKS

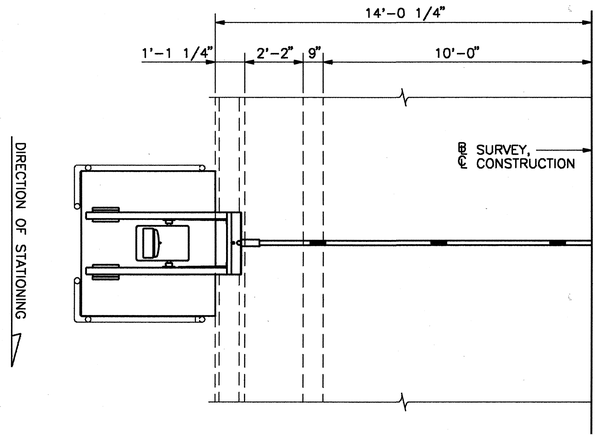
SHEET TITLE: ELECTRICAL DETAILS

PROJECT NAME: BECKETT BRIDGE REPAIRS

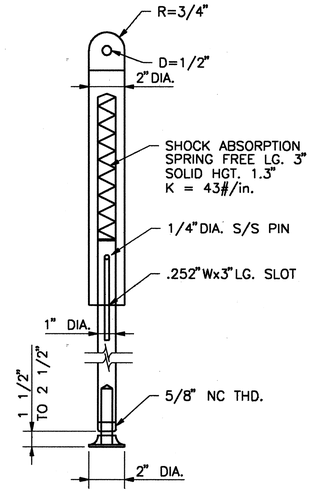
SHEET E-8



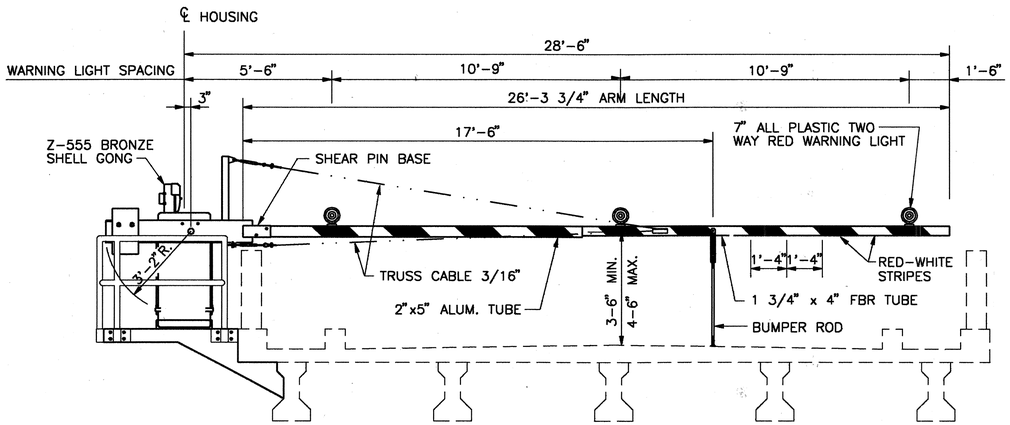
PLAN



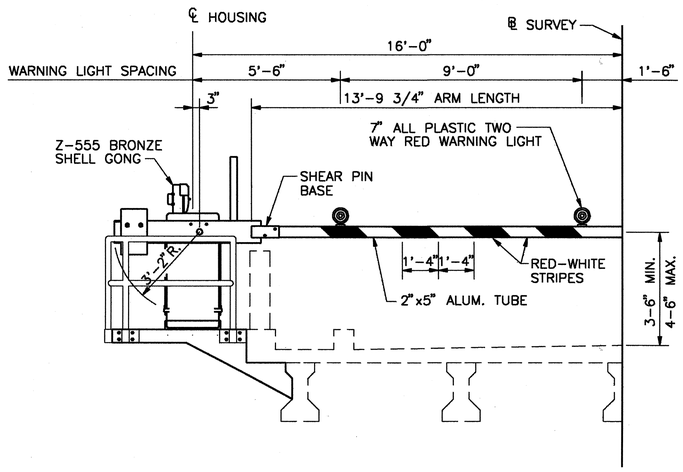
PLAN



BUMPER ROD DETAIL
N.T.S.



ELEVATION



ELEVATION

NOTES:
1. GATE ARM, STANDARD ALUMINUM POLE, ALLOY 6063-T6 WITH CAST 6061-T6 BASE, ARM, ARM BRACKETS AND ALL ALUMINUM PARTS SHALL BE CLEANED AND PRIMED ONE COAT ON ZINC CHROMATE PRIMER. FINAL FINISH SHALL BE BY GENERAL CONTRACTOR AFTER ERECTION, TEST AND FINAL INSPECTION.
2. GATE ARM CONNECTIONS AT SIDEWALK SHALL BE STRUCTURAL STEEL ASTM A588, HOT DIPPED GALVANIZED, FASTENERS SHALL BE ASTM A325 UNLESS OTHERWISE NOTED.
3. STAINLESS STEEL FASTENERS SHALL BE ASTM A240, TYPE 316 AND ASTM A320 GRADE B8, STRAIN HARDENED.
4. TURN BUCKLES AND WIRE ROPE HARDWARE SHALL BE STEEL HOT DIP GALVANIZED.
5. GUY CABLE SHALL BE PREFORMED 7x19 STAINLESS STEEL 18-8, .312 DIA. MINIMUM BREAKING STRENGTH 9,000 LBS. FITTINGS SHALL BE STAINLESS STEEL.
6. ENERGY ABSORPTION CABLES SHALL BE 3/8" DIA. 7x19 ANNEALED AUSTENITIC STAINLESS STEEL WIRE ROPE WITH STAINLESS STEEL MALE THREADED ROD ENDS.
7. GATE HOUSING, SIDE ARM TUBES, CABLE ANCHORAGE AND ALL EXPOSED STEEL PARTS EXCEPT FASTNERS SHALL BE HOT DIPPED GALVANIZED. STEEL FASTENERS SHALL BE CAD PLATED
8. JACK BOLTS SHALL BE HI-TEN STEEL UNF .750-16 THD. WITH CASE HARDENED TIP, CAD PLATED.
9. ARM REST BUMPER SHALL BE ALUMINUM, 6061-T6 WITH STAINLESS STEEL PIVOT PIN.
10. WIRING BETWEEN THE GATE ARM AND HOUSING SHALL BE WATERTIGHT, FLEXIBLE AND BE ENCLOSED WITH INTERLOCKED ARMOR OF GALVANIZED STEEL. ALL WIRING ON THE GATE ARM SHALL BE IN RIGID METAL CONDUIT.
11. GONG SHALL BE 12" BRONZE SHELL.
12. CONTRACTOR SHALL PROVIDE THE FOLLOWING SPARE PARTS: 1 COMPLETE GATE ARM INCLUDING LIGHTS, TRUSS AND BUMPER ROD.

NOTE:
1. FOR PEDESTAL DETAILS, SEE DWG. NO. S-9

R:\94088\CADD\DLEC
C:\WORK\JBBES 05/22/95 08:14:18 ALC PRODUCED BY DSA CADD SYSTEM

REVISIONS			REVISIONS		
Date	By	Description	Date	By	Description

SEAL:

	Names	Dates
Drawn by	KTL	5-95
Checked by	TJF	5-95
Designed by	TJF	5-95
Checked by	GMM	5-95
Approved by	T.J. FARRELL	

DSA GROUP INC.

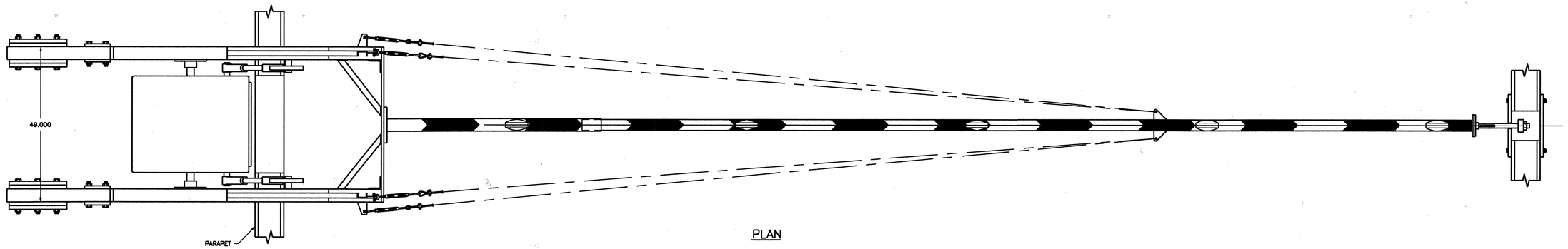
DSA GROUP, INC.
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

PINELLAS COUNTY DEPARTMENT OF PUBLIC WORKS

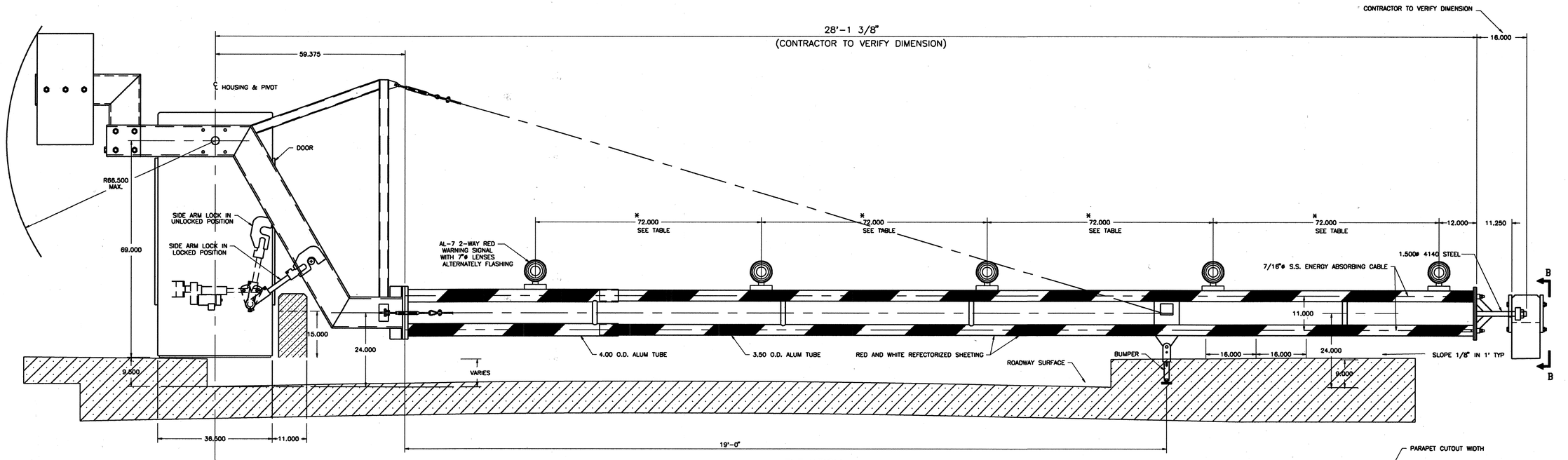
SHEET TITLE: TRAFFIC GATE DETAILS

PROJECT NAME: BECKETT BRIDGE REPAIRS

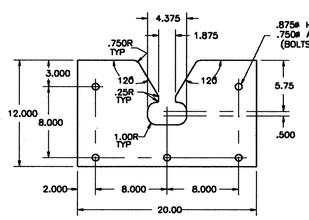
SHEET E-9



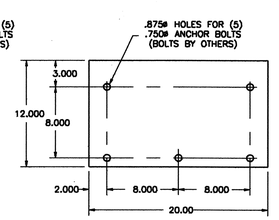
PLAN



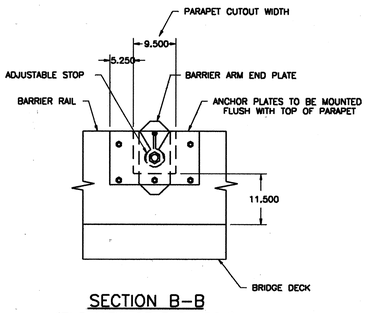
ELEVATION



END LOCK ANCHOR PLATE
1.000 THICK PLATE



END LOCK BACKUP PLATE
1.000 THICK PLATE



SECTION B-B
(END VIEW OF END LOCK)

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REVISIONS			REVISIONS		
Date	By	Description	Date	By	Description

SEAL:

	Names	Dates
Drawn by	KTL	1-95
Checked by	TJF	1-95
Designed by	TJF	5-95
Checked by	GMM	5-95
Approved by	Timothy J. Farrell / Gene M. Thomas	

DSA GROUP INC.

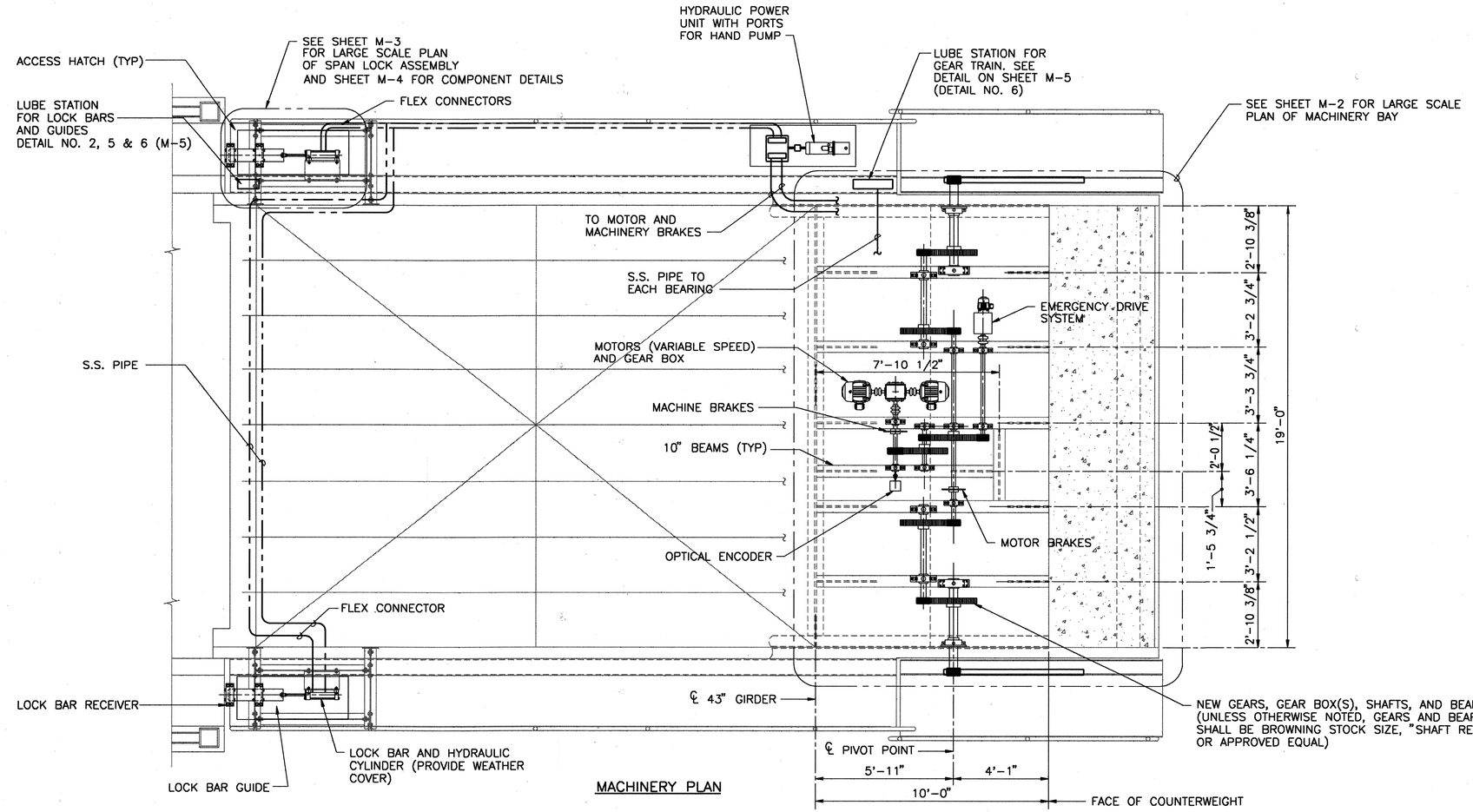
DSA GROUP, INC.
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

PINELLAS COUNTY
DEPARTMENT OF
PUBLIC WORKS

SHEET TITLE:
BARRIER GATE DETAILS

PROJECT NAME:
BECKETT BRIDGE REPAIRS

SHEET
E-10



NOTES:

1. MOTORS TO BE TEFC CHEMICAL SERVICE (CORROSION RESISTANT). POWER UNIT AND CYLINDERS TO BE EPOXY COATED. SEE DRAWING M-9 FOR DEMOLITION WORK.
2. PROVIDE 1/8" THICK ALUM. WEATHER COVER (HINGED) FOR ALL BRAKE ROTORS.

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C:\WORK\BMECH1 08/19/95 09:26:19 AEV PRODUCED BY DSA CADD SYSTEM

REVISIONS			REVISIONS		
Date	By	Description	Date	By	Description

SEAL:

	Names	Dates
Drawn by	CLM	5-95
Checked by	LET	5-95
Designed by	LET	5-95
Checked by	RMC	5-95
Approved by	R.M. COURET	

R.M. Couret

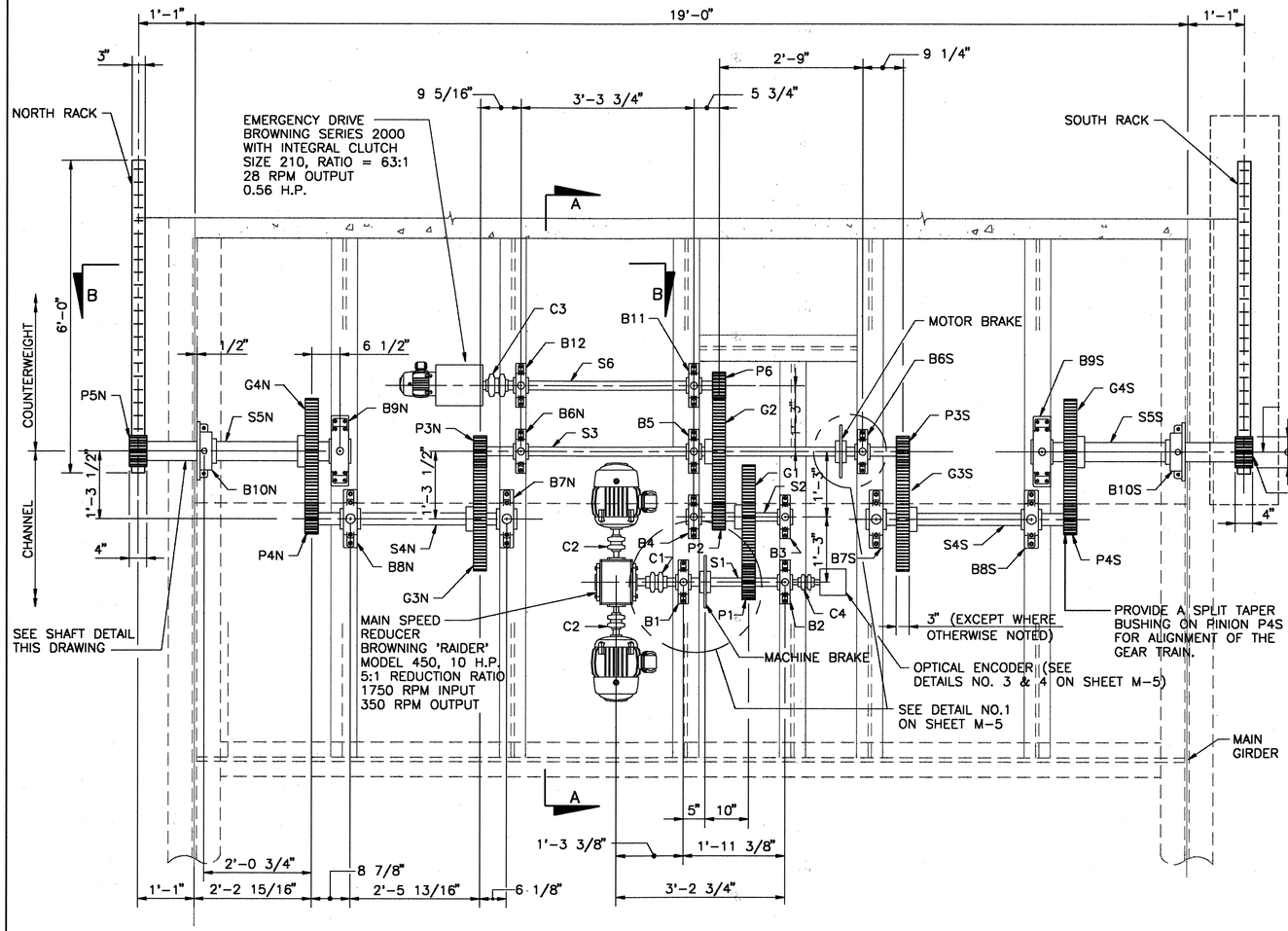
DSA GROUP INC.
DSA GROUP, INC.
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

PINELLAS COUNTY DEPARTMENT OF PUBLIC WORKS

SHEET TITLE: MACHINERY PLAN

PROJECT NAME: BECKETT BRIDGE REPAIRS

SHEET M-1



PLAN OF MACHINERY BAY

NOTES:
1. DIMENSIONS SHOWN ARE FOR GENERAL REFERENCE ONLY. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. SEE SHEET M-6 FOR SECTIONS A-A AND B-B.

TABLE OF GEARS

ID NUMBER	QUANTITY	NUMBER OF TEETH	DP	WIDTH	TORQUE (# INCH)	RPM (OLD)	RPM (NEW)	BORE	PART NUMBER	KEY SEAT
P1	1	18	3	3"	228	417	350	1.875"	NSS318	1/2" x 1/4"
G1	1	72	3	3"	NA	143.7	87.5	1.875"	NCS372	1/2" x 1/4"
P2	1	18	3	3"	455	143.7	87.5	1.875"	NSS318A	1/2" x 1/4"
G2	1	72	3	3"	NA	26.0	21.9	2.0"	NCS372	1/2" x 1/4"
P3 N&S	2	21	3	3"	1,822	26.0	21.9	2.0"	NSS321A	1/2" x 1/4"
G3 N&S	2	72	3	3"	NA	7.69	6.4	2.75"	NSC372	5/8" x 5/16"
P4 N&S	2	24	3	3"	6,250	7.69	6.4	2.75"	NSS324A	5/8" x 5/16"
G4 N&S	2	72	3	3"	NA	2.27	2.13	3.25"	NSC372	1" x 1/2"
P5 N&S *	2	14	2	4"	18,750	2.27	2.13	3.1875"	NA	1" x 1/2"
P6	1	16	3	3"	1,305	N/A	28	2.0"	NSS316A	1/2" x 1/4"
RACK N&S *	2	N/A	2	3"	18,750	NA	NA	NA	NA	NA

NOTE:
1. ALL NEW AND EXISTING GEARS ARE 14.5° PA. EXCEPT P5 N&S AND RACK N&S WHICH ARE 20° PA.
2. ALL GEAR PART NUMBERS ARE BROWNING.
3. * = SHOP MACHINED

TABLE OF BEARINGS

ID NUMBER	QUANTITY	RPM	BORE(D)	PART NUMBER
B1	1	350	1.875"	PB970, TYPE SR
B2	1	350	1.875"	PB970, TYPE SR
B3	1	87.5	1.875"	PB970, TYPE SR
B4	1	87.5	1.875"	PB970, TYPE SR
B5	1	21.9	1.875"	PB970, TYPE SR
B6 N&S	2	21.9	2"	PB970, TYPE SR
B7 N&S	2	6.4	2.75"	PB970, TYPE SR
B8 N&S	2	6.4	2.75"	PB970, TYPE SR
B9 N&S	2	2.13	3.1875"	PB970, TYPE SR
B10 N&S	2	2.13	3.1875"	SFC1000NE x 3 3/16"
B11	1	28	2"	PB970, TYPE SR
B12	1	28	2"	PB970, TYPE SR

NOTE:
1. RC 6 FIT ($D^{+d}_{-\phi}$)

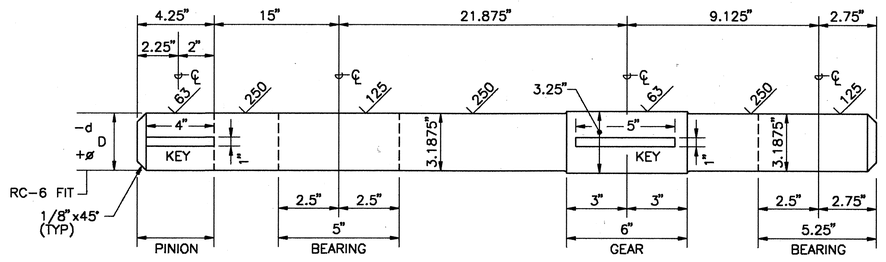
TABLE OF COUPLINGS

ID NUMBER	QUANTITY	KEY	TORQUE RATING (# INCH)	RPM	BORE	PART NO.
C1	1	REFER TO REDUCER	5,500	350	1.625"	1060T
C2	2	REFER TO REDUCER	3,500	1750	1.375"	1050T
C3	1	REFER TO GEAR MOTOR	1,200	28	1.5"	1030T
C4	1	NONE	–	–	.375"	CS-08*

* INDICATES BROWNING MANUFACTURER. ALL OTHER COUPLINGS ARE FALK.

TABLE OF SHAFTS

ID NUMBER	QUANTITY	LENGTH	DIA.(D)	KEY SEAT 1	KEY SEAT 2	KEY SEAT 3	NOTES
S1	1	32"	1.875"	1/2"x1/4"x3 1/2"	1/2"x1/4"x4"	1/2"x1/4"x2 1/2"	
S2	1	26"	1.875"	1/2"x1/4"x3 1/2"			
S3	1	103.5"	2"	1/2"x1/4"x3 1/2"	1/2"x1/4"x3 1/2"	1/2"x1/4"x3 1/2"	
S4 N&S	2	53"	2.75"	5/8"x5/16"x5 1/2"			
S5 N&S	2	53"	3.25"	1"x1/2"x5"	1"x1/2"x4"		
S6	1	53"	2"	1/2"x1/4"x3 1/2"	1/2"x1/4"x2"		



SHAFT DETAIL FOR S5 N & S
OTHER SHAFTS SIMILAR

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REVISIONS			REVISIONS		
Date	By	Description	Date	By	Description

SEAL:

	Names	Dates
Drawn by	CLM	5-95
Checked by	LET	5-95
Designed by	LET	5-95
Checked by	RMC	5-95
Approved by	R.M. COURET	

DSA GROUP INC.

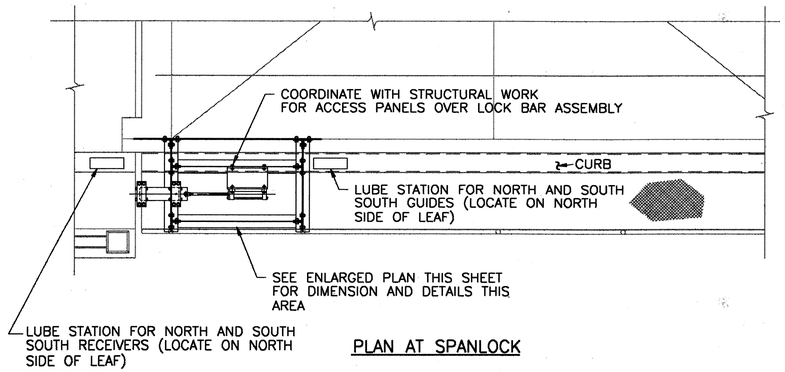
DSA GROUP, INC.
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

PINELLAS COUNTY
DEPARTMENT OF
PUBLIC WORKS

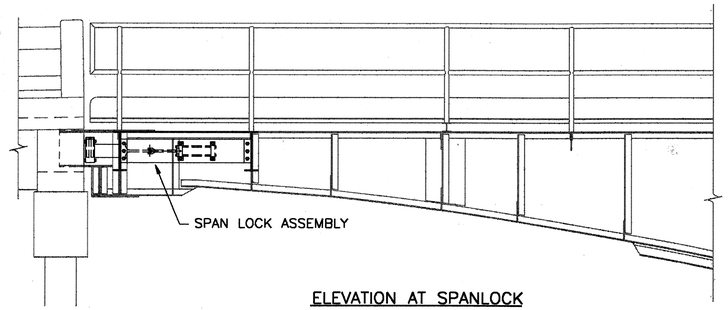
SHEET TITLE: MACHINERY PLAN AND SCHEDULES

PROJECT NAME: BECKETT BRIDGE REPAIRS

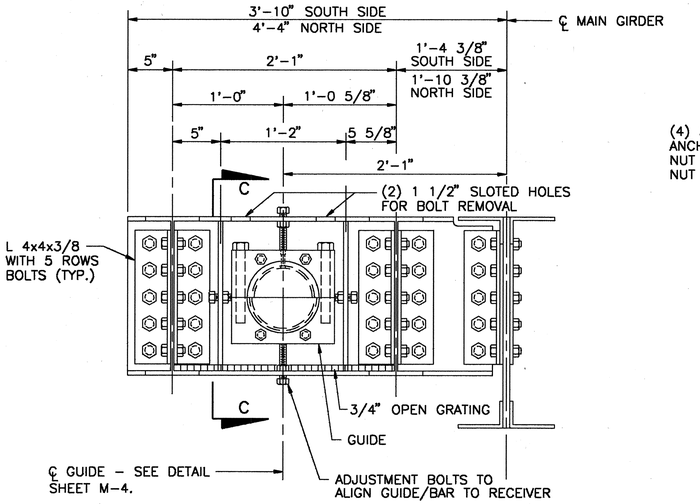
SHEET M-2



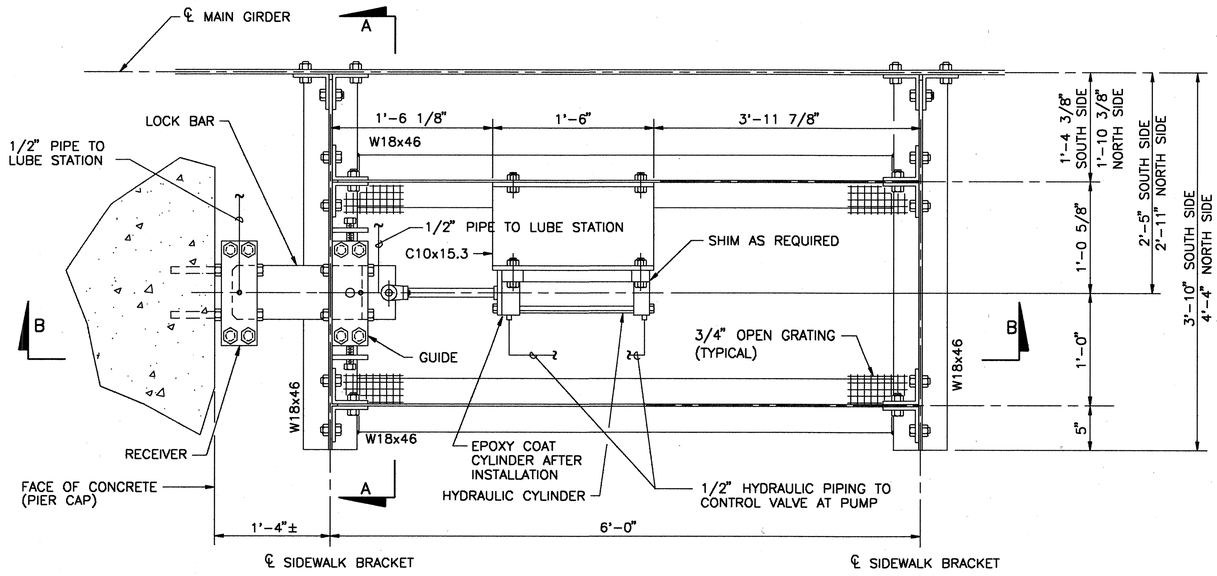
PLAN AT SPANLOCK



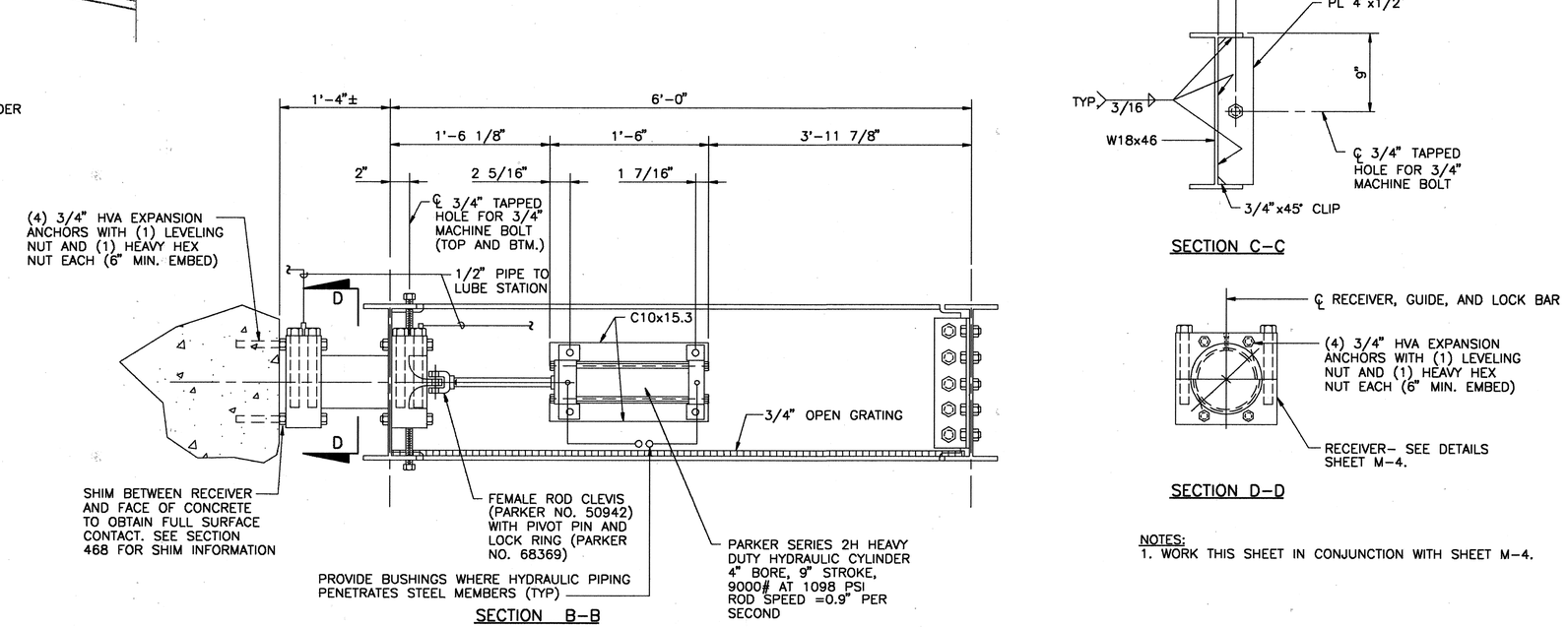
ELEVATION AT SPANLOCK
(NORTH SIDE SIMILAR)



SECTION A–A



ENLARGED PLAN



SECTION B–B

SECTION C–C

SECTION D–D

NOTES:
1. WORK THIS SHEET IN CONJUNCTION WITH SHEET M-4.

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REVISIONS			REVISIONS		
Date	By	Description	Date	By	Description

SEAL:

	Names	Dates
Drawn by	CLM	5-95
Checked by	LET	5-95
Designed by	LET	5-95
Checked by	RMC	5-95
Approved by	R.M. COURET	

DSA GROUP INC.
DSA GROUP, INC.
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

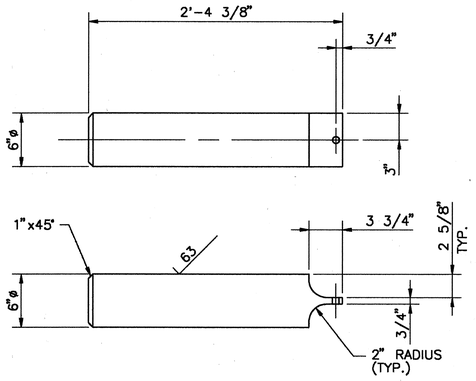
PINELLAS COUNTY FLORIDA BOARD OF COUNTY COMMISSIONERS

PINELLAS COUNTY
DEPARTMENT OF
PUBLIC WORKS

SHEET TITLE:
SPAN LOCK DETAILS

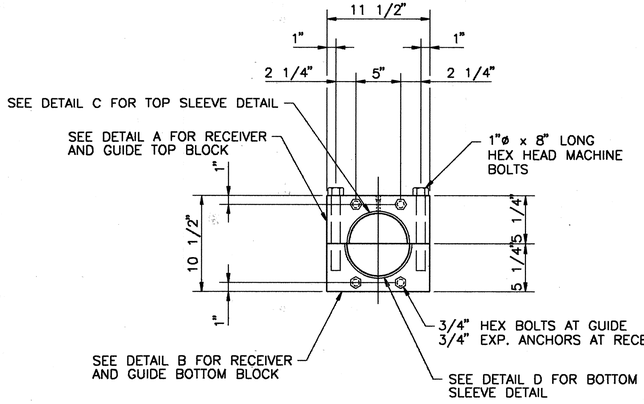
PROJECT NAME:
BECKETT BRIDGE REPAIRS

SHEET
M-3

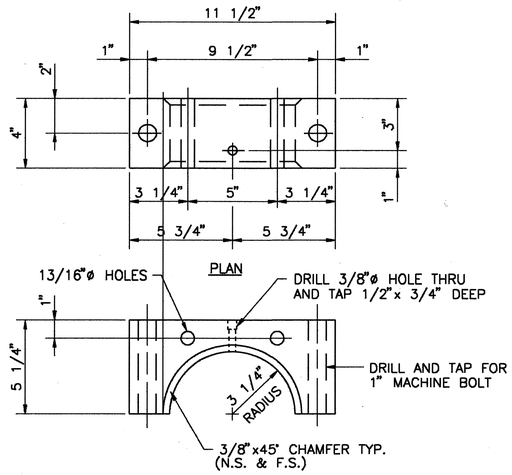


LOCK BAR DETAILS

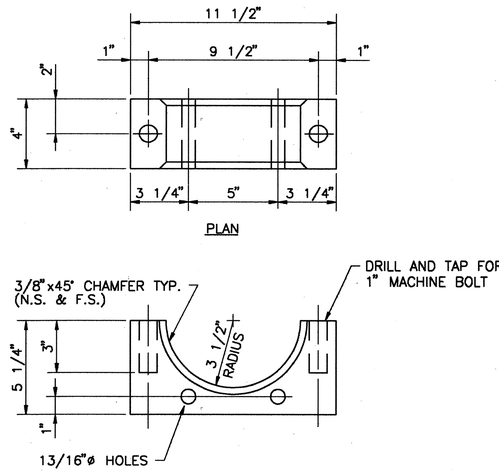
MATERIAL OF CONSTRUCTION TO BE SAE51440 S/S.



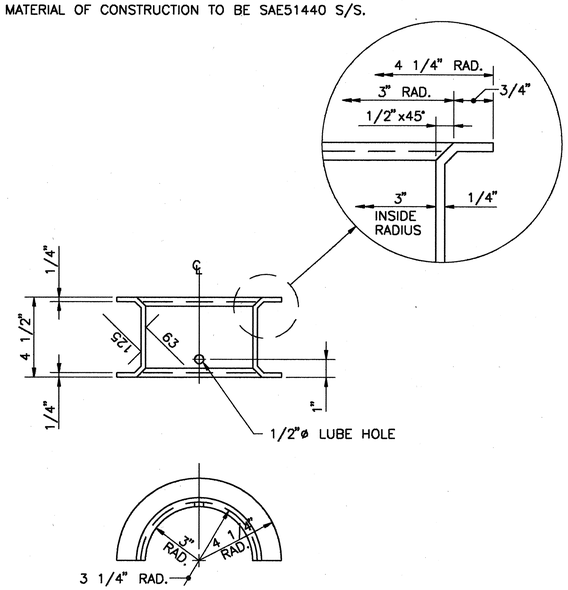
RECEIVER AND GUIDE BLOCK DETAIL



DETAIL A – RECEIVER AND GUIDE TOP

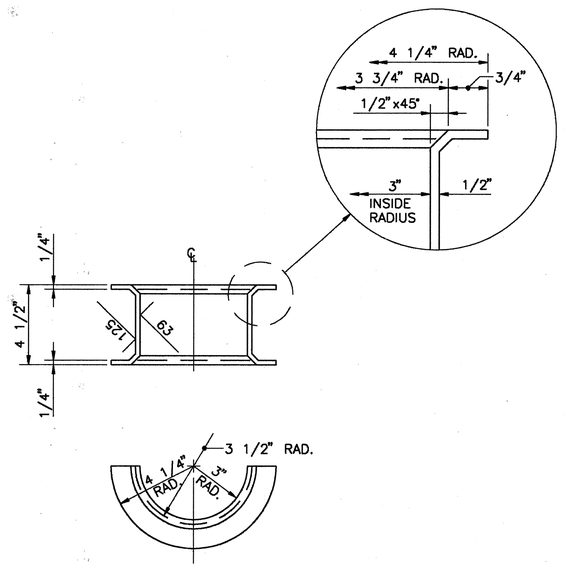


DETAIL B – RECEIVER AND GUIDE BOTTOM



DETAIL C – RECEIVER AND GUIDE SLEEVE TOP

MATERIAL OF CONSTRUCTION TO BE SAE30905 STEEL. MACHINE TO ACCOMODATE RC6 FIT, INSIDE AND OUTSIDE SURFACES.



DETAIL D – RECEIVER AND GUIDE SLEEVE BOTTOM

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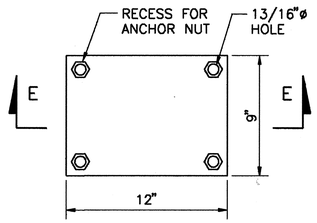
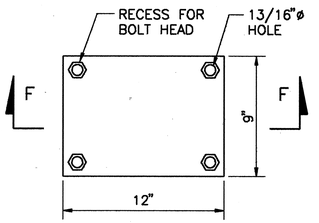
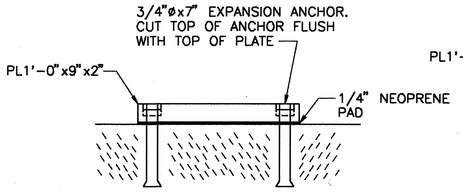
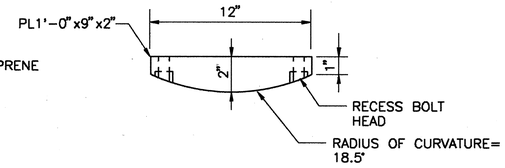






SECTION E–E

STRIKE PLATE – TWO REQ'D.



SECTION F–F

LIVE LOAD SHOE – TWO REQ'D.

NOTE:
1. ALL MATERIAL TO BE ASTM A36 U.O.N.
2. ALL BOLTS TO BE A325 U.O.N.
3. PROVIDE RC–6 FIT FOR LOCK BAR, WEAR INSERTS, RECEIVER AND GUIDE.
4. PROVIDE ONE SPARE SET OF TOP AND BOTTOM WEAR INSERTS FOR EACH GUIDE AND RECEIVER. PREPARE FOR STORAGE, TAG WITH BRIDGE NAME, NUMBER AND LOCATION. TURN OVER TO COUNTY AT END OF PROJECT.

R:\94085\CADD\MECH
C:\WORK\BSMECH14 08/16/95 14:58:01 KTL PRODUCED BY DSA CADD SYSTEM

REVISIONS			REVISIONS			SEAL:
Date	By	Description	Date	By	Description	

	Names	Dates
Drawn by	CLM	5–95
Checked by	LET	5–95
Designed by	LET	5–95
Checked by	RMC	5–95
Approved by	R.M. COURET	

DSA GROUP INC.

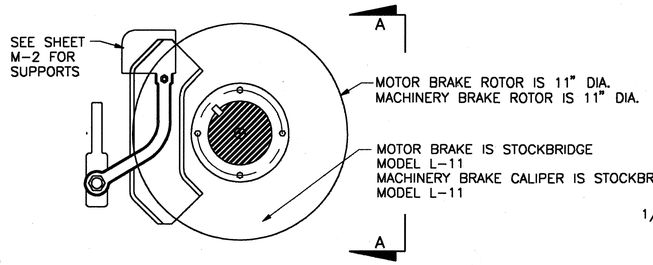
DSA GROUP, INC.
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

PINELLAS COUNTY DEPARTMENT OF PUBLIC WORKS

SHEET TITLE: SPAN LOCK DETAILS

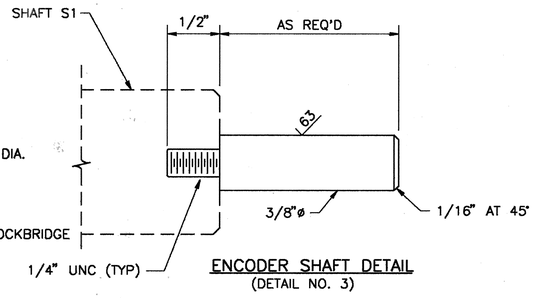
PROJECT NAME: BECKETT BRIDGE REPAIRS

SHEET M-4



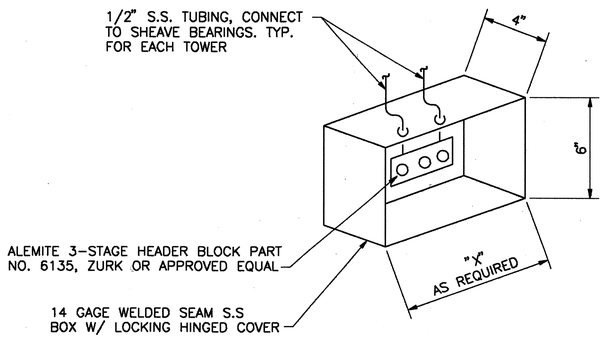
MOTOR AND MACHINERY BRAKE DETAIL

(MACH.=SPRING APPLY, HYDRAULIC RELEASE, 905 PSI RELEASE PRESSURE)
(MOTOR=HYDRAULIC APPLY, 300 PSI HYDRAULIC PRESSURE, SPRING RELEASE)
(DETAIL NO. 1)



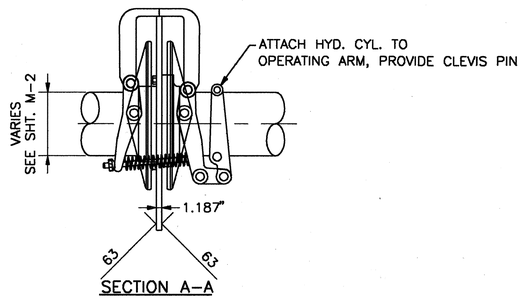
ENCODER SHAFT DETAIL

(DETAIL NO. 3)

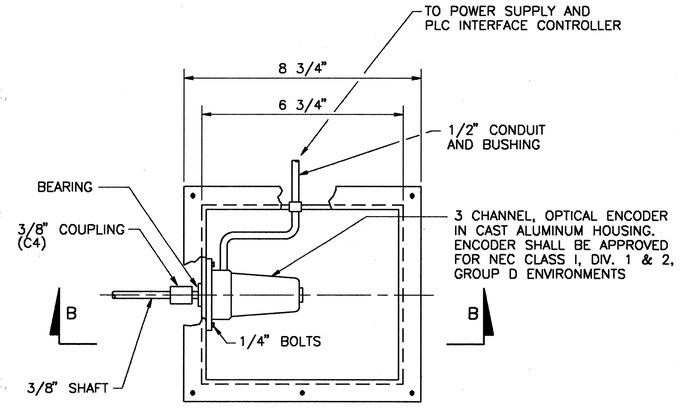


LUBRICATION STATION DETAIL

(DETAIL NO. 2)



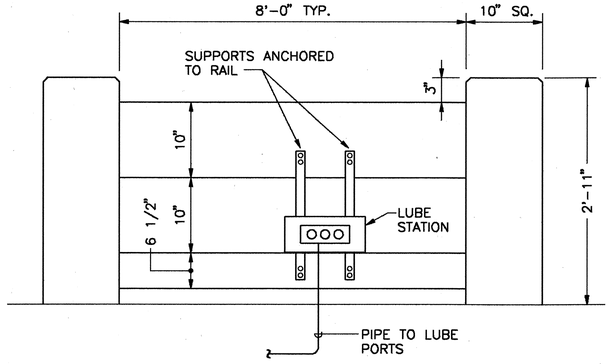
SECTION A-A



PLAN

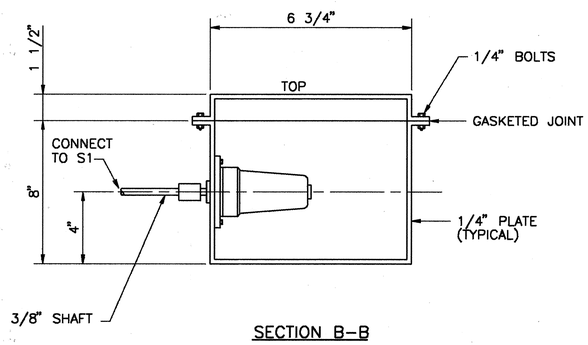
ENCODER GEAR DETAILS

(TYPICAL FOR ONE SHAFT)
(DETAIL NO. 4)

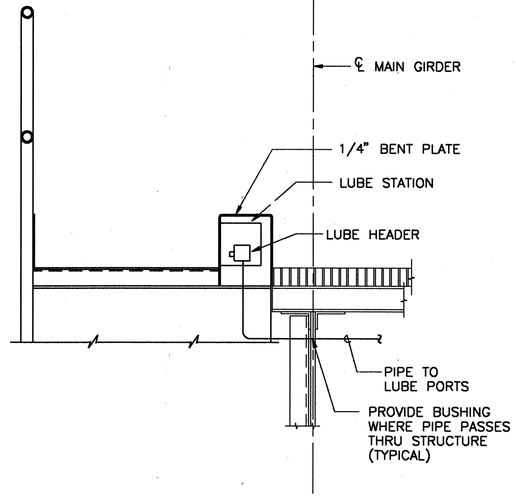


DETAIL OF LUBE STATION MOUNTED ON RAIL

(DETAIL NO. 5)



SECTION B-B



DETAIL OF LUBE STATION MOUNTED IN METAL CURB

(DETAIL NO. 6)

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Checked by	LET	5-95
Designed by	LET	5-95
Checked by	RMC	5-95
Approved by	R.M. COURET	

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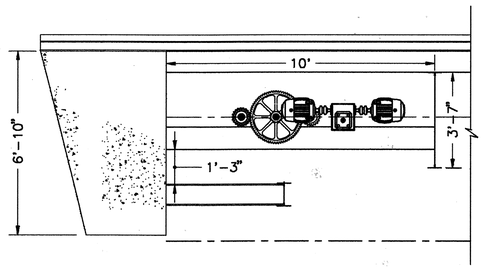
PINELLAS COUNTY DEPARTMENT OF PUBLIC WORKS

SHEET TITLE: MISCELLANOUS DETAILS

PROJECT NAME: BECKETT BRIDGE REPAIRS

SHEET M-5



SECTION A–A (DIMENSIONS)
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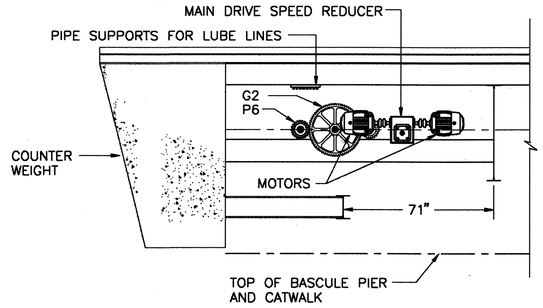

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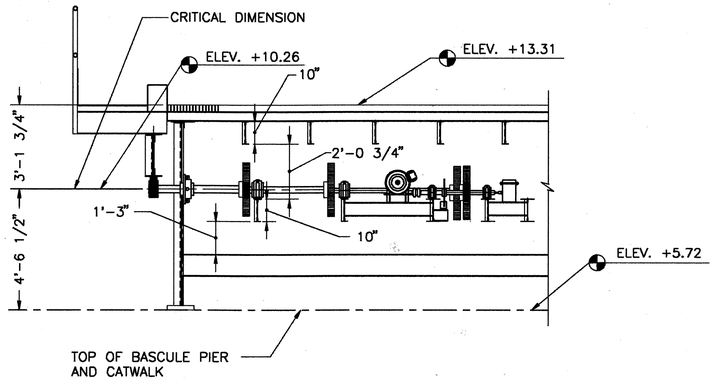

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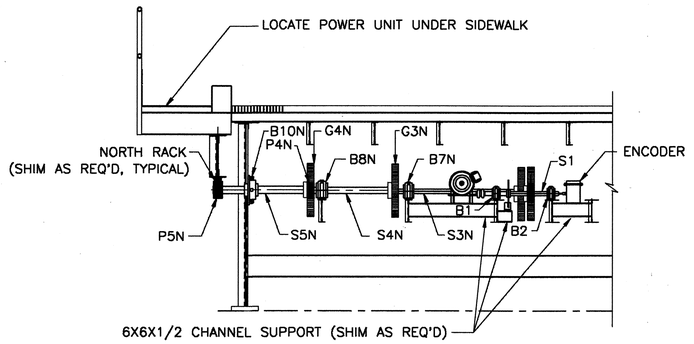

(NOTE: FOR CLARITY, MOTOR SUPPORTS NOT SHOWN)

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NOTE:
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Designed by	LET	5–95
Checked by	RMC	5–95
Approved by	R.M. COURET	

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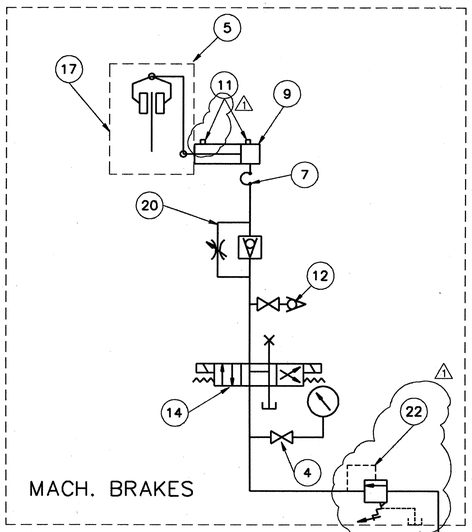
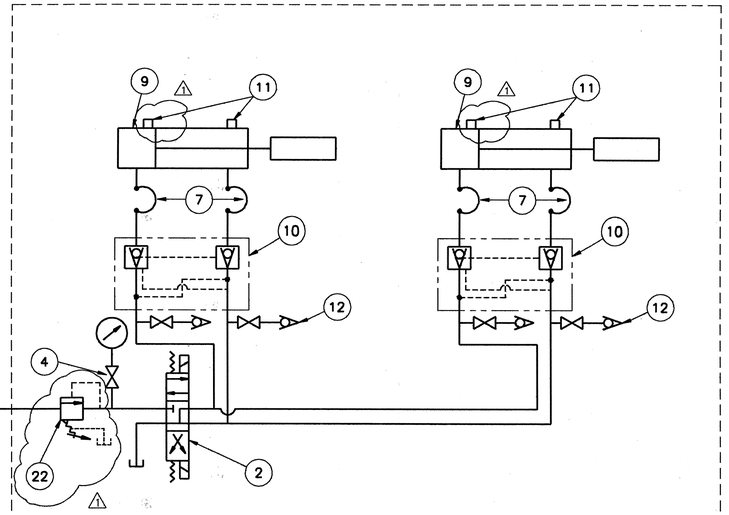
PINELLAS COUNTY DEPARTMENT OF PUBLIC WORKS

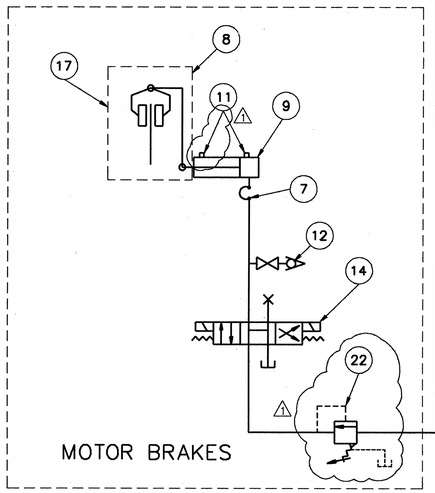
SHEET TITLE:
SECTIONS AND ELEVATIONS

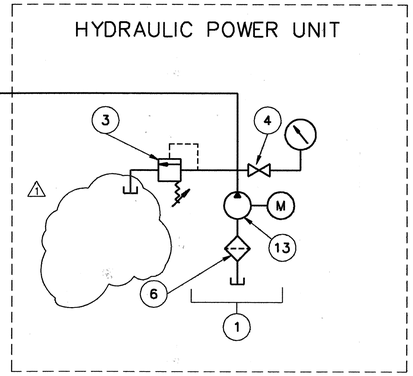
PROJECT NAME:
BECKETT BRIDGE REPAIRS

SHEET
M-6









BRAKES & SPANLOCK HYDRAULIC SYSTEM DIAGRAM

BILL OF MATERIAL

	ITEM NO.	NO. REQ'D.	PART NUMBER	DESCRIPTION	BASE MFGR	ALTERNATE MFGR *
	1	1	JIC 10 A	10 GALLON JIC RESERVOIR W/DRIP STAND	MARCO	
**	2	1	D2FWEC ⚠1	PROPORTIONAL DIRECTIONAL VALVE	PARKER	SUN
**	3	1	D03	3 STATION MANIFOLD W/RELIEF VALVE	PARKER	SUN
**	4	3	PG3000 W/ NVG250B	GAUGE W/ NEEDLE VALVE	HSI	PARKER
	5	1	L-11	MACHINERY BRAKE	STOCKBRIDGE	MICO
**	6	1	40CN110B	RETURN FILTER	PARKER	SUN
	7	12		FLEXIBLE HOSE	PARKER	GOODYEAR
	8	1	L-11	MOTOR BRAKE	STOCKBRIDGE	MICO
	9	4	4CC2HLUS14AC9	4" BORE x 9" STROKE HYDRAULIC CYLINDER	PARKER	SUN
**	10	2	⚠1	DUAL PILOT OPERATED CHECK VALVE MODULE	PARKER	HSI
+	11	8	AB-3	LIMIT SWITCH	PARKER	HONEYWELL
	12	6		CONNECTION FOR HAND PUMP	PARKER	SUN
	13	1	Q25145A	1 1/2 HP HYDRAULIC POWER UNIT	PARKER	MONARCH
	14	2	D1F-EC	PROPORTIONAL DIRECTIONAL VALVE	PARKER	SUN
	15	2	⚠1	ROTOR/CALIPER SYMBOL	STOCKBRIDGE	MICO
**	16	1	RCVA	RELIEF VALVE MODULE	PARKER	SUN
***	17	2	9662K34	1.125" X 7.58" RETURN SPRING, K=168	MCMASTER	STOCKBRIDGE
***	18	2	NA	11" DIA. VENTILATED ROTOR	STOCKBRIDGE	HAYES
***	19	2	NA	28 SQ. INCH CALIPER PADS	STOCKBRIDGE	HAYES
	20	1	SHOP ⚠1	COMBINATION CHECK VALVE AND NEEDLE VALVE	PARKER	SUN
	21	3	EW55	DRIVER BOARD FOR DIRECTIONAL VALVES	PARKER	SUN
⚠1	22	3	PR400S	PRESSURE REDUCING VALVE	PARKER	SUN

* DENOTES "OR APPROVED EQUAL"
** DENOTES ITEM INCLUDED AS PART OF ITEM 13
\+ DENOTES ITEM INCLUDED AS PART OF ITEM 18
* DENOTES ITEM LOCATED IN CONTROL CONSOLE
*** DENOTES ITEM INCLUDED AT PART OF ITEMS 5 AND 8

NOTES:
1. HYDRAULIC POWER UNIT ROTATES WITH LEAF. PROVIDE TOTALLY ENCLOSED UNIT.
2. PROVIDE HAND PUMP FOR MANUAL RELEASE OF BRAKE AND SPAN LOCKS.
3. REPLACE STOCKBRIDGE K 25.5 SPRING WITH ITEM 17

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REVISIONS				REVISIONS		
Date	By	Description		Date	By	Description
1/31/96	RMC	⚠1 ADDEND. 2-ADDED PRV & DEL. PROP. CNTL. VALVE ADDED SUBSYSTEM TITLES ADDED ITEM 22 CHANGED PART NO'S FOR ITEMS 2,14,20 CHANGED QTY'S FOR ITEMS 9,11,12,14,20				

SEAL:

	Names	Dates
Drawn by	ALC	5-95
Checked by	LET	5-95
Designed by	LET	5-95
Checked by	RMC	5-95
Approved by	R.M. COURET	

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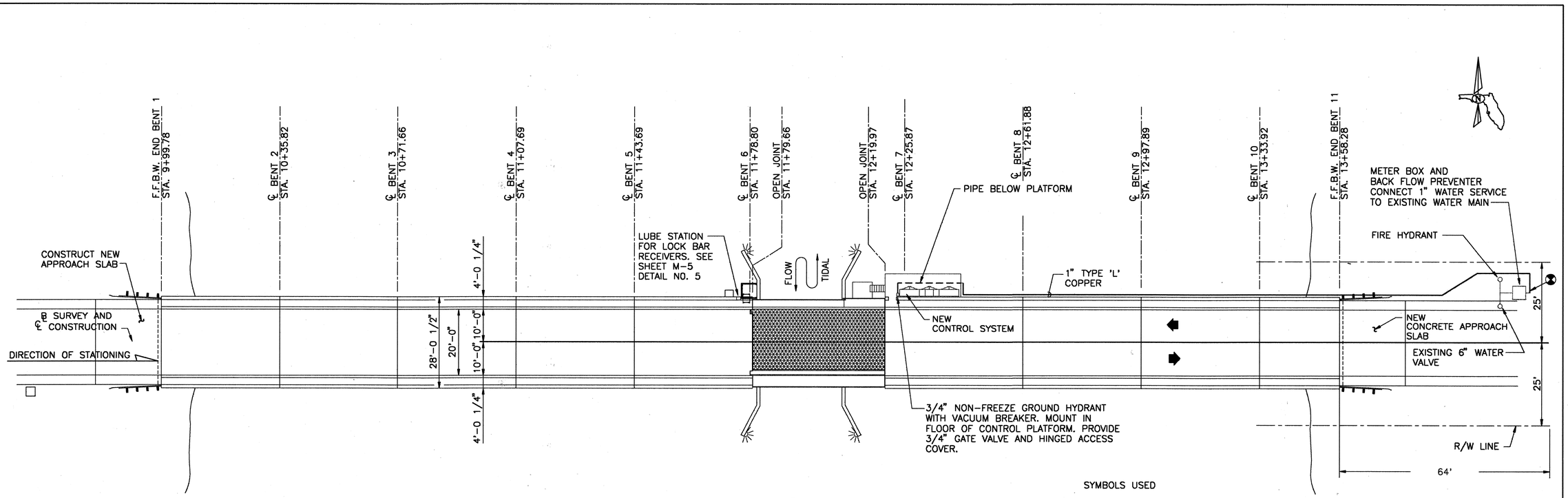
SHEET TITLE: HYDRAULIC SYSTEM SCHEMATIC

PROJECT NAME: BECKETT BRIDGE REPAIRS

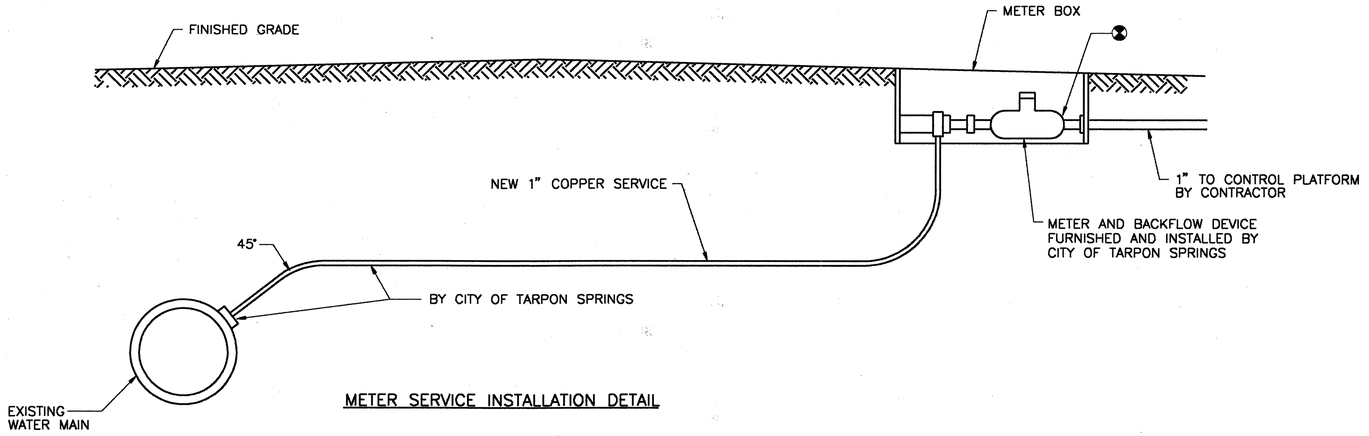
SHEET M-7



PLAN

SYMBOLS USED

⊠ = POINT OF CONNECTION



METER SERVICE INSTALLATION DETAIL

NOTES:

1. MAKE CONNECTION IN ACCORDANCE WITH THESE DRAWINGS AND CITY OF TARPON SPRINGS WATER DEPT. STANDARD SPECIFICATIONS. PROVIDE CATHODIC PROTECTION FOR UNDERGROUND TYPE "L" COPPER SERVICE PIPE. COAT EXPOSED AND UNDERGROUND PIPING WITH 50 MIL DRY COATING OF BITUMASTIC.
2. PAYMENT FOR SERVICE CONNECTION AND MATERIALS TO PROVIDE WATER SERVICE AT THE CONTROL PLATFORM SHALL BE INCLUDED IN ITEM NO. 512-1 "TENDER FACILITIES AND EQUIPMENT".

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	Names	Dates
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Designed by	LET	5-95
Checked by	RMC	5-95
Approved by	R.M. COURET	

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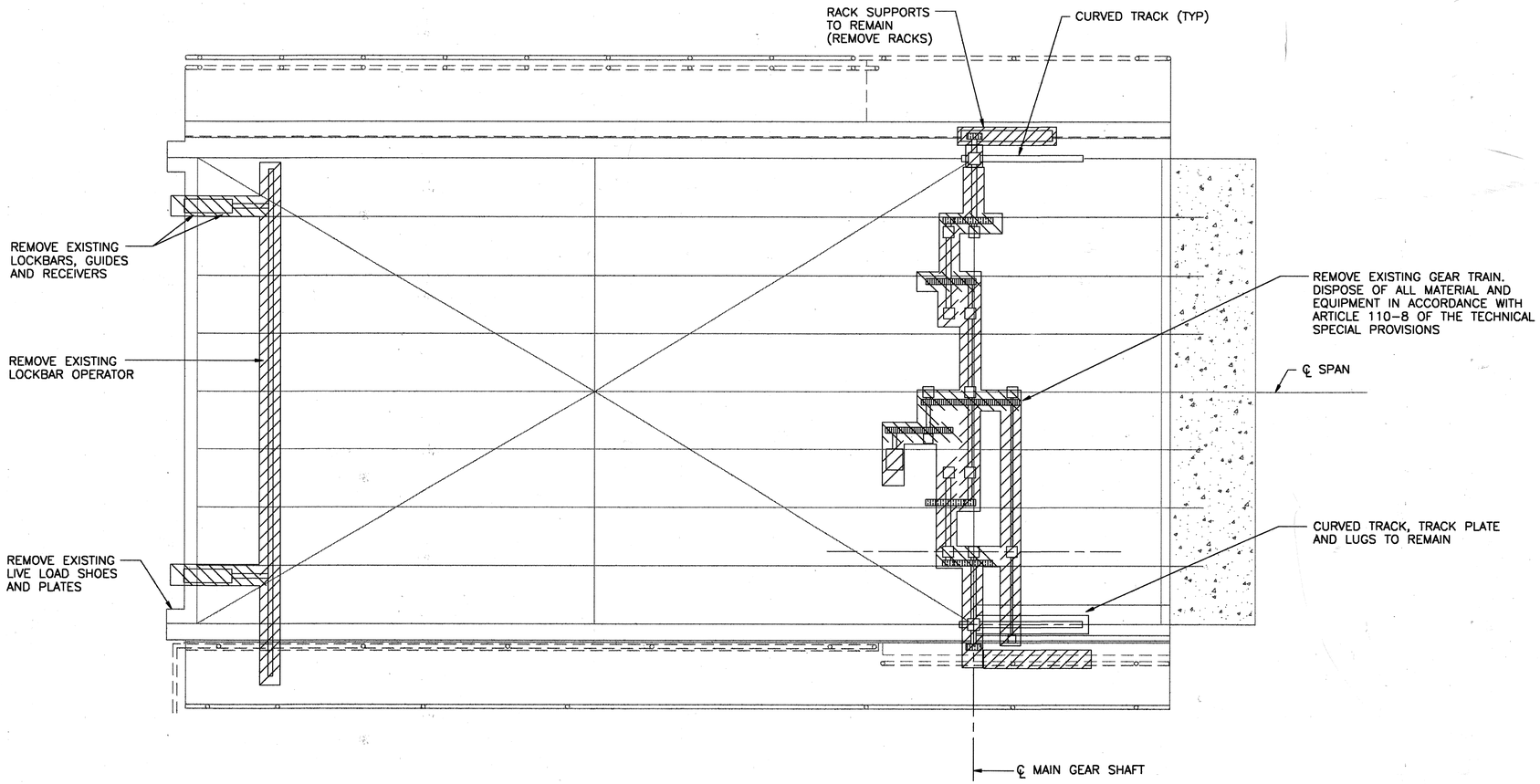
TAMPA, FLORIDA 33607

PINELLAS COUNTY DEPARTMENT OF PUBLIC WORKS

SHEET TITLE: MECHANICAL SITE PLAN

PROJECT NAME: BECKETT BRIDGE REPAIRS

SHEET M-8



DEMOLITION PLAN

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Date	By	Description	Date	By	Description

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Drawn by	ALC	5-95
Checked by	LET	5-95
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Checked by	RMC	5-95
Approved by	R.M. COURET	

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PINELLAS COUNTY FLORIDA BOARD OF COUNTY COMMISSIONERS

PINELLAS COUNTY
DEPARTMENT OF
PUBLIC WORKS

SHEET TITLE:
MACHINERY DEMOLITION

PROJECT NAME:
BECKETT BRIDGE REPAIRS

SHEET
M-9

APPENDIX C

Summary of Public Involvement Activities

Includes the Following:
Chapter 10, Draft Preliminary Engineering Report
CRC Meetings – Agendas and Meeting Notes
Meeting with FHWA, FDOT, and SHPO June 11, 2013 – Agenda, Presentation, Meeting Notes
Public Workshop – Newsletter, Summary of Comments Received, Response to Comments
Public Hearing – Handout and Summary of Comment
July 5, 2013 Memorandum, Jim Phillips, "Technical Evaluation of Single Sidewalk Concepts"

10.0 SUMMARY OF PUBLIC INVOLVEMENT

A project specific Public Involvement Program was implemented for this PD&E study. The program identified the key stakeholders and recommended activities to inform and solicit input from the community. Opportunities for community, stakeholder and agency input were provided throughout the duration of the study. A stakeholders' mailing list, which included property owners, local government staff and officials, agency representatives, special interest groups and other interested parties was maintained and updated throughout the study. More detailed information, including copies of all newsletters, handouts, meeting materials and comments received from the public are available in the *Comments and Coordination Report*, published separately.

This section documents public involvement efforts to date. It will be updated in the Final PER.

10.1 PROJECT WEBSITE

A project specific web page was established on the Pinellas County website (pinellascounty.org\beckettbridge.com) at the beginning of the study to provide updated information about the project and upcoming public meetings for the duration of the study. Comments and questions can be forwarded to the project team by email via the contact page on the website. Visitors to the website are also invited to email, write or call the County Project Manager with questions or concerns. The project schedule, newsletters, and meeting exhibits are posted on the website.

10.2 NEWSLETTERS

A newsletter was prepared and mailed with the invitation to the January 23, 2013 Alternatives Public Workshop.

10.3 AGENCY AND LOCAL GOVERNMENT COORDINATION

10.3.1 Efficient Transportation Decision Making (ETDM)/Advanced Notification (AN)

FDOT District Seven initiated the ETDM screening phase of the project. This process initiated early coordination with all Environmental Technical Advisory Team (ETAT) members. The process began with distribution of the Advanced Notification (AN) in October 2010. The *ETDM Programming Screen Summary Report* was published on June 30, 2011. A copy of the AN

package and the summary report are included in Appendix A.

10.3.2 Kick-Off Presentation and other Presentations to the Pinellas County Board of County Commissioners (BCC)

A "Kick-Off Presentation" was made to the Pinellas County BCC to introduce the project on March 13, 2012 at a regularly scheduled BCC meeting. Invitations to the meeting were distributed to all federal, state and local government officials; Pinellas County and City of Tarpon Springs staff; and FDOT.

Alternatives proposed to be shown to the public at the January 2013 Alternatives Public Workshop were presented to the BCC on October 30, 2012.

The staff "Recommended Alternative", replacement of the existing movable bridge with a new two lane movable bridge on approximately the same alignment as the existing bridge, was presented to the BCC at their October 22, 2013 meeting. The BCC approved the staff's recommendation to move forward and present the Recommended Alternative to the public at a Public Hearing in February 2014. After consideration of all public input received at the Public Hearing, the BCC agreed to meet at a regularly scheduled BCC meeting on April 15, 2014 to decide whether to confirm their approval of the Recommended Alternative. The invitation to the public hearing included an invitation to the April 15, 2014 BCC meeting.

10.3.3 City of Tarpon Springs Staff Coordination Meeting

Pinellas County hosted a coordination meeting with the Tom Funcheon, City of Tarpon Springs Public Works Director, and Gary Schurman, Engineering Projects Supervisor, on September 13, 2012. Alternatives developed to date were presented and discussed. Strategies to involve the local communities and City officials and staff were also discussed.

10.3.4 Pinellas County Metropolitan Planning Organization (MPO) Meetings

Presentations were made at MPO Board and MPO Advisory Committee meetings between October 15, 2012 and November 14, 2012. This presentation included a discussion of the PD&E Process and the status of the ongoing study. In addition, conceptual designs and anticipated environmental impacts of alternatives that were anticipated to be carried forward to the Alternatives Community Workshop were presented. The meetings were held on the following dates.

- MPO Pedestrian Transportation Advisory Committee Meeting - 10/15/12
- MPO Bicycle Advisory Committee Meeting - 10/22/12
- MPO Technical Coordinating Committee (TCC) - 10/24/12
- MPO Citizens Advisory Committee (CAC) - 10/25/12
- Pinellas County MPO Board - 11/14/12

After the BCC approved the "Recommended Alternative" at their October 22, 2013 meeting, presentations were made to the MPO CAC, TCC and MPO Board. This presentation included information about the "Recommended Alternative" proposed to be presented at the February 2014 public hearing. The meetings were held on the following dates.

- MPO Technical Coordinating Committee (TCC) - 10/23/13
- MPO Citizens Advisory Committee (CAC) - 10/25/13
- Pinellas County MPO Board - 11/13/13

10.3.5 City of Tarpon Springs Commission Presentations

A presentation was made to the City of Tarpon Springs Commission on November 20, 2012, prior to the January 2013 Alternative Workshop. A presentation was also made to the Tarpon Springs City Commission on October 1, 2013 to update them on the status of the project.

10.3.6 Other Stakeholder Groups

Presentations about the alternatives evaluated during the study were made to the following groups.

Tarpon Springs Yacht Club Board Meetings

- October 17, 2012
- December 18, 2013

Tarpon Springs Chamber of Commerce breakfast meeting - November 21, 2012.

Tarpon Springs Rotary Club - January 31, 2012

Tarpon Springs Historical Society – January 16, 2014

A powerpoint presentation was made about the status of the project and evaluation of alternatives at all meetings. Members of the project team were available to address questions and concerns at all meetings.

10.3.7 Cultural Resource Committee Meetings (CRC)

A number of historic structures are located within the vicinity of the Beckett Bridge project corridor. In addition, the Beckett Bridge was determined to be eligible for listing in the National Register of Historic Places by FHWA and SHPO early in the project. Accordingly, a Cultural Resource Committee (CRC) was assembled to address historic resource issues during the study. Three meetings were held during the course of the study. The first CRC meeting was held on October 29, 2012 at the Tarpon Springs Heritage Museum. Representatives from SHPO, FHWA, FDOT, Tarpon Springs Historic Society, USCG, City of Tarpon Springs and Pinellas County were invited. The purpose of the meeting was to discuss alternatives currently under consideration, the historic significance of the bridge and to provide an opportunity for input into the Section 106 process.

A second CRC meeting was held on March 13, 2013. At this meeting, public comments received at the Alternatives Community Workshop were presented. Discussion also included a review of the rehabilitation and movable bridge alternatives, potential effects to the historic bridge and discussion of possible mitigation/minimization measures. As a result of this meeting, the project team investigated three additional rehabilitation concepts that would provide safer and wider sidewalks.

A third CRC meeting was held on April 24, 2014, after the Public Hearing and subsequent County Commission Meeting. The "Replacement of the Existing Bridge with a New Low-Level Movable Bridge Alternative" was presented as the Recommended Alternative at the February 26, 2014 Public Hearing. At the subsequent County Commission meeting on April 15, 2014, the Commission concurred that the Recommended Alternative could proceed to FHWA as the Preferred Alternative. The April 24, 2014 CRC meeting included an update on the results of the Public Hearing and Commission meeting, a discussion of the Section 106 process completed to date, a discussion of effects, and a discussion of desired mitigation measures to be included in the Memorandum of Agreement.

10.4 PUBLIC MEETINGS

10.4.1 Alternatives Community Workshop

An Alternatives Community Workshop was held on January 23, 2013 at the Tarpon Springs Yacht Club in Tarpon Springs Florida, located adjacent to the Beckett Bridge. The meeting was well attended; 120 individuals signed in. The purpose of the meeting was to present the alternatives under evaluation, and provide an opportunity for community input. Graphics and informational boards about the alternatives considered were on display and a short video presentation was shown continuously throughout the evening. Project team members and County staff were available to address individual questions and accept comments. Comment forms and the Alternatives Evaluation Matrix were provided to attendees. A court reporter was also available to record public comments.

A total of 71 individuals submitted comments between December 28, 2012 (the date the workshop invitation letter was mailed) and February 28. These comments included those submitted on comment forms, in letters, via email or via the "contact us" page on the website, or verbally provided to the court reporter at the meeting. A summary of comments received, as well as a summary of responses, was provided to all those who submitted comments and posted on the project website. Summary of comments received is provided below.

Summary of Comments

Not all comments included a preference for a specific proposed alternative. Some comments requested alternatives other than those presented. The following summary accounts for comments that did state a preference for an alternative that was presented at the Workshop. Please note that a decision regarding the selection of a "Preferred Alternative" is based on many factors, one of which is community input. **These numbers are not considered "votes."**

No-Build	7
No-Build with Removal of Existing Bridge	2
Rehabilitation	11
Rehabilitation or Movable Bridge	12
New Movable Bridge	32
New Fixed Bridge (Vertical Clearance 28 feet)	4

Preference for Alternatives Other than those Presented

- Construction of a fixed bridge with only seven to eight feet of clearance
- Rehabilitation with widening to provide bicycle lanes and sidewalks
- Rehabilitation with an inoperable movable span
- Rehabilitation with improved sidewalks to accommodate disabled
- Rehabilitation with current weight restrictions enforced
- Consider a tunnel

Many individuals expressed strong opposition to removing the existing bridge permanently.

Many individuals commented on specific concerns. A summary of issues raised follows:

Pedestrian/Bicycle Facilities

- Bicycle lanes and sidewalks are needed on the new bridge.
- The existing sidewalk is not adequate, wider sidewalks are needed.
- Bicycle lanes and sidewalks should be constructed on Riverside Drive approaching the bridge.
- Bicycle lanes and sidewalks are important especially since there is a nationwide emphasis on health and exercise
- Money should not be spent for bicycle lanes or sidewalks on the bridge since there are currently no bicycle lanes and sidewalks on Riverside Drive approaching the bridge.
- Only one sidewalk is needed; there is no need to impact property owners with two sidewalks.
- Bicycle lanes and sidewalks should be added to the bridge if rehabilitated.
- Bicycle lanes are not needed and a sidewalk is needed only on one side
- Sidewalks should accommodate those with disabilities.
- The bridge should be closed to traffic and open only to pedestrians and bicycles.
- The bridge should have one walking lane and one lane for vehicles.

Vertical Clearance

- Limiting clearance will negatively affect waterfront property values by restricting access to deeper water for tall boats.
- Constructing a movable bridge to accommodate all boats is desirable.
- Tarpon Springs is a "water-based" community. There are too many "water – based" events to construct a fixed bridge.
- Whitcomb Bayou serves as a refuge for all boats during storm events. Clearance should not be limited.
- There are not enough boats requiring more than 28 feet of clearance to justify the cost of a new movable bridge or for a fixed bridge higher than 7 or 8 feet.
- Limiting clearance will not affect waterfront property values.
- Constructing a movable bridge to accommodate a few tall boats is not economical.
- The fixed bridge will provide enough vertical clearance since the water depth in the bayou and channel does not allow for large sail-boats.
- Opportunities to relocate existing boats that require the bridge to open at docking facilities on the other side of the bridge should be explored.

Historical Context and Significance

- A new bridge should be similar in design to the existing historic bridge.
- Tarpon Springs is and important heritage tourist attraction and the historic bridge is part of the attraction for tourists.
- The historical character of the bridge should be preserved.
- A fixed bridge will negatively affect the historic character, beauty and aesthetics of the area.
- Construction of a replacement bridge will negatively impact the historic character of the community.
- The Tarpon Springs Historical Society opposed replacement of the historic bridge and supports rehabilitation.

Costs

- Spending additional money to accommodate boats with high masts is not reasonable.
- Spending money on a new bridge is not acceptable.
- Rehabilitation is not a long-term solution.
- A new bridge should be constructed now since construction will cost more in the future.
- A mid-level fixed bridge will save bridge tender costs and allow most boats to pass under.
- Money should not be spent to continually repair the bridge, it should be replaced.
- Costs to buy right-of-way and possible legal challenges if eminent domain is necessary to acquire the right-of- way for the fixed bridge will likely exceed the cost of the movable bridge.
- The bridge will last more than ten years if No-Build is selected.

Flooding and Roadway Repairs

- Riverside Drive and the Bridge cannot function as an effective evacuation route because the bridge approaches flood in storm conditions.
- Potholes should be repaired and flooding issues on Riverside Drive should be addressed before money is spent replacing the bridge.
- Repair or replacement of Riverside Drive is needed between the bridge and Alternate US 19.
- Detour
  - Damage to local roads on the detour route should be repaired after construction is complete.
  - The Moorings Condominium entrance is located on a blind curve on Whitcomb Bayou. A detour will increase traffic to this area and possibly create a dangerous situation. The Moorings representative requested that traffic not be detoured to Whitcomb Boulevard, but should be directed from South Florida Avenue to Meres Boulevard.

Community/Property Impacts

- A new bridge will destroy the uniqueness of the community.
- The fixed bridge options will destroy the ambiance of the community.
- The fixed bridge will impact property and destroy waterfront views.
- The fixed bridge looks like a freeway and is not compatible with the community.
- A new bridge should minimally impact the current residents.
- Impacting property to construct the proposed fixed bridge is not acceptable.
- Retaining walls are intrusive on views of the mobile home park and others.
- The movable bridge is less intrusive on nearby properties.
- The movable bridge maintains the "community" feeling of the area.

Traffic and Evacuation

- The bridge should not be removed since it is important for emergency evacuation.
- The assisted living facilities on Chesapeake Drive rely on the bridge for immediate access for emergency response.
- The bridge is important for moving traffic from the Sunset Hills area into town.
- The fixed bridge will negatively impact traffic patterns for adjoining residents.
- The bridge is important for access to downtown Tarpon Springs.
- More speed bumps should be installed on Riverside Drive.

Other

- The trailer park should be purchased for a city park.

10.4.2 Public Hearing

A Public Hearing was held on February 26, 2014 at the Tarpon Springs Yacht Club. Information about the "Recommended Alternative" and all other alternatives evaluated during the PD&E study was presented. An invitation letter, project fact sheet, public notice and comment form were mailed to approximately 1,200 property owners and other stakeholders three weeks prior to the Public Hearing. One hundred persons signed in at the meeting.

Graphics and informational boards about the alternatives considered were on display prior to and after the formal portion of the Public Hearing. The formal portion of the hearing consisted of an introduction by County staff, a 30 minute video presentation and a formal public comment period. Project team members and County staff were available to address individual questions and accept comments. A Public Hearing Handout which included the Alternatives Evaluation Matrix was provided to attendees. Comment forms were available. A court reporter recorded the formal portion of the Public Hearing and was also available to record public comments on a one-to-one basis during the informal portion of the hearing.

Six individuals spoke at the public hearing. Twenty-two individuals submitted comments during the official Public Hearing comment period. These comments included those submitted on comment forms, in letters, via email or via the "contact us" page on the website, or verbally provided to the court reporter at the meeting. A summary of the comments is provided below.

- 19 – Supported Recommended Alternative
- 1 – Requested a new low-level fixed bridge
- 1 - Requested preservation of existing bridge
- 1 – Requested consideration of a fixed bridge or repair of existing bridge with the elimination of the "drawbridge functionality".

Speakers at Public Hearing:

Five of the six speakers specifically stated that they supported the Recommended Alternative.

One objected and expressed desire for a low-level fixed bridge.

Comment Forms, Letters and Emails Received

Fourteen individuals specifically supported Recommended Alternative.

One individual expanded on comments made at public hearing.

Two individuals (Ms. Cyndi Tarapani and Mr. Robert Faison) objected to the Recommended Alternative.

- Ms. Tarapani requested preservation of the existing bridge

- Mr. Faison requested consideration of a fixed bridge or repair of the existing bridge but eliminate the functionality of the drawbridge.

Four individuals did not specifically state support for the Recommended Alternatives, but stated concerns or raised questions associated with the proposed replacement of the existing bridge.

Summary of Comments and Concerns:

Comments related to the Proposed Detour

- Is it possible to construct a temporary pedestrian bridge or provide a "ferry" for pedestrians during construction?
- Requested a temporary bridge during construction for vehicles and for emergency evacuation
- Suggested that construction techniques exist that could reduce detour time in half
- Requested detour signage that was clear to travelers, provided a specific detour signage plan
- Requested that roadways on the detour routes be repaired prior to closing the bridge

Comments related to the design/looks of the Recommended Alternative

- Requested design similar to existing, but wider with sidewalks and bike lanes as proposed.
- Requested that the new bridge be designed similar to existing historic bridge

Comments Related to Roadway and Drainage

- Spring Boulevard needs to be elevated because it floods during high tides during storms, preventing access to the bridge for evacuation.
- Requested that drainage improvements be made to the approach roadways.

Funding and Cost

- How will the bridge be funded?
- Will my property taxes be raised to pay for the bridge?

Other Comments

- Can future Commissioners change the status of the project since it will take several years to design?
- Boat access to the Bayou is needed for sanctuary during hurricanes.
- The new bridge should be "boat friendly" with bumpers that don't obstruct the slips at the Tarpon Springs Yacht Club.
- A number of individuals expressed support for incorporating parts of the existing bridge into the new bridge.
- The existing speed bumps are not necessary. The speed bumps cause safety problems for two-wheel vehicles. Local police should enforce the speed limits.
- Are there plans to deepen or restore the channel?
- There is an active osprey nest near the site.
- Requested that boat owners be able to operate the movable span remotely to eliminate the need for County staff to open the bridge

Two individuals who own property immediately adjacent to the bridge expressed concerns about how the proposed project could affect their property.

Stephen Katsarelis, owner of the single family residence in the southeast corner of the bridge, across from the Yacht Club supported the recommended alternative but expressed the following concerns:

- Concerned about privacy of his pool and hot tub from the raised bridge
- Concerned about impacts to his privacy fence and hedge
- Concerned about safety – specifically speeding on wider bridge, stated that more effective speed bumps should be considered
- Requested additional information about contaminated sites mentioned in the public hearing presentation

Robert Faison, resident at 408 Riverside Drive, immediately adjacent to the bridge in the northwest quadrant, across from Bayshore Mobile Home Park, objected to the Recommended Alternative. Mr. Faison recommended that the County consider a fixed bridge or repair the existing bridge but eliminate "the draw bridge functionality". He also expressed the following

concerns about impacts from the Recommended Alternative:

- Impacts from traffic noise from additional traffic
- Impacts to view
- Safety exiting residential driveway
- Increase in traffic accidents
- Impacts of Construction noise
- Impacts to wood privacy fence
- Impacts to his current access to the sidewalk on Riverside Drive

Ms. Tarapani, president of the Tarpon Springs Preservation Society, requested that the existing bridge be restored.

Cultural Resource Committee Meeting Agenda
Beckett Bridge PD&E Study
Pinellas County Project ID: PID 2161
FDOT Financial Project ID: 424385-1-28-01

Date: October 29, 2012
Time: 2:00 pm
Location: Tarpon Springs Heritage Museum, Tarpon Springs, FL

A. Introductions

B. Power Point Presentation

1. Project Overview and Status
2. Section 106 Process

C. Discussion of Alternative Selection Process

D. Committee Feedback, Issues & Concerns

E. Next Meeting Date

Cultural Resource Committee Meeting Agenda
Beckett Bridge PD&E Study
Pinellas County Project ID: PID 2161
FDOT Financial Project ID: 424385-1-28-01

Date: March 13, 2013
Time: 2:30 pm
Location: Tarpon Springs Heritage Museum, Tarpon Springs, FL

A. Introductions

B. Power Point Presentation

1. Brief Project Review
2. Summary of Public Comments (since Alternatives Workshop)
3. Discussion of Rehabilitation Alternative
4. Discussion of Movable Bridge Alternative
5. Discussion of Effects to the Significant Bridge
6. Discussion of Possible Mitigation/Minimization Options

C. Discussion of Effects and Input on Possible Mitigation/Minimization Options

D. Other Committee Feedback, Issues & Concerns

E. Next Meeting Date

Cultural Resource Committee Meeting Agenda
Beckett Bridge PD&E Study
Pinellas County Project ID: PID 2161
FDOT Financial Project ID: 424385-1-28-01

Date: April 24, 2014
Time: 1:30 pm
Location: Tarpon Springs City Hall, 324 E. Pine Street, Tarpon Springs, FL 34689

A. Introductions

B. Power Point Presentation

1. Update on Results of Public Hearing
2. Summary of Section 106 Process Completed to Date
3. Discussion of Effects
4. Discussion of Remaining Steps in Section 106 /Section 4(f) Process

C. Discussion of Possible Mitigation/Minimization Options

D. Discussion of MOA

Meeting Notes

Date: October 29, 2012
Time: 2:00 pm
Place: Tarpon Springs Heritage Museum, Craig Park
RE: 1st Cultural Resources Committee Meeting
Beckett Bridge PD&E Study
FDOT PID: 424385-1-28-01

Recorded by: Ann Venables

Attendees:
Theresa Farmer, FDOT
Robin Rhinesmith, FDOT
Roy Jackson, FDOT
Rebecca Spain-Schwarz, Atkins (FDOT GEC)
Tony Horrnik, Pinellas County
Ann Venables, EC Driver
Jim Phillips, EC Driver
Amy Streelman, Janus Research
Ken Hardin, Janus Research
Andrew Hayslip, EC Driver
Dan McClarnon, SHPO
Alyssa McManus, SHPO
Evelyn Smart, USCG
Kathleen Monahan, City of Tarpon Springs
Mark LeCouris, City of Tarpon Springs
Richard Pease, Tarpon Springs Yacht Club
Peggy Proestes, Tarpon Springs Historical Society

Purpose
The purpose of this first meeting included the following:

- Introduce the project and discuss the current status of alternatives development and public involvement efforts
- Discuss the Section 106 process and how it applies to this PD&E study
- Obtain input from members regarding the importance of the existing bridge as a historic resource

Summary of Discussion
Ann Venables provided an overview of the PD&E study and the alternatives developed to date. Ken Hardin discussed the Section 106 process and the purpose of the CRC. Amy Streelman presented the Cultural Resources Assessment Survey results and discussed the significance of the bridge. Jim Phillips discussed the existing condition of the Beckett Bridge and what would be required for rehabilitation. Ken Hardin led the subsequent discussion, which is summarized below:

- The Beckett Bridge is one of a few remaining historic, rolling-lift, single leaf bascule highway bridges in Florida.

- The only remaining portion of the original 1924 structure is the steel bascule leaf. Alyssa McManus stated that if a rehabilitation alternative involved replacement of the approach spans but preserved the existing steel leaf, it might be possible that the impact to the historical resource would not be considered substantial.

- Dan stated that it is SHPO's role to challenge the engineers to thoroughly evaluate possible rehabilitation options, so that there could be a conditional no adverse effect under Section 106.

- Rebecca Spain-Schwarz asked if there was any way that a sidewalk could be added to the bascule span if the existing bascule leaf were rehabilitated and used in a new structure. One limitation of this suggestion is the narrow width of the existing bascule span compared to the proposed typical section for the approach spans for a replacement bridge.

- All build alternatives, and "No Build with Permanent Removal of the Bridge" will involve demolition of the historic bridge and would constitute an "adverse effect".

- EC Driver has not finalized cost estimates yet. However, the cost of rehabilitation would be about $8M–$10 M, compared to replacement which would cost about 12-15 for replacement.

- A discussion of whether possible federal funding sources were available for preservation of historic resources that could be obtained for rehabilitation of the existing bridge. Ken Hardin explained that most grants and other funding for preservation of historic structures would not apply to the bridge and/or would not be sufficient to cover the costs.

- Tony Horrnik discussed the County's concerns about the required continual maintenance and repairs required to keep the bridge operational.

- Katherine Monahan stressed the importance of the "look and feel" of a new bridge, if a constructed, in terms of how it defines the "look and feel" of the community. She also urged the County to consider elements such as the scale, mass, and aesthetics of the bridge and how it would affect the "sense of place". She noted that this is an important entry and egress to the nearby Tarpon Springs Historic District.

- Katherine mentioned the maritime heritage of Tarpon Springs as an important aspect of the community that should be considered when making decisions about aesthetics of a replacement bridge if constructed. Decisions should reflect community values.

- Roy Jackson pointed out that since the bridge is not located within the National Register Historic District, a discussion of aesthetics for a replacement bridge would be considered more of a sociocultural effects issue rather than a Section 106 issue.

- Mitigation opportunities, based on other projects in which historic bridges were demolished, could include construction of an informational kiosk about the bridge, archival quality bridge plans and drawings to be preserved, use of open style railings to preserve the viewshed from the bridge.

Meeting Notes

Date: March 13, 2013
Time: 2:30 pm
Place: Tarpon Springs Heritage Museum, Craig Park
RE: 1st Cultural Resources Committee Meeting
Beckett Bridge PD&E Study
FDOT PID: 424385-1-28-01

Recorded by: Ann Venables

Attendees:
Theresa Farmer, FDOT
Robin Rhinesmith, FDOT
Roy Jackson, FDOT (teleconference)
Linda Anderson, FHWA (teleconference)
Rebecca Spain-Schwarz, Atkins (FDOT GEC)
Tony Horrnik, Pinellas County
Paul Bellhorn, Pinellas County
Ann Venables, EC Driver
Jim Phillips, EC Driver
Amy Streelman, Janus Research (teleconference)
Ken Hardin, Janus Research
Andrew Hayslip, EC Driver
Dan McClarnon, SHPO (teleconference)
Alyssa McManus, SHPO (teleconference)
Evelyn Smart, USCG (teleconference)
Kathleen Monahan, City of Tarpon Springs
Mark LeCouris, City of Tarpon Springs
Richard Pease, Tarpon Springs Yacht Club
Peggy Proestes, Tarpon Springs Resident
Cyndi Tarapini, Tarpon Springs Historical Society

Purpose

The purpose of this second meeting included the following:

- Present a summary of comments received from the community since the January 23, 2013 Alternatives Community Workshop
- Discuss the Rehabilitation and Movable Bridge Alternatives in more detail
- Obtain additional input from members regarding the acceptability of the Rehabilitation and Movable Bridge Alternatives from a Section 106 perspective
- Discuss possible mitigation opportunities for loss of the historic resource if the Movable Bridge Alternative was selected as the Recommended Alternative

Summary of Presentation and Discussion

Presentation (Power Point)

Ann Venables provided a brief overview of the current status of the PD&E study and the alternatives developed to date. In addition, a summary of comments received from the public since the January 2013 was presented.

Jim Phillips discussed the details of the proposed improvements included in the rehabilitation alternative as proposed and shown at the public hearing. In addition, the movable bridge replacement alternative was discussed.

The Rehabilitation Alternative as presented at the Alternatives Workshop does not include widening. Accordingly, the very narrow 2'2" sidewalks will remain and no shoulders will be added. Notable repairs include:

- Replacement of the bascule leaf (including counterweight)
- Installation of crutch bents at most bents
- Installation of pile jackets with cathodic protection will be required on all piles
- Bascule Machinery will be replaced
- Bascule Span Electrical System will be replaced
- Replacement of the Bridge Rail

Ken Hardin reviewed Status of Section 106 Efforts to date.
Possible Mitigation Options were presented by Jim Phillips.

Discussion

A discussion about the definition of "Rehabilitation" ensued. Because the movable span would be replaced, Evelyn Smart originally stated that the proposed work may not be considered rehabilitation by the USCG. However, later in the discussion, Ms. Smart clarified her position and stated that since the vertical and horizontal navigational clearances were not proposed to be changed, the improvements could be considered rehabilitation. Roy Jackson stated that the USCG, FHWA and SHPO will need to agree on how to define rehabilitation vs. replacement.

There was discussion of providing a replacement bascule bridge which used the Scherzer rolling lift, single leaf design that was aesthetically compatible with the surrounding community. It is possible to replace the existing bridge with a very similar bridge that could be improved aesthetically.

Jim explained that standard FDOT bridge types were represented in the renderings of the movable bridge replacement alternative (and the fixed bridge replacement alternatives) shown at the workshop. The purpose of not embellishing the renderings with specific aesthetic elements was to allow a "fair" comparison of all build alternatives. A request was made for a rendering of a movable bridge alternative that was similar in design to the existing bridge with an open railing.

Dan and Alyssa discussed the SHPO's position concerning preservation of the existing bridge. Of the reported seven remaining pre-1956 Scherzer rolling lift, single leaf, highway bridges in Florida, SHPO has determined that the Beckett Bridge is the most suitable for preservation, because of its location in Tarpon Springs. They also noted the small scale of the bridge and the compatibility with surrounding area.

Further discussion followed concerning the engineering risks associated with rehabilitation. "Rehabilitation" for the Beckett Bridge would require "piece by piece" replacement of many major bridge components. Jim Phillips pointed out that geological conditions exist that may affect the existing substructure, even with the addition of crutch bents.

Dan and Alyssa stated that rehabilitation that required "piece by piece" replacement (in kind) of many major bridge components could still be considered "Rehabilitation" and "Preservation". It was noted that a conditional no adverse effect under Section 106 could be possible with the Rehabilitation option.

Jim Phillips reiterated that the movable bascule leaf would need to be replaced along with all of the machinery. The current design exposes the bascule bridge machinery to aggressive salt water environment compared to newer designs which would enclose and protect the machinery.

Not all members agreed that Rehabilitation was the best option. Richard Pease, Commodore of the Yacht Club supported replacement of the existing bridge over rehabilitation.

Cyndi Tarapini stated that the Tarpon Springs Historic Society Board voted to recommend rehabilitation of the bridge. Ms. Tarapini stated that she did not know if the Board's position would change based on the discussion of how much of the bridge would actually require replacement for the proposed Rehabilitation Alternative. Jim Phillips and Ann Venables offered to meet with the Board and present the details of the repairs proposed for the Rehabilitation Alternative.

A discussion concerning the need for improved bicycle and pedestrian facilities ensued. Most CRC members agreed that improvements to the existing sidewalk facilities were warranted. There was no consensus on whether sidewalks on both sides of the bridge or a multi-use path on one side of the bridge was the better solution.

Some members also stated that bicycle lanes were warranted. Other members felt that there was no need for bicycle lanes since bicycle lanes were not provided on connecting roadways along the proposed Howard Park Trail.

Concerns were raised that widening the bridge to improve sidewalk facilities without adding shoulders and other features to meet current design standards would result in safety risks. The design engineer and County Engineer would be required to sign and seal any design exceptions.

Dan and Alyssa recommended an open railing to preserve the viewshed of the bridge.

A consensus was reached that additional development and analysis of a Rehabilitation Alternative which included widening to provide wider sidewalks was warranted. A request was also made for computer renderings of this alternative when developed. It was agreed that the County would postpone selection of a Recommended Alternative until after development and analysis of this option.

Meeting Notes

Date: April 24, 2014
Time: 1:30 pm
Place: Tarpon Springs City Hall
RE: 3rd Cultural Resources Committee Meeting
Beckett Bridge PD&E Study
FDOT PID: 424385-1-28-01

Recorded by: Ann Venables

Attendees:

Todd Bogner, FDOT
Linda Anderson, FHWA (teleconference)
Rebecca Spain-Schwarz, Atkins (FDOT GEC)
Tony Horrnik, Pinellas County
Paul Bellhorn, Pinellas County
Ann Venables, URS
Jim Phillips, URS
Amy Streelman, Janus Research (teleconference)
Ken Hardin, Janus Research
Dan McClarnon, SHPO (teleconference)
Alyssa McManus, SHPO (teleconference)
Evelyn Smart, USCG (teleconference)
Mark LeCouris, City of Tarpon Springs
Maryann Irving, Tarpon Springs Yacht Club
Phyllis Kolianos, Tarpon Springs Historical Society, President

Purpose

The purpose of this second meeting included the following:

- Present a summary of the February 26, 2104 Public Hearing - including attendance and comments received during the official Public Hearing comment period
- Discuss elements of the Section 106 process completed to date
- Discuss effects of alternatives considered
- Discuss remaining steps left in Section 106 process
- Discuss possible mitigation for inclusion in the MOA

Summary of Presentation and Discussion

Presentation (Power Point)
Ann Venables provided a brief overview of the Public Hearing, held on February 26, 2014. The presentation slides, attached to these minutes, summarize the number of invitations, attendees and comments received from the public. Results of the April 15, BCC meeting were also discussed.

Ken Hardin led the Section 106 discussion which is summarized in the attached presentation slides.

A summary of the discussion regarding mitigation measures that should be included in the MOA is provided below.

Mitigation/MOA Discussion

Historic American Engineering Record (HAER)

SHPO and FHWA agreed that HAER documentation should be included as a requirement in the MOA. There was some discussion about whether or not a copy would be required to be sent to the Park Service in Washington D.C. Dan McClarnon and Alyssa McManus stated that SHPO's current policy is to include the National Park Service in the review /approval process. Accordingly, the MOA will include the Park Service in this process.

Phyllis Kolianos requested a copy of the documentation package prepared for the HAER for the Tarpon Springs Historic Society.

Amy Streelman will provide a rough estimate on the cost to provide additional copies of this mitigation.

Design of the Replacement Bridge

Dan and Alyssa stated that it was important to SHPO that the design of the replacement bridge, in terms of engineering, be the same as the existing bridge. Preserving the character of the area by constructing a replacement design of similar scale and character is an important consideration.

Accordingly, the MOA will state that the replacement bridge will be a single-leaf, rolling lift bridge of similar design. However, other aesthetic elements of the bridge will be determined by an aesthetics committee that will be assembled during the design phase. This committee will include representatives of the community and local governments, including the Tarpon Springs Historical Society.

Jim Phillips pointed out that the bridge rail on the existing bridge does not meet current crash testing criteria. Accordingly, selection of an "open" bridge rail, which will allow those on the bridge a better view of the surrounding area will likely be limited to a steel rail.

Dan stated that preserving the viewshed from the bridge was not a major concern of the SHPO. It is more important that the view from the water and surrounding areas is preserved by designing a bridge of similar design and scale.

Incorporating Elements of the Existing Bridge into a Replacement Bridge

Discussions about incorporating some of the gears or mechanical elements of the existing bridge into the design of the new bridge have been ongoing throughout the study. An example of incorporation of gears into a new bridge pedestrian rail in Seattle Washington was shown at this meeting and to the public at the Public Hearing. (We received some comments supporting this idea after the Hearing as well.)

There was general support for this option. It was decided that the MOA will not specify exactly how the salvaged parts of the old bridge will be re-used. However, it will state that elements of the old bridge will be salvaged and incorporated into the design of the new bridge. The specifics of the design will be determined by the aesthetics committee and community during the design phase.

Incorporation of the Historic Plaque into a Historic Marker/Monument for New Bridge

There is an existing historic marker or plaque on the current bridge which includes the date the bridge was erected and names of Pinellas County Commissioners at that time.

It was generally agreed that this historic plaque should be incorporated into a new plaque or monument which provides some "bullet history" of the bridge. Becky suggested that in lieu of an actual 'monument", the new plaque or marker could be attached to the control house so that it could be seen by pedestrians crossing the bridge.

Educational Cell Phone Application or "App"

It was generally agreed that an educational kiosk was not desirable for this bridge because of its small size and highly developed area in the immediate vicinity. Other options for developing educational material about the history of the bridge including preparation of a DVD or video were also discussed.

Ken introduced two cell phone Apps that provide historical information about historic areas or structures. The apps are "NextExitHistory" and "Whatwashere". These are free Apps that use gps technology to identify the location of the historic site relative to the App user's location.

It was generally agreed that a cell phone "App" would be more likely to be used by a broader cross section of the public and that utilizing this new technology was a good idea. Ways to inform the public of the information about the bridge on the App were also discussed. There are opportunities at the Historical Museum, at the Sponge Docks and in other areas around Tarpon Springs to provide information about the App to visitors.

It was generally agreed that information would be prepared suitable for the existing Apps.

Other Discussion

Who will Sign the MOA

There was a discussion of which agencies would be signatories and which agencies would or could sign as consulting agencies.

It was generally agreed that FHWA, Pinellas County, and SHPO would be signing the MOA. Linda Anderson was asked to find out if FDOT would also be signing the MOA for this LAP project.

Evelyn Smart stated that the USCG did not need to sign the MOA since they are not the lead agency.

It was generally agreed that the City of Tarpon Springs did not need to sign the MOA, but could be a consulting party if desired.

Yacht Club Concerns

Maryann reiterated concerns that the Yacht Club members have previously expressed about potential impacts to their docks and sidewalks during and after construction. The County assured her that personal coordination with the Yacht Club would occur in Design and Construction phases. Ann stated that a commitment will be included in the Preliminary Engineering Report (PER) which required ongoing coordination with the Yacht Club Commodore and members.

Beckett Bridge PD&E Study
FPN: 424 385-1-28-01, County PID 2161
June 11, 2013 Meeting Agenda
Issues Related to Possible Rehabilitation with Widening Alternative

Date: June 11, 2013
Time: 11:00 am
Location: Florida Department of Transportation, Room 348, the Burns Building, 605 Suwannee Street, Tallahassee Florida 32399

A. Introductions

B. Power Point Presentation

1. Brief Project Overview/Status

2. Rehabilitation – No Widening (Major Repair)

3. Major Repair - Examples

3. Rehabilitation with Widening
   - Objective
   - Minimum Recommended Typical Section
   - Bascule Span Engineering
   - Costs
   - Advantages and Disadvantages

4. New Movable Bridge
   - Aesthetic Alternatives
   - Minimization/Mitigation Options

C. Discussion

Beckett Bridge PD& E Study

Presentation to:

SHPO, FHWA and FDOT

Pinellas County

ECDriver & Associates, Inc.

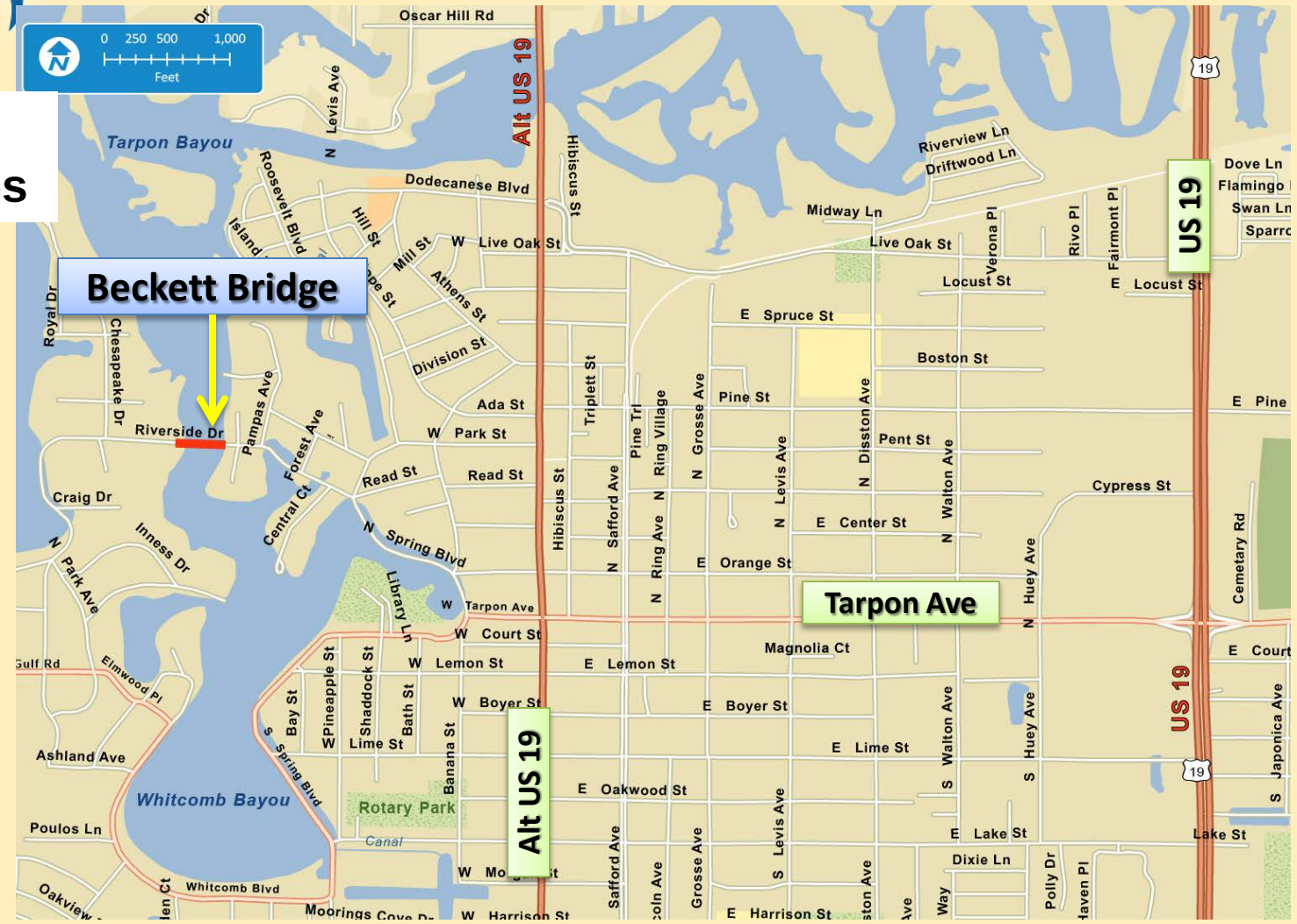
URS

JANUS RESEARCH

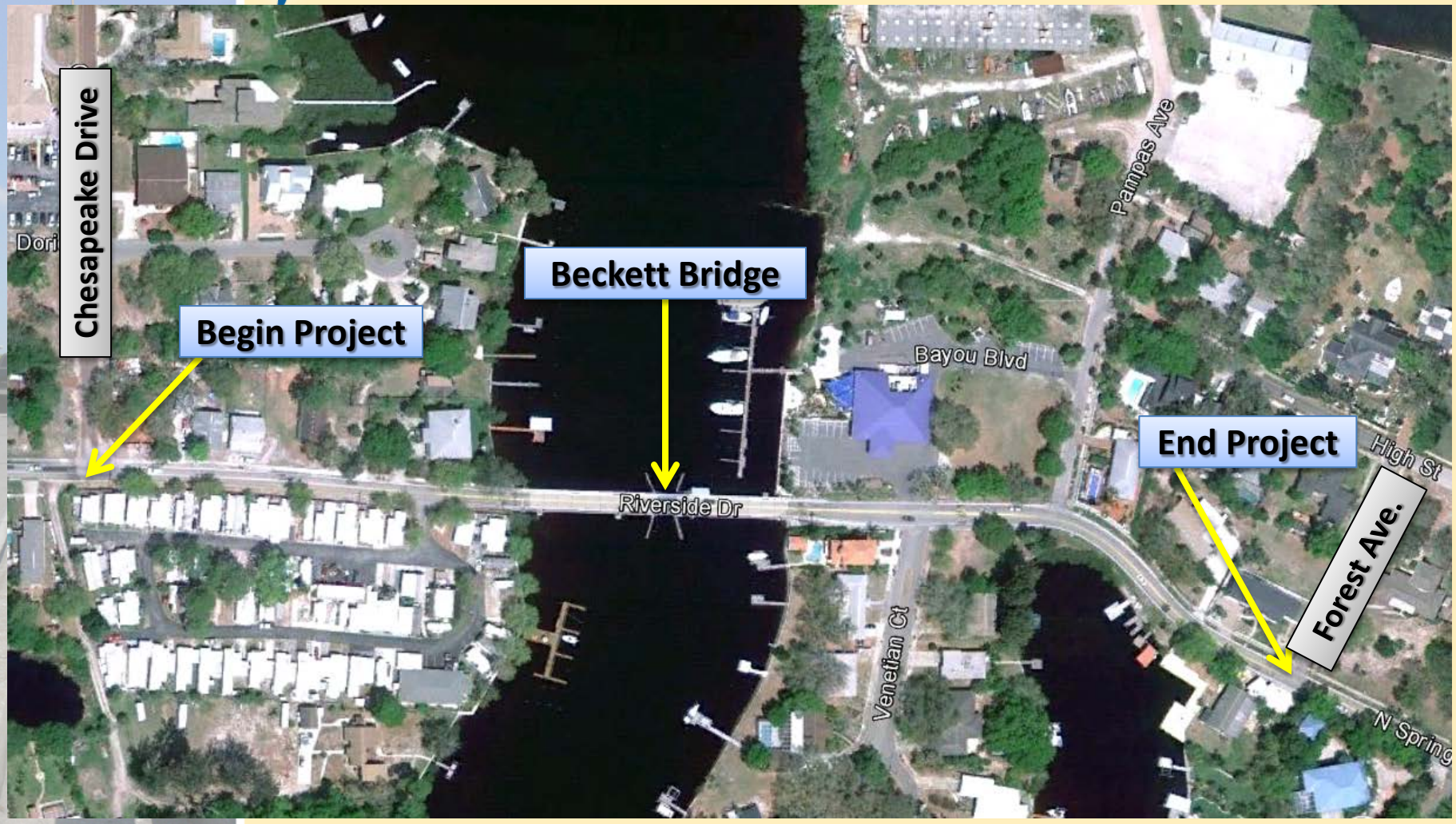
June 11, 2013

Project Location

2012 AADT
7,700 vehicles



Project Limits



Beckett Bridge

- Constructed 1924
  - Original timber construction
- Significantly Rehabilitated 1956
  - Original steel bascule span and machinery retained
- Major Repairs in 1979, 1998 and 2011
  - Machinery replaced “in-kind”
- Sufficiency Rating 44.7

Beckett Bridge

- **Determined Eligible for listing in the National Register of Historic Places**
  - One of a few remaining pre-1965, Single-Leaf Rolling-Lift Bascule Highway Bridges in Florida
  - Eligible in Areas of Community Planning and Development, Transportation and Engineering
  - Contributed to Westward Expansion of the City of Tarpon Springs

Existing Bridge

- Vertical Clearance – 6 ft
- Horizontal Clearance – 25 ft
- Opens with 2-hr Notice

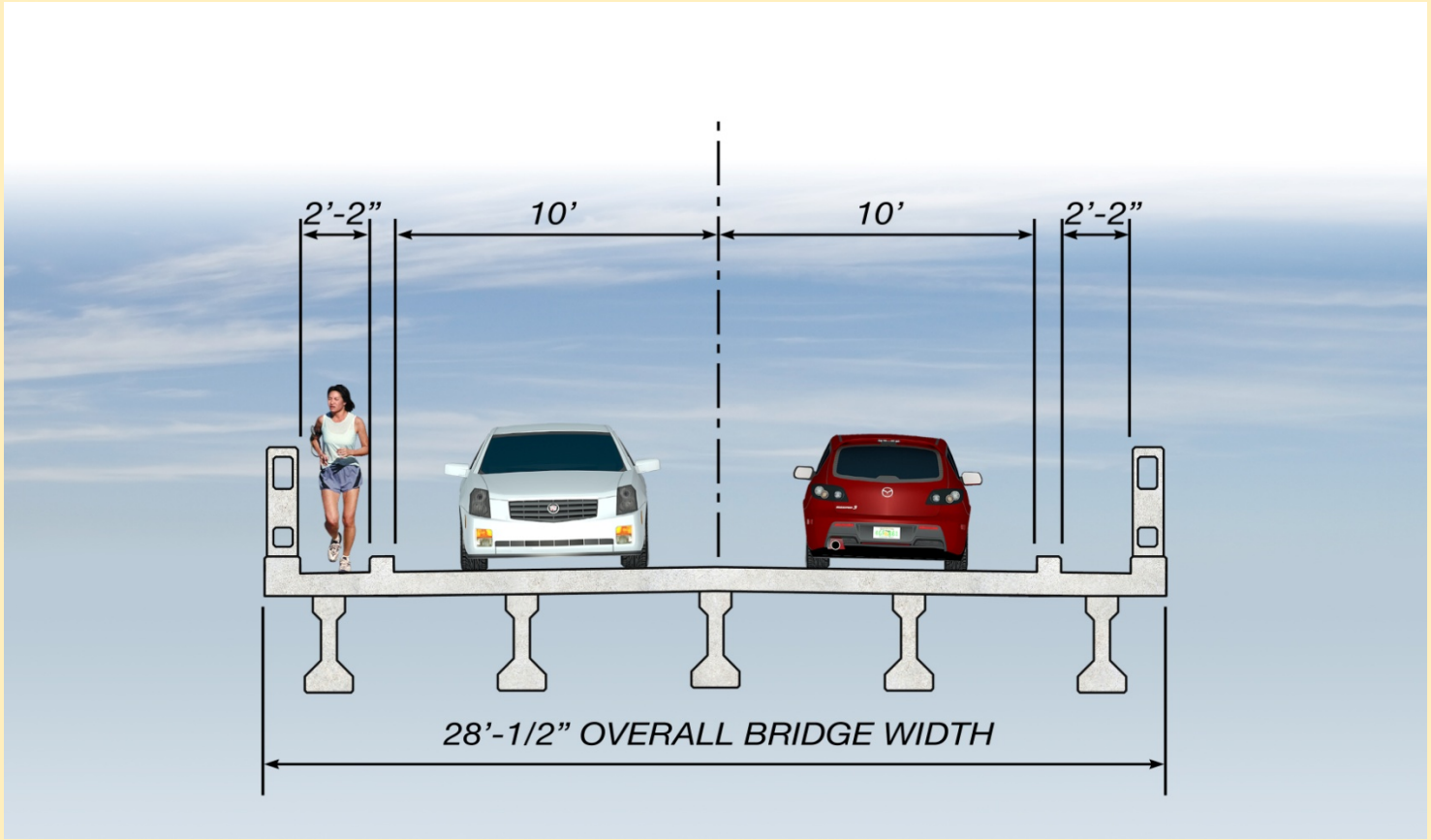
Total Bridge Openings

2009 - 10

2010 - 20

2011 - 18

Existing Typical Section



No Shoulders **Narrow Sidewalks**

Project Status

Study Began January 2012

Alternatives Considered

- No-Build
- No-Build with Permanent Removal of Existing Bridge
- Rehabilitation (No Widening)
- Replacement
  - Fixed Bridge – 28 feet Vertical Clearance
  - Movable Bridge - 7.8 feet Vertical Clearance

Project Status

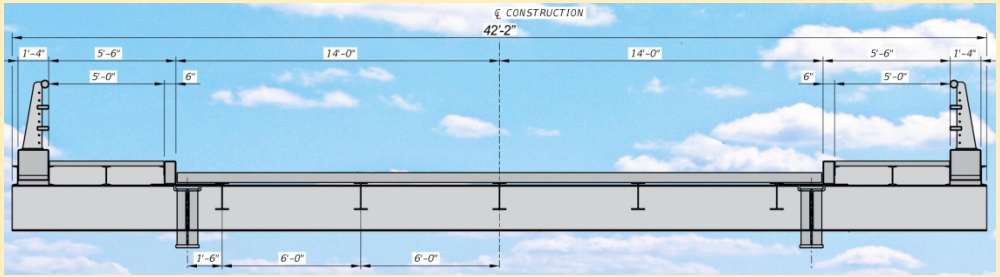
- **Alternatives Public Meeting - January 2013**
  - Public supported new movable bridge and rehabilitation
  - Public expressed need for improved sidewalks

CRC Meetings – Oct 2012, March 2013

- SHPO prefers **Rehabilitation with Widening** to provide adequate sidewalks
- This alternative not previously evaluated

Project Status

- Evaluation of Rehabilitation with Widening
  - Presenting today



- Next Steps
  - Continued Agency Coordination
  - Select Preferred Alternative
  - Complete Section 106 Process as Appropriate
  - Public Hearing

Project Need

Condition Assessment

- Health & Sufficiency
  - Deterioration
  - Wear
  - Corrosion
  - Damage
- Shortcomings of original design and/or construction
- Unforeseen conditions

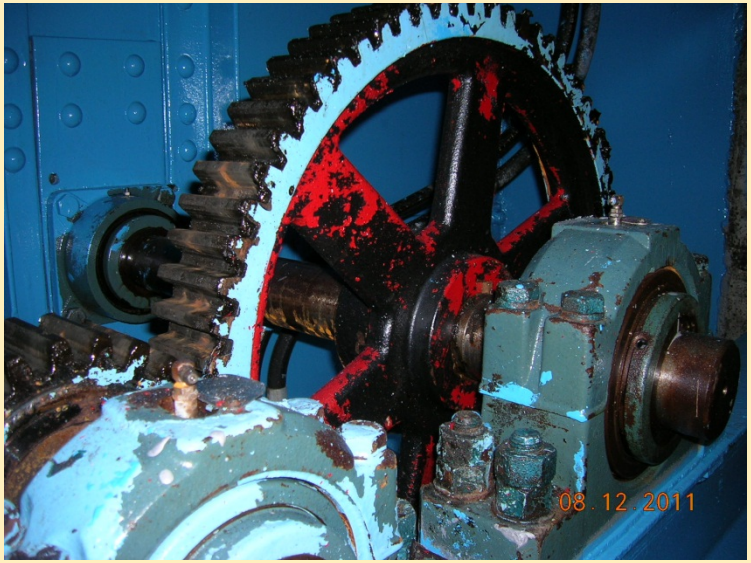
Project Need

Structural Condition

- Cracked and spalled concrete throughout
- Corrosion of reinforcing steel throughout
- Corroded structural steel
- Distorted steel flanges at tread plates
- Deteriorated timber piles & wales of fender system

Project Need

- Mechanical & Electrical Issues
  - Existing systems are old, worn and no longer reliable



Project Need

- **Functionally Obsolete**
  - Narrow Lanes
    - No Shoulders
    - No bicycle lanes
  - Narrow Sidewalks
    - Do Not Meet ADA Requirements
- **Structural Deficiencies**
  - Load Posted
  - Not designed for current heavier vehicles

Project Need

- Unforeseen Conditions
  - Foundations susceptible to settlement
  - Scour susceptible

Existing Crutch Bents

Rehabilitation – No Widening

- Extensive Repairs
- No Widening
  - No shoulders
  - Narrow sidewalks would remain
- No Change in Navigational Clearances

- Extend Service Life 25-30 years

Rehabilitation Approach

"Major Repair" Rehabilitation Alternative

Objectives

- Repair or replace defective elements "in-kind" or "similar"
- Strengthen to HS-20 loading
- Do not widen
- Retain as much of the original bridge as possible
- Improve safety, durability and reliability
- Eliminate, reduce or mitigate risks associated with foundation (settlement) issues

Rehabilitation – No Widening

- Repair deteriorated concrete of pile bent caps, bascule pier and rest pier
- Provide zinc spray metalizing for cathodic protection

Rehabilitation – No Widening

- Install new pile jackets with cathodic protection on all existing concrete piles and steel crutch bents

Rehabilitation- No Widening

Pile Jackets

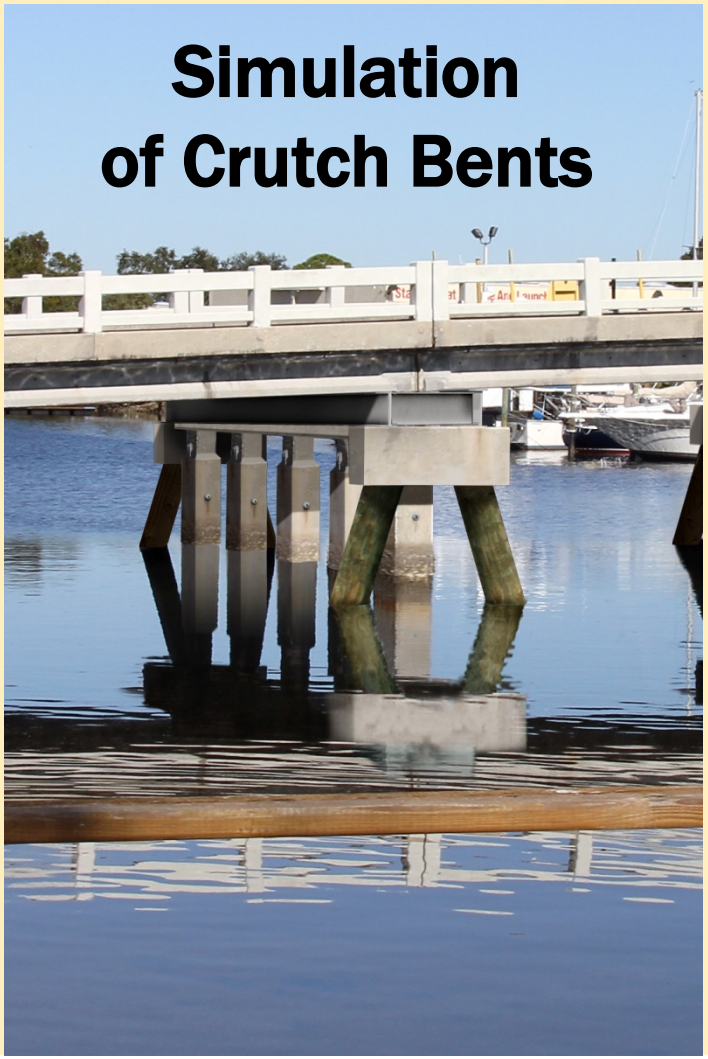
Rehabilitation – No Widening

- Install Crutch Bents at bents 2,4,5, 8, 10

Rehabilitation – No Widening

Existing Bridge

Simulation of Crutch Bents



Rehabilitation - Existing

Rehabilitation – No Widening Simulation

Rehabilitation – No Widening

- Replace substandard concrete bridge railings with new traffic rails meeting crash testing requirements

Rehabilitation – No Widening

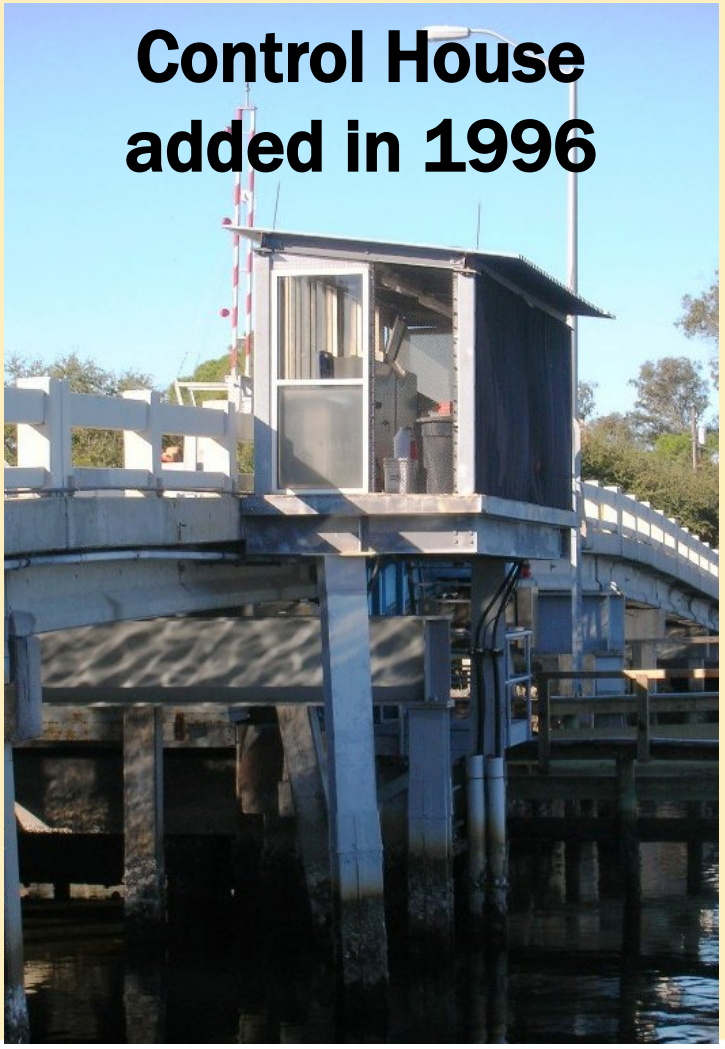
- Replace bascule leaf
  - Including counterweight, open steel and concrete filled grid deck

Rehabilitation - No Widening

- Repair deteriorated concrete deck underside, beams and diaphragms
  - Provide zinc spray metalizing – cathodic protection

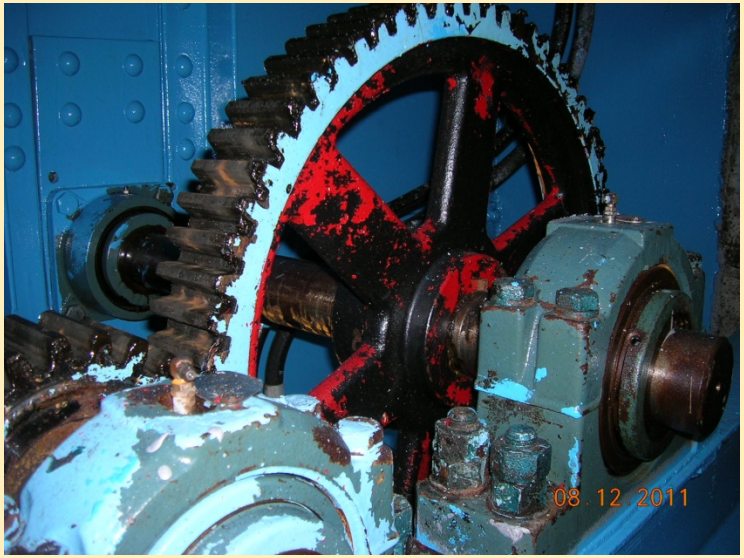
Rehabilitation – No Widening

- Rehabilitate Control House
  - Roof, window, door
- or Replace Control House



Rehabilitation – No Widening

- Replace Bascule Machinery
  - Bascule span main drive machinery
  - Span locks
  - Live load shoes



Rehabilitation – No Widening

- Replace Bascule Span Electrical System

Rehabilitation – No Widening

- Replace Bascule Span Barrier and Traffic Gates

Rehabilitation – No Widening

- Replace Fender System

Rehabilitation Example
Platt Street Bridge Major Repairs

Bridge Condition

- 8 foot wide sidewalks on both sides
- Stable foundations
- Structurally adequate and competent main members
- Deteriorated concrete and steel in the secondary members and deck
- Substandard bridge rails
- Worn, deteriorated and obsolete mechanical and electrical systems

Rehabilitation Example
Platt Street Bridge Major Repairs

Scope of Work

- Restore deteriorated concrete and install cathodic protection
- Replace substandard bridge rails
- Restore control houses
- Repair/replace deteriorated structural steel (secondary members)
- Replace steel grid deck
- Resurface concrete deck
- Install replica street lighting
- Restore overlook areas (remove planters)

Pinellas County

Rehabilitation Example
Platt Street Bridge Major Repairs

Pre-Restoration

Post-Restoration

Rehabilitation Example
Platt Street Bridge Major Repairs

Restored Bridge

Rehabilitation Example
Platt Street Bridge Major Repairs

Existing Bridge Rails

Rehabilitation Example
Platt Street Bridge Major Repairs

Replaced / Restored Bridge Rails

Rehabilitation Example
Platt Street Bridge Major Repairs

Planters in Overlooks

Existing Bridge

Restored Bridge

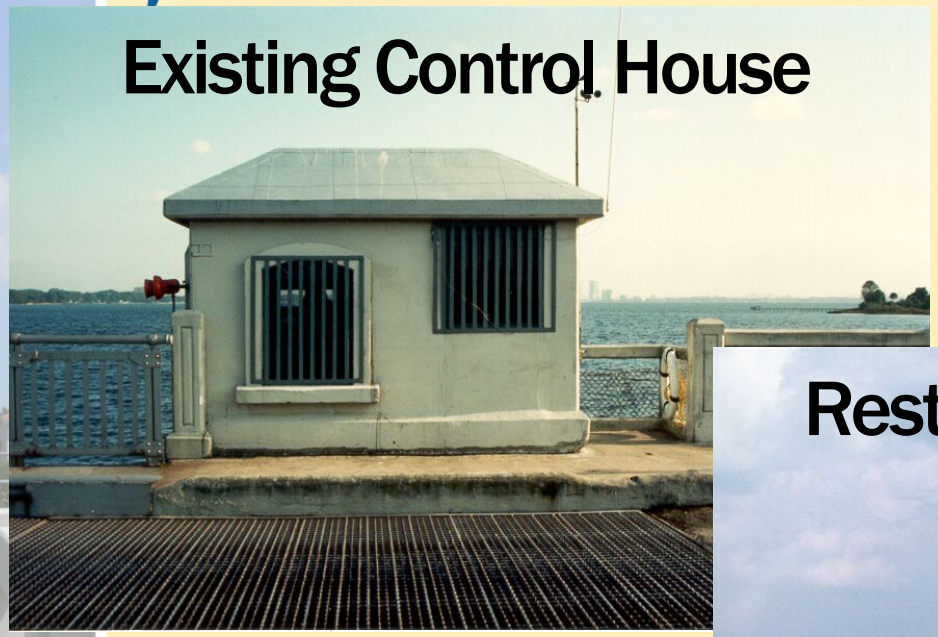
Rehabilitation Example
Ortega River Bridge Major Repairs

Scope of Work

- **Replace bascule span - similar to "in-kind"**
  - Structural Steel
  - Counterweight
  - Machinery & controls
  - Bridge rails
- **Restore control houses**

Rehabilitation Example
Ortega River Bridge Major Repairs

Existing Control House

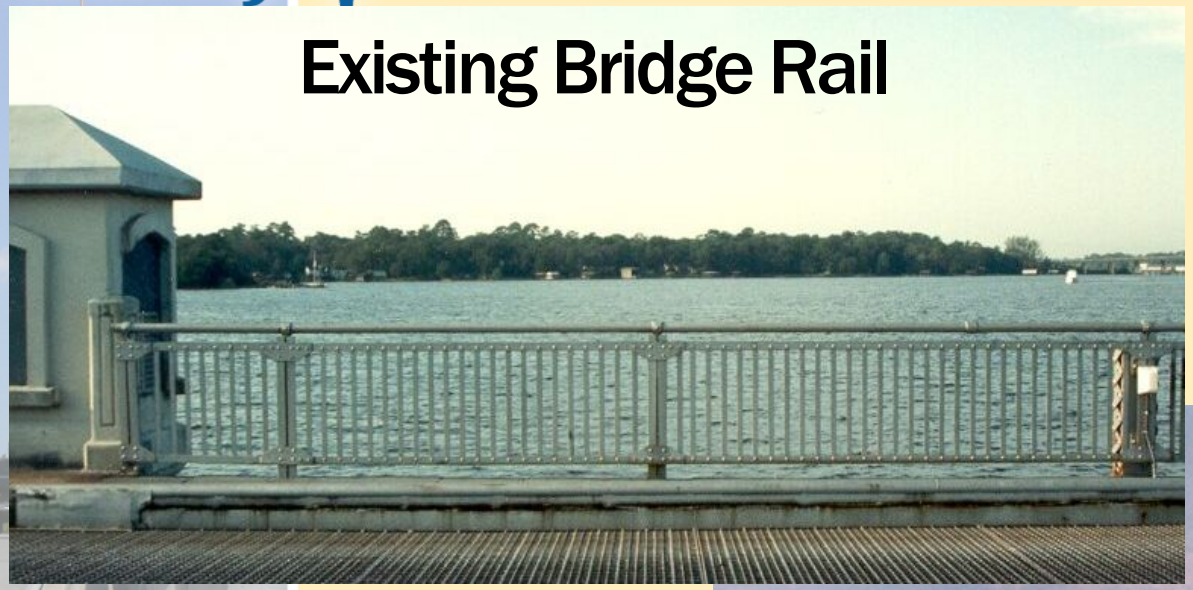


Restored Control House

Rehabilitation Example
Ortega River Bridge Major Repairs

Pinellas County

Existing Bridge Rail



Replacement Bridge Rail

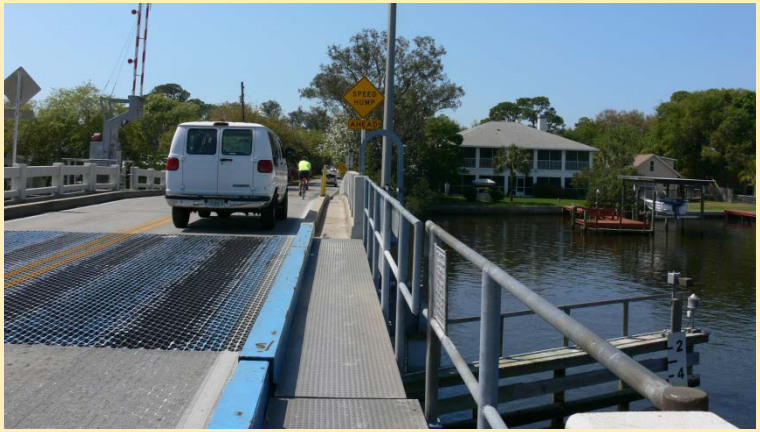
Rehabilitation Example
Ortega River Bridge Major Repairs

Replacement Bascule Span
(offsite assembly)

Rehabilitation with Widening

Objectives

- Widen sidewalks to meet minimum current standards (5.5’)
- Widen roadway to meet minimum current standards (11’ lanes & 3’ shoulders)
- Other objectives are the same as for the rehabilitation without widening



Rehabilitation with Widening

Objectives

- Utilize wider crutch bents to support widening of the approach spans (crutch bents were already proposed for rehabilitation without widening)

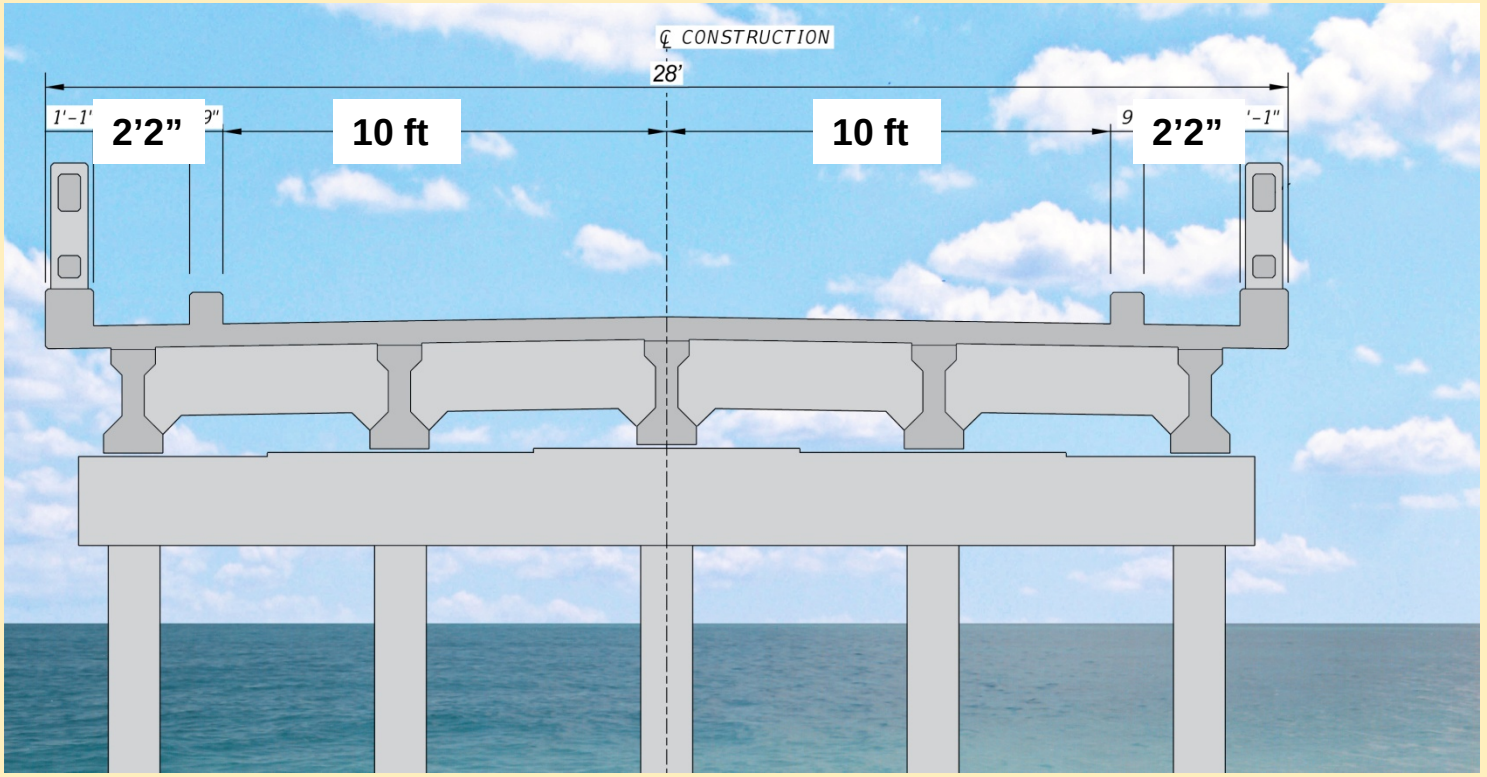
- Utilize wider replacement bascule span, but retain main girder spacing so that existing bascule pier can remain with strengthening (the one element of the 1929 bridge still to remain)

Existing Approach Typical Section

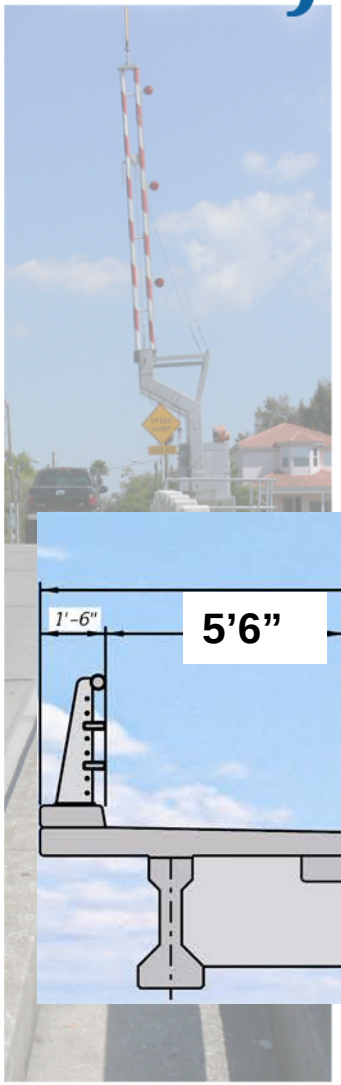
28 feet Total Width

10 ft lanes, no shoulders

2’2” sidewalks

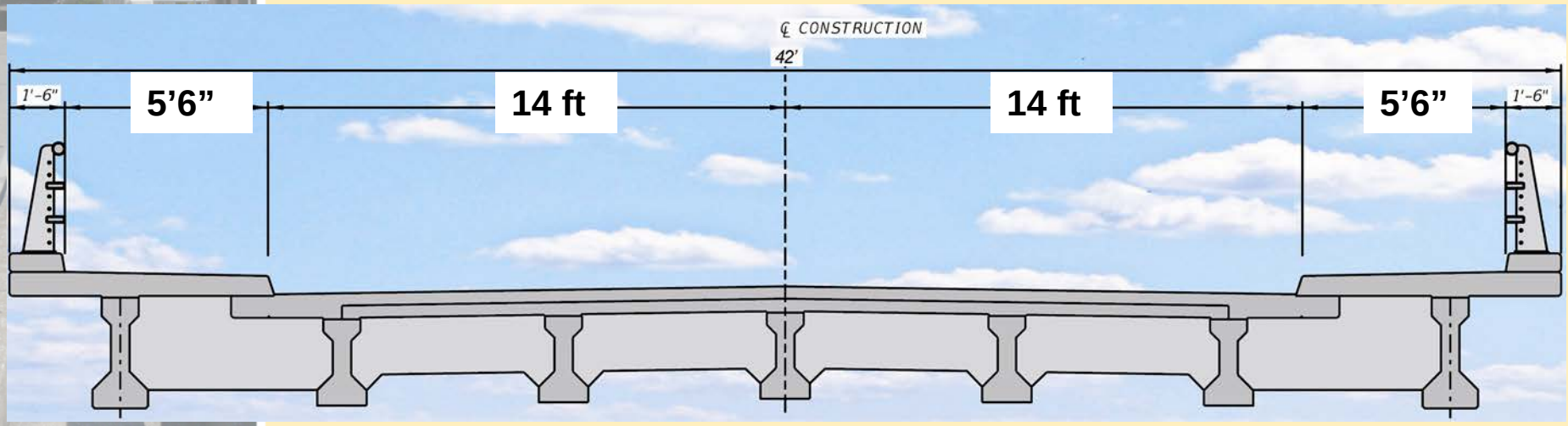


Acceptable Minimum Typical Section



Total Width – 42 feet

- 5’6” sidewalks – both sides
- 11 ft lanes
- 3 ft shoulders

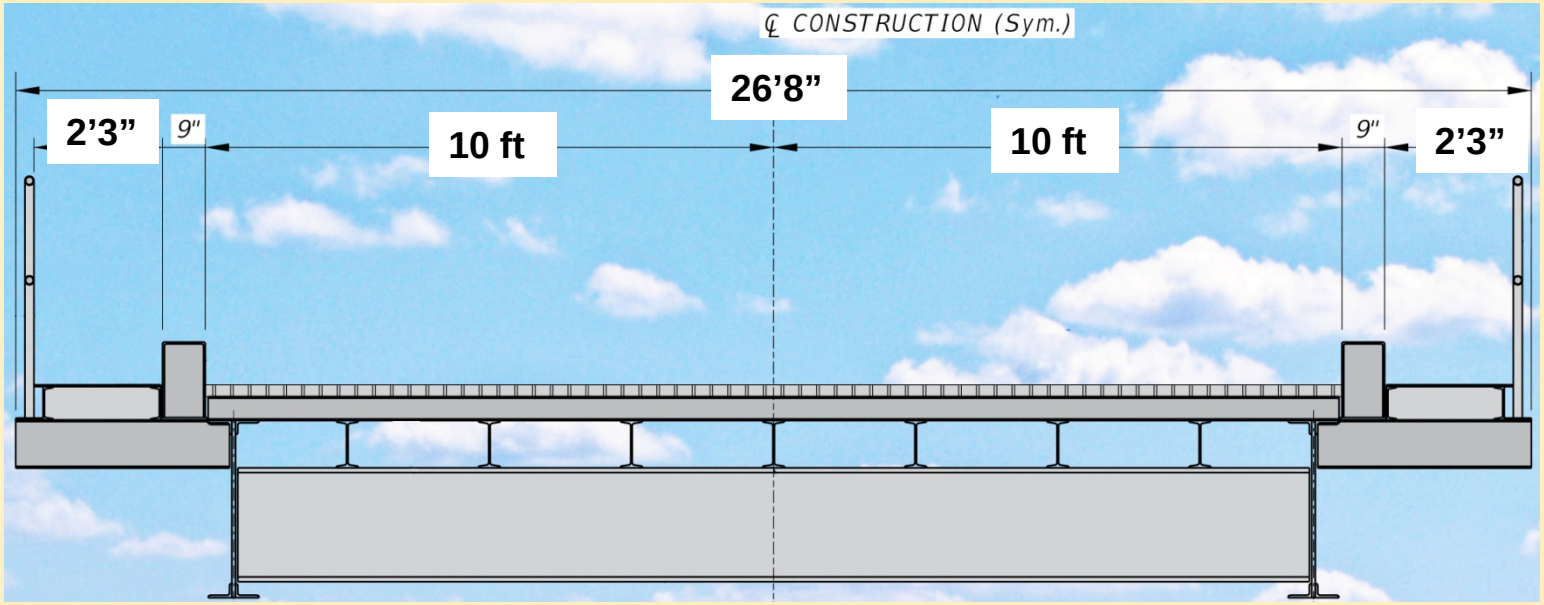


Existing Bascule Typical Section

26’- 8” Total Width

10 ft lanes, no shoulders

2’3” sidewalks



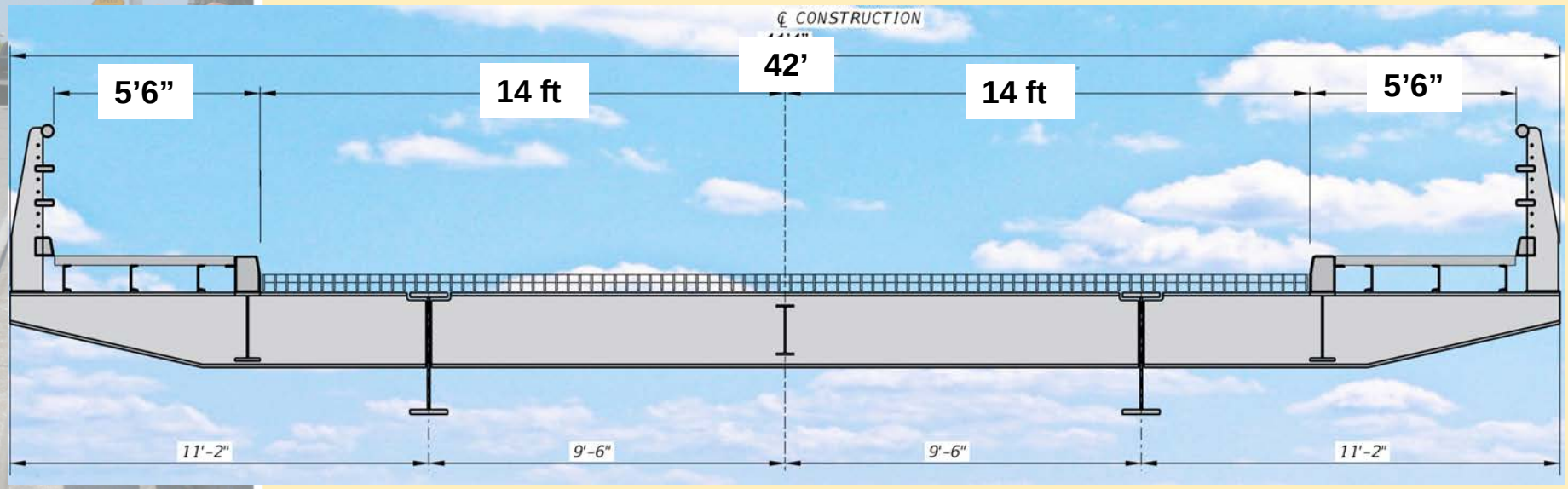
Proposed Bascule Typical Section Retaining Existing Piers

42’ Total Width

11 - foot lanes

3 – foot shoulders – both sides

5’- 6” sidewalks – both sides



Rehabilitation – With Widening

Bascule Span Engineering

- Current design loading (HL-93) is heavier than existing bridge design load (most likely HS-15)
- Current standards require designing sidewalks for occasional vehicle load (which was not the case for the existing bascule span)
- Bridge rails are currently designed for much higher impact loads and specific “crash tested” geometry
- Minimum width roadway results in higher live loads on the girders, floorbeams and cantilever brackets (at least a 32 percent increase in main girder loading)
- Current design loadings for bridge rails will result in larger loads on the cantilever brackets as will the wider sidewalk

All main members of the bascule span need to be stronger (larger, heavier steel sections) than the existing

Rehabilitation – With Widening

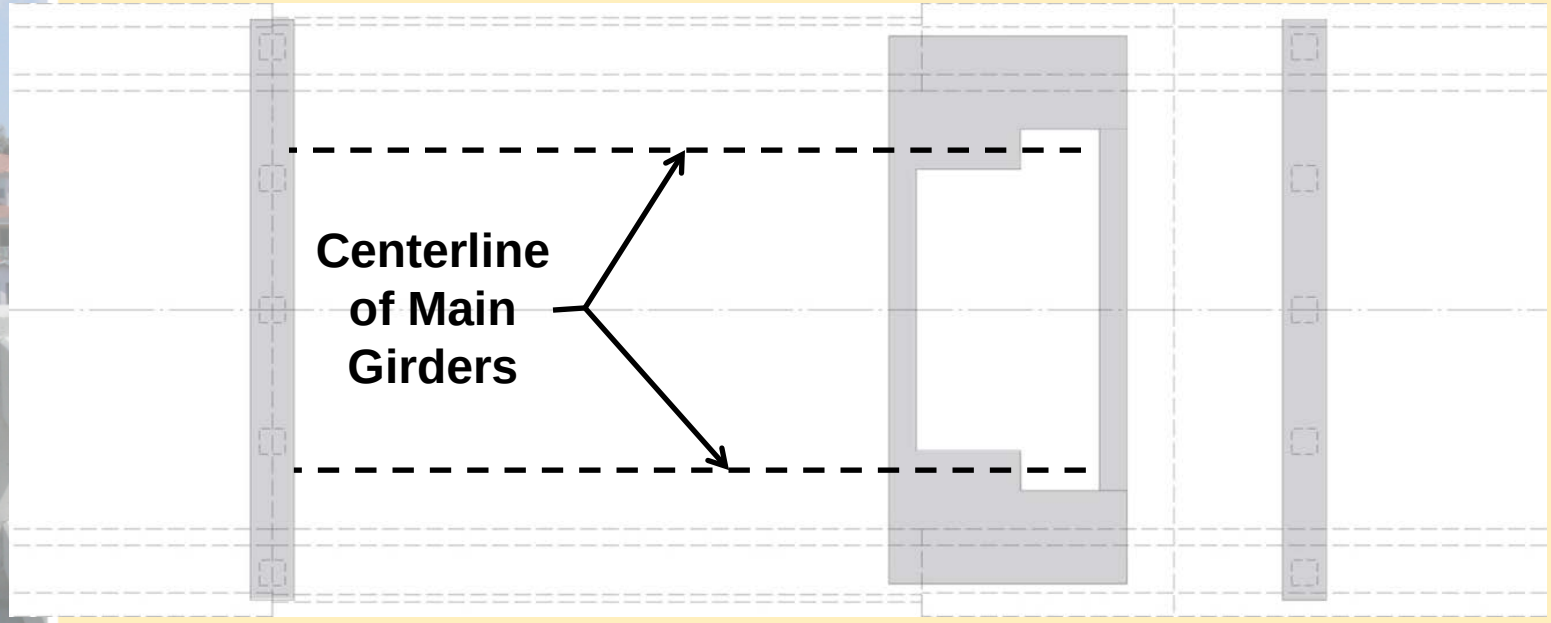
Bascule Span Engineering

- New bridge deck will be approximately 37% wider than the existing
- New bascule span will be approximately 62% heavier than the existing
- Counterweight volume is limited by geometry of the existing bascule pier

Counterweight volume is not sufficient to provide the mass required to balance the span (would require 390 pcf concrete (AASHTO limits counterweight concrete to 315 pcf)

Rehabilitation – With Widening

Plan View of Existing Bascule Pier



Exist.
Rest Pier

Exist.
Bascule Pier

Rehabilitation – With Widening

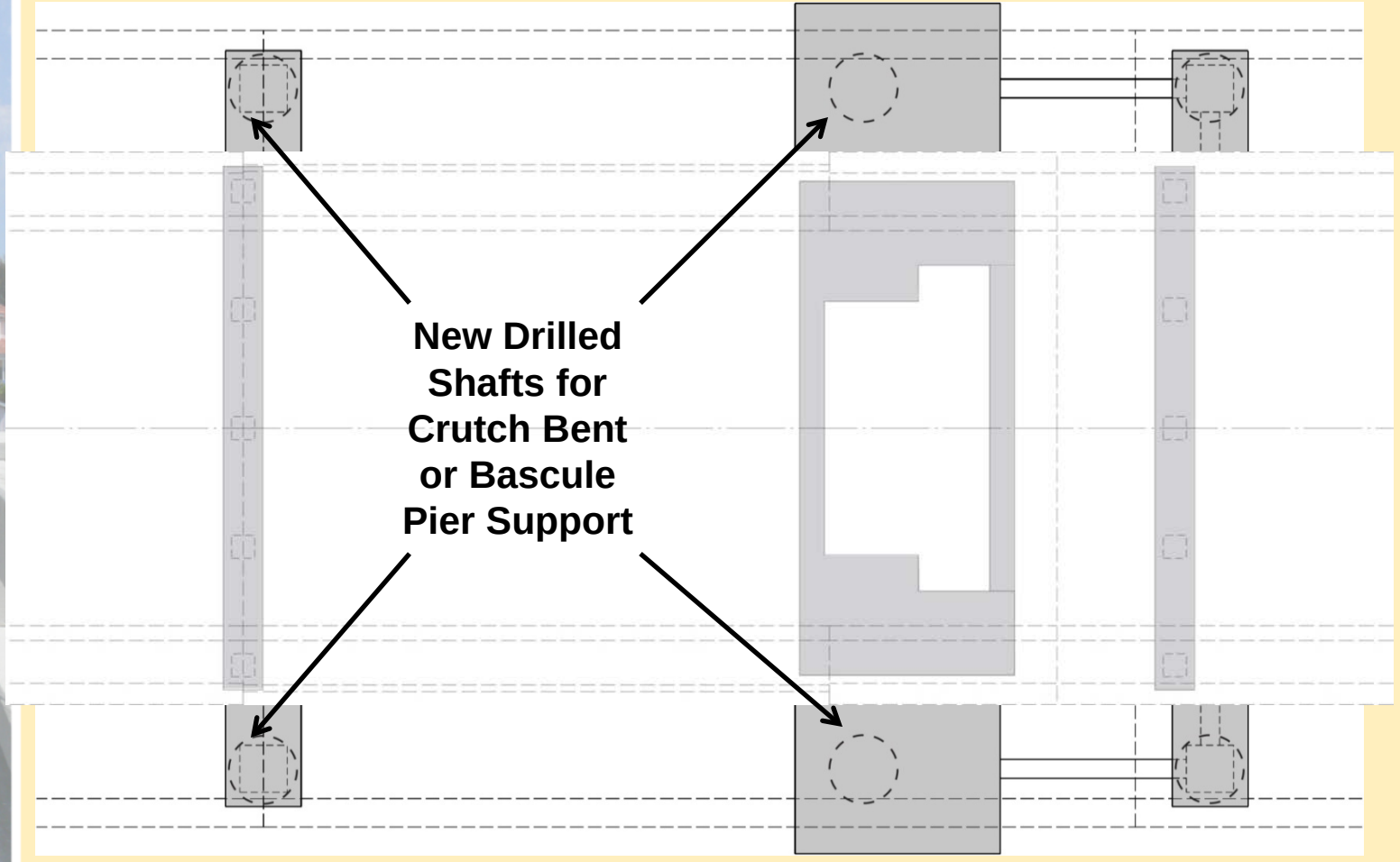
Bascule Span Engineering

- Existing bascule pier is supported on timber piles of unknown number, length and/or capacity
- Helper piles installed in 1996 are not fully effective in supporting the bascule piers – they were designed to stabilize the pier, not support dead load or live load
- New bascule span will be approximately 62% heavier than the existing

Existing piers do not have capacity for the added dead and live loads resulting from widening

Rehabilitation – With Widening

Plan View of Widened Bascule Pier



Rehabilitation – With Widening

Bascule Span Engineering

Conclusions

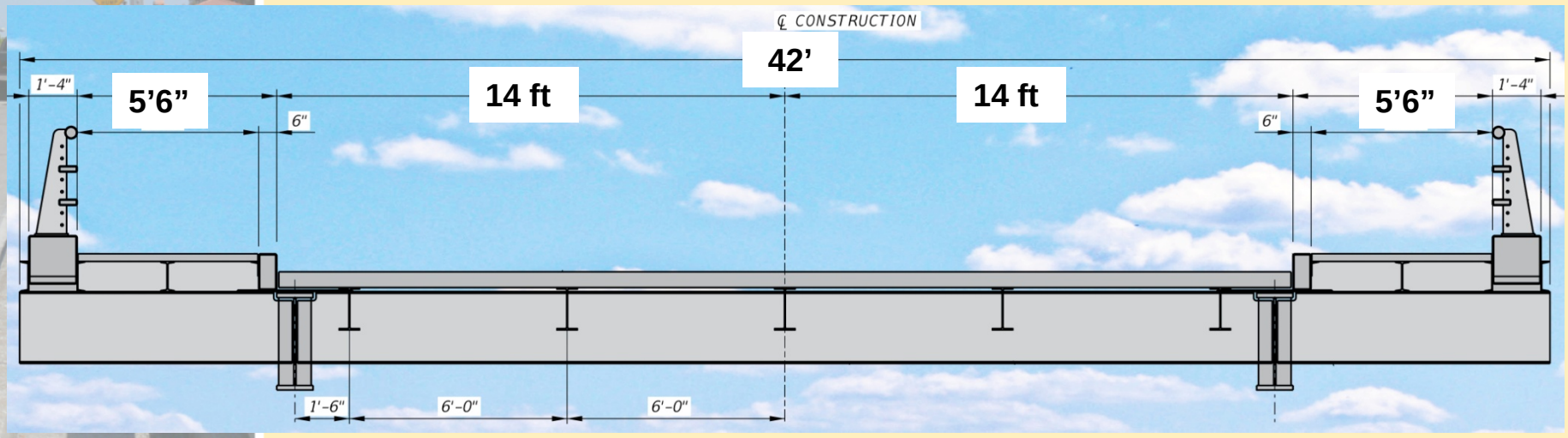
- To widen the bridge will require replacement of the bascule span with a new bascule span having a wider main girder spacing

- To accommodate the wider girder spacing, the existing bascule pier will need to be replaced

Proposed Bascule Typical Section Widened Piers

42’ Total Width

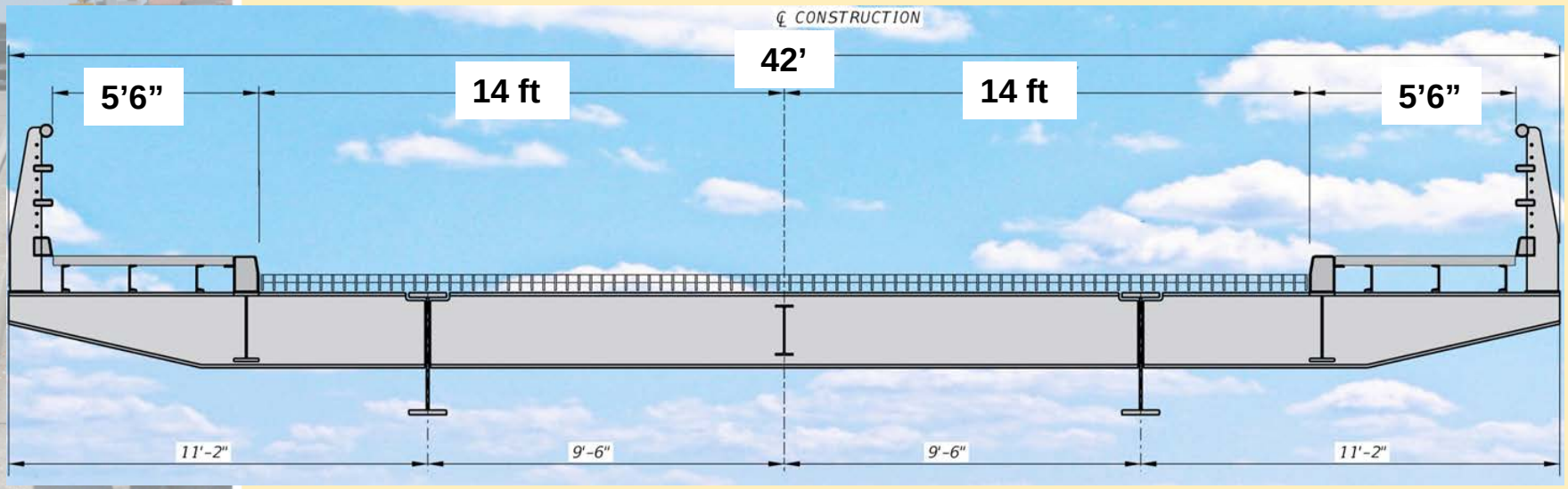
- 27 foot main girder spacing



Proposed Bascule Typical Section Existing Piers

42’ Total Width

- 19’ main girder spacing



Rehabilitation – With Widening

Costs

Rehabilitation (No Widening)

$9.5 M

Rehabilitation (with Widening)

$12.5 M

New Movable Bridge

$15.8 M

Rehabilitation – With Widening

Advantages

- Meets minimum standards for sidewalk and roadway width

Disadvantages

- Wider crutch bents
- New exterior prestressed beams
- New bascule pier
- No element of the original 1929 bridge will remain
- $3 million additional cost over “major repairs”
- 79% of the cost of replacement

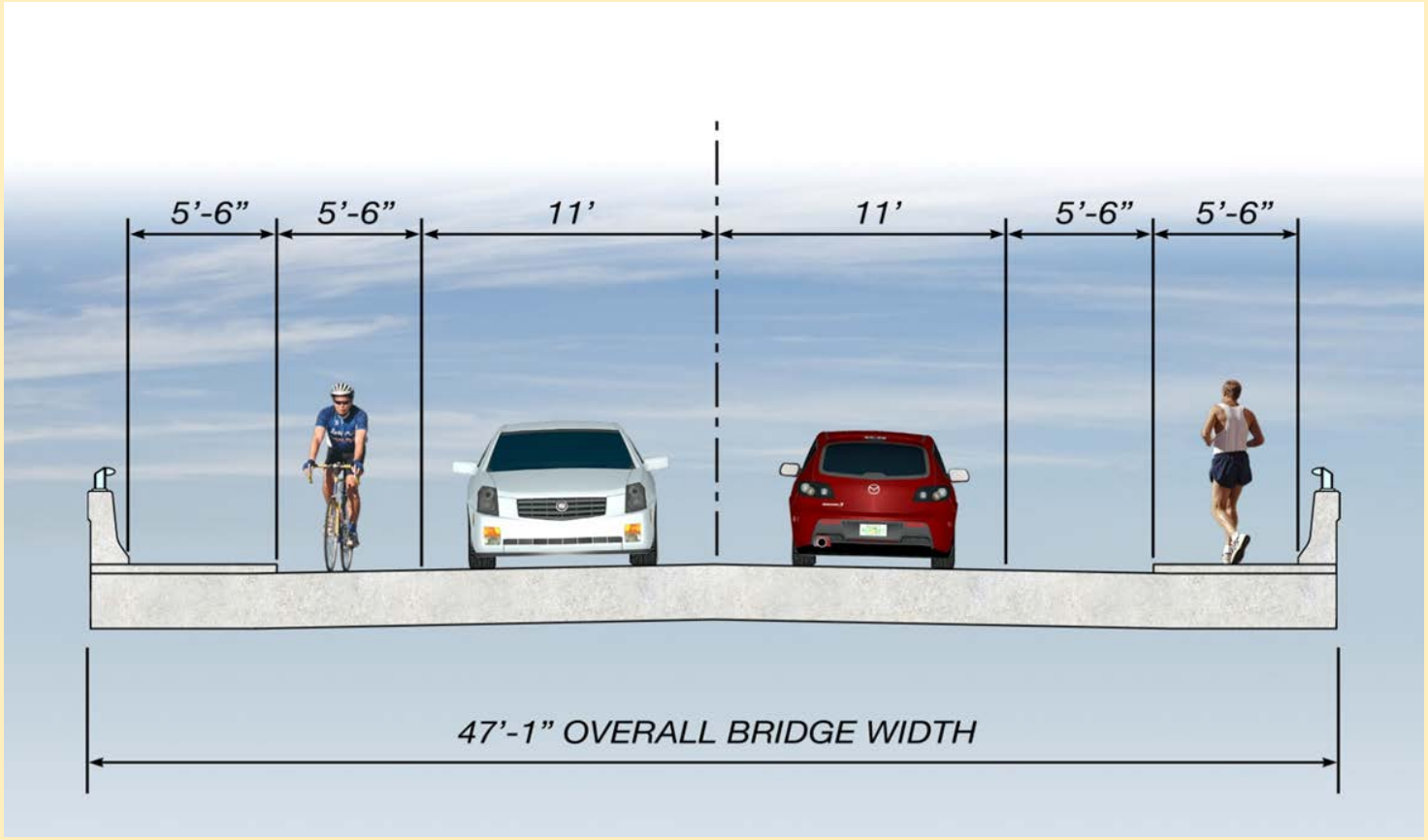
New Movable Bridge

Description

- No right-of-way impacts
- Vertical Clearance 7.8 feet
  - (existing 6 feet)
- Horizontal Clearance 25 feet
  - (same as existing)
- Total Width 47’ 1”
  - Approximately 19 feet wider than existing
  - 11 ft travel lanes
  - 5.5 ft shoulders and sidewalks – both sides

Movable Bridge Typical Section

Total Bridge Width – 47 ‘ 1”



New Movable Bridge

Period appropriate aesthetic styles common in Scherzer Rolling-Lift Bridges constructed between 1920 and 1945

- Industrial
- Moderne

View from Dock Northwest of Bridge

View from Dock Northwest of Bridge

New Movable Bridge

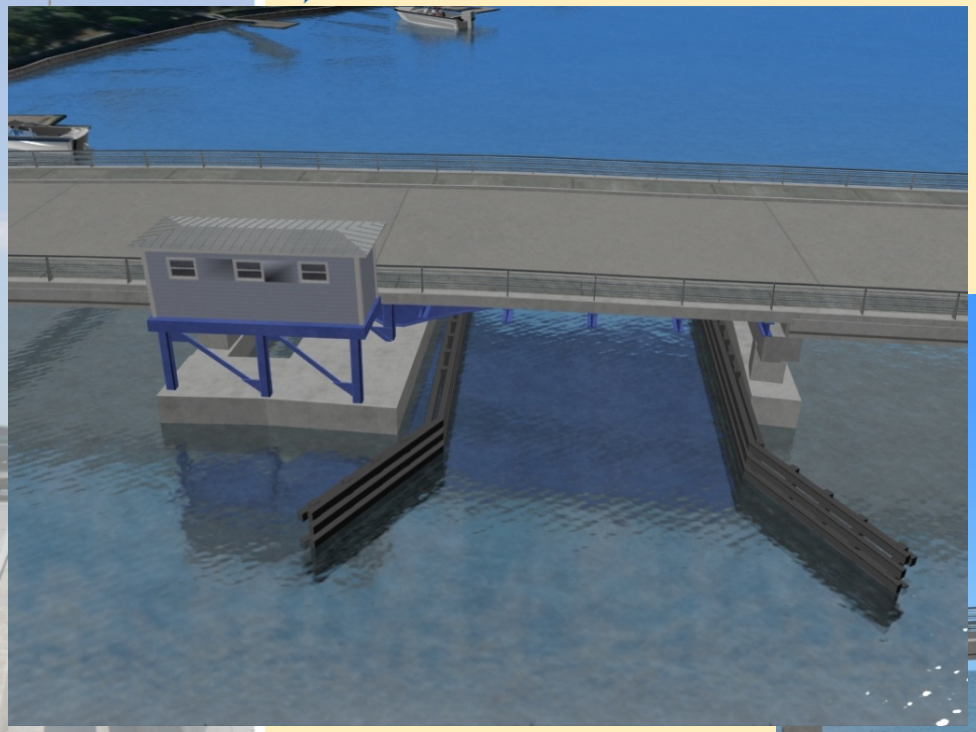
“Industrial” Style
Rolling-Lift Bascule Bridge

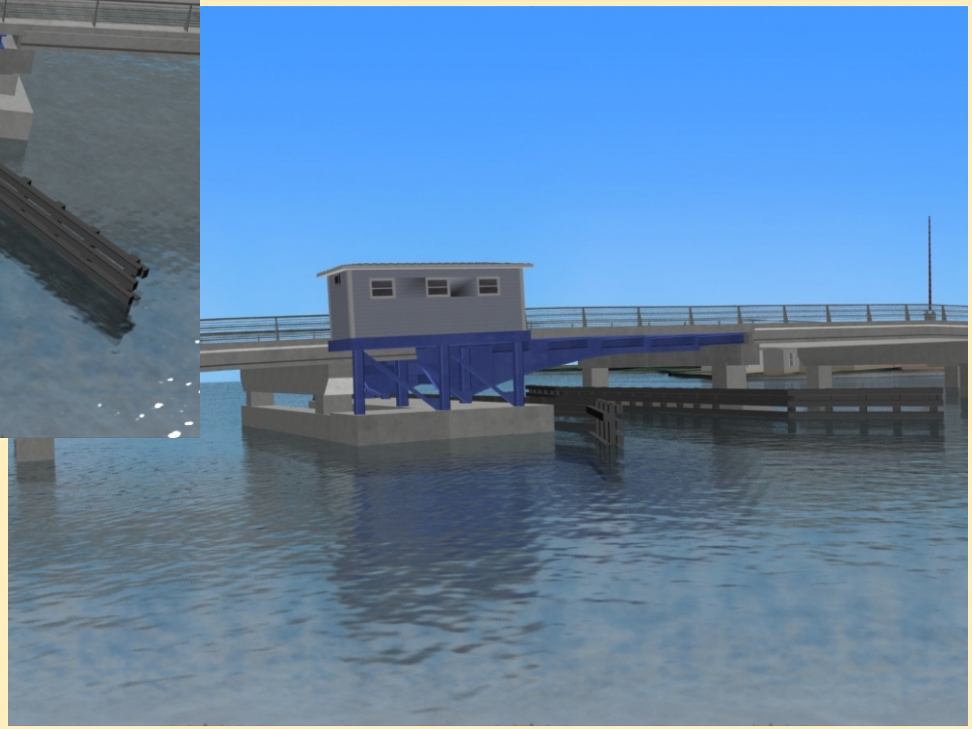
New Movable Bridge

"Industrial" Style Rolling-Lift Bascule Bridge

New Movable Bridge

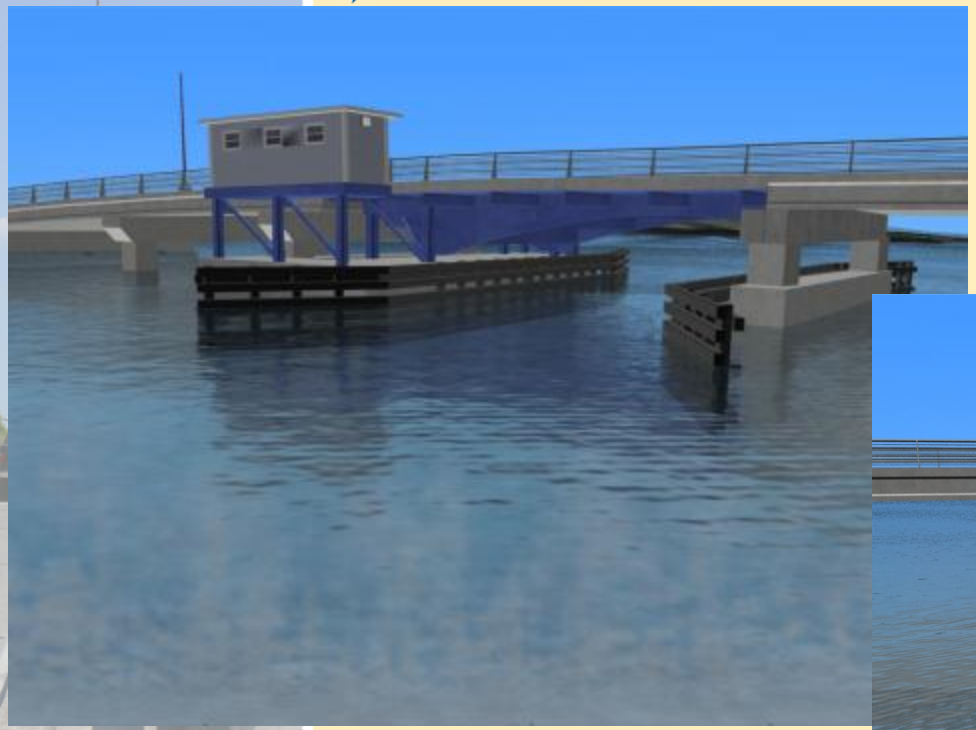
3D Model Views

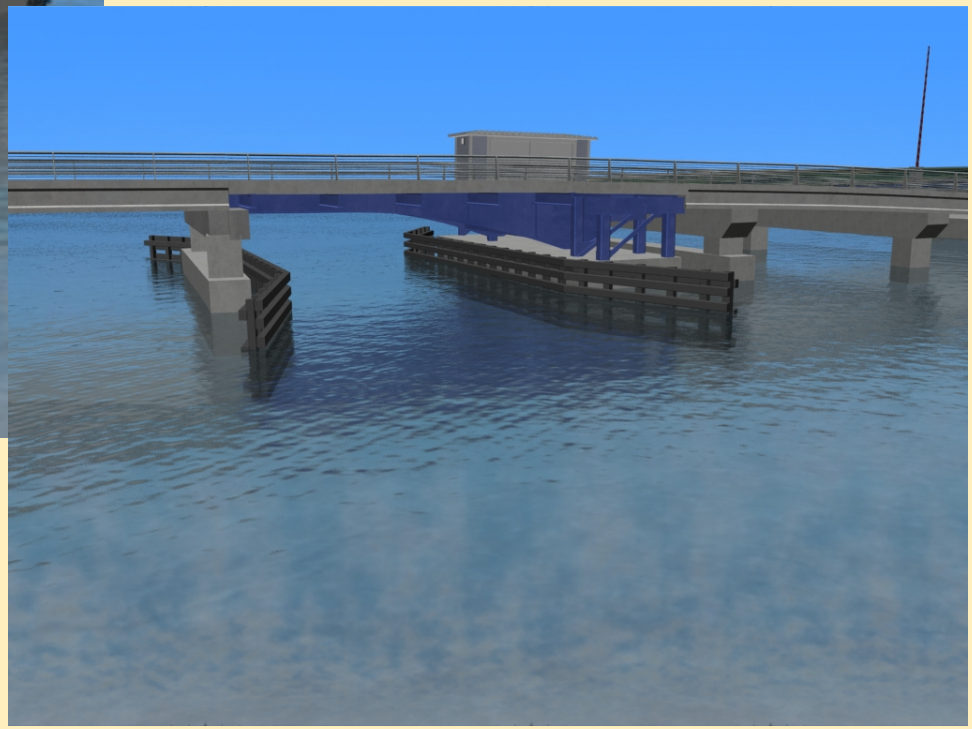




New Movable Bridge

3D Model Views





Aesthetic Alternatives

Other -Historic Rolling Lift Bridges

Black River, MI (1929)

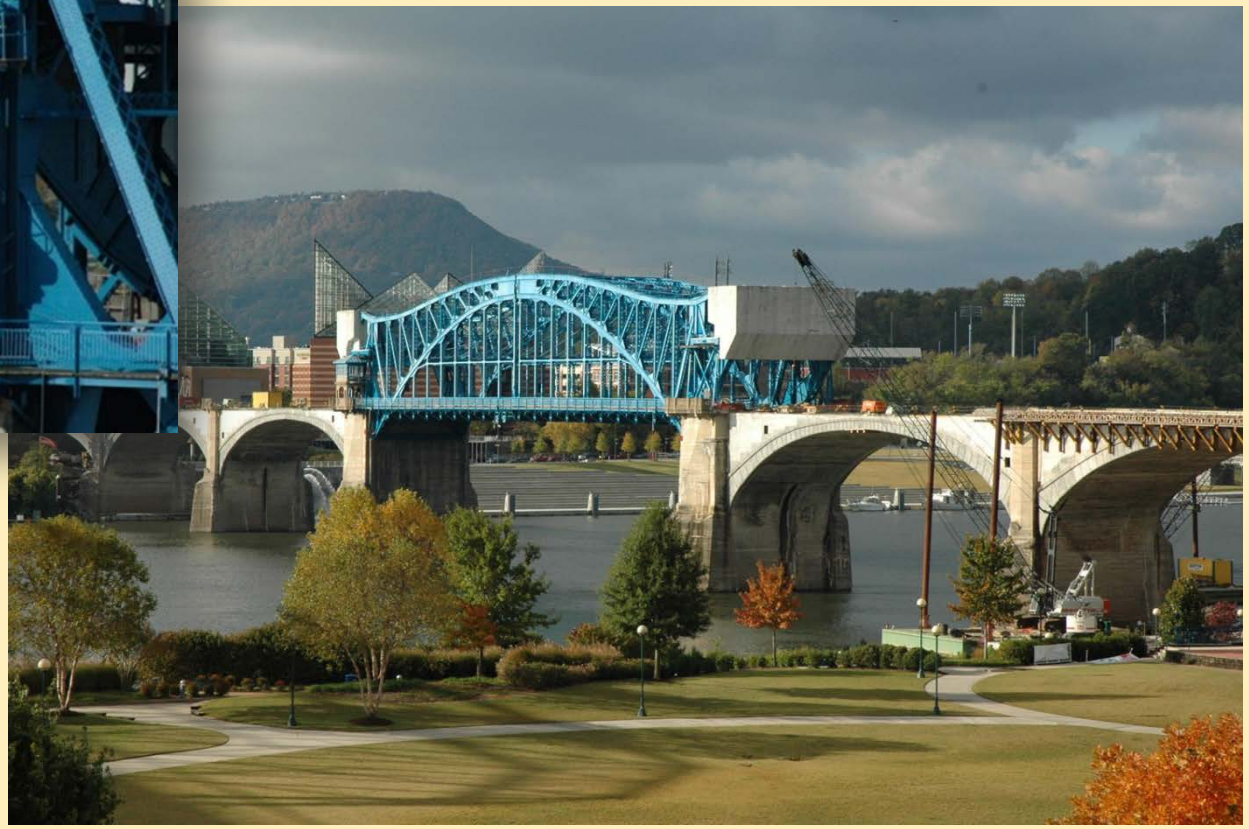
Jackson St., Joliet, MI (1933)

Aesthetic Alternatives

Other -Historic Rolling Lift Bridges

Aesthetic Alternatives

Other -Historic Rolling Lift Bridges



Market Street, Chattanooga, TN (1917)

Aesthetic Alternatives

Other -Historic Rolling Lift Bridges

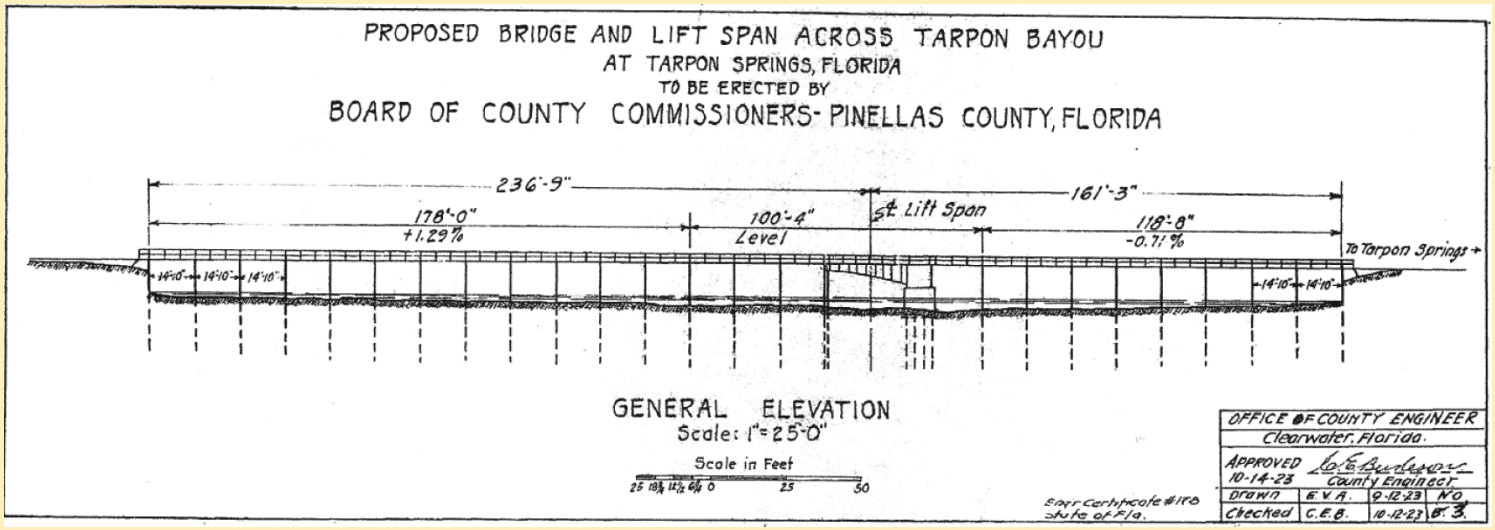
Ortega River Bridge,
Jacksonville, FL (1927)

Minimization/Mitigation Options

Possible Mitigation

Historic American Engineering Record (HAER) Documentation

- Large format photographs
- Written history/narrative
- Historic bridge plans copied on archival paper



Minimization/Mitigation Options

- Single Leaf Rolling Lift Bascule Design for Replacement Bridge
- Choose Bridge Rail to Preserve Viewshed from Bridge
- Educational Kiosk/Monument in Public Space
  - On or Near Bridge
  - In City Park
  - At Heritage Museum
- Incorporate Monument into Second Control House
- Incorporate Portion of Original Bridge into New Bridge

Minimization/Mitigation Options

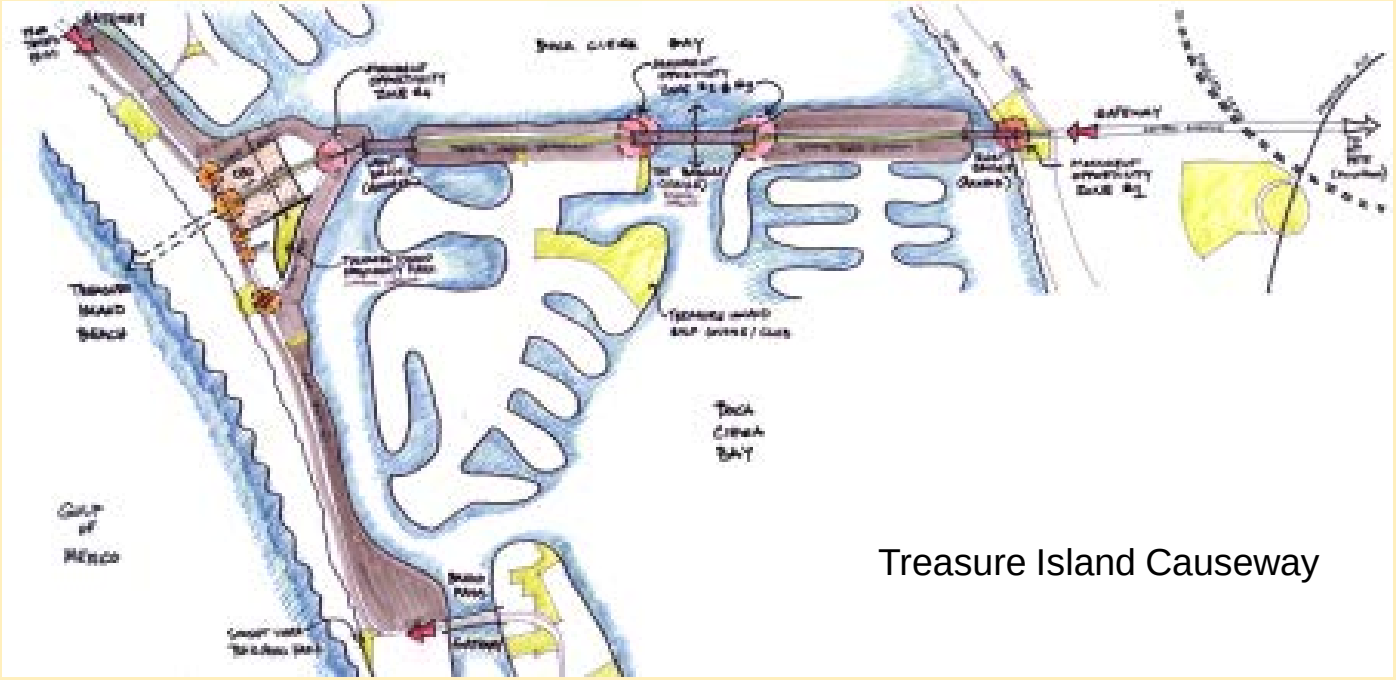
Possible Minimization/Mitigation

Some Rail Options

Minimization/Mitigation Options

Example – Treasure Island Bridge

Planning a monument or kiosk to be located in local park or recreation area, museum or public space



Treasure Island Causeway

Minimization/Mitigation Options

Example - Treasure Island Bridge

Incorporating Part of Existing Bridge into Monument or Educational Display in Park or Public Space

Minimization/Mitigation Options

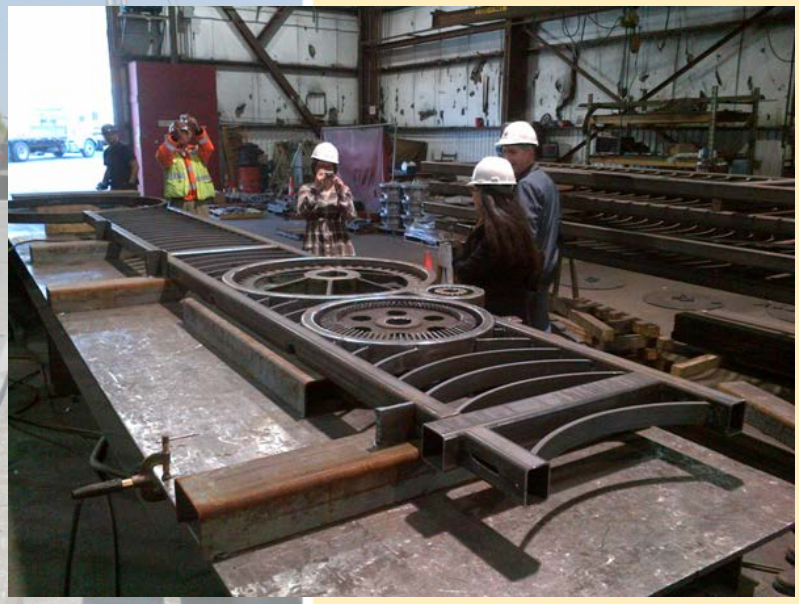
Example – Treasure Island

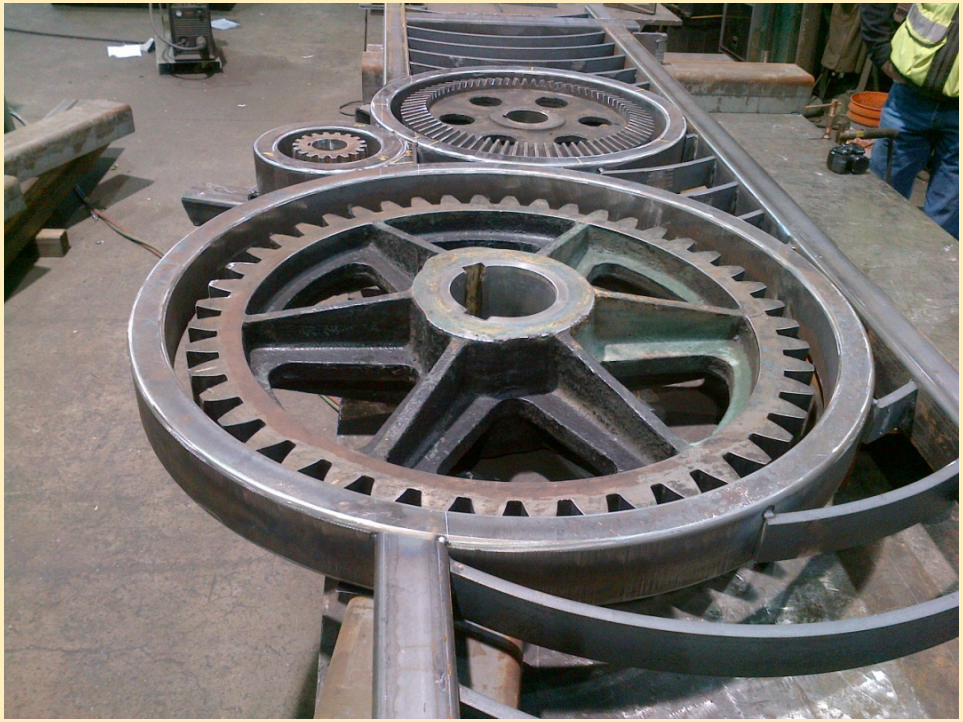
Monument Bridge in City Park – Treasure Island

Minimization/Mitigation Options

Example - South Park Bridge, Seattle, WA

Incorporating Part of Existing Bridge into New Bridge





Thank You!

Questions and Discussion

Meeting Notes

Date: June 11, 2013
Time: 11 am
Place: FDOT, Central Office, Tallahassee, Room 348 Burns Building
RE: Rehabilitation with Widening to Provide Wider Sidewalks
Discussion of Minimum Acceptable Typical Section and Engineering Issues
Beckett Bridge PD&E Study
FDOT PID: 424385-1-28-01

Recorded by: Ann Venables

Attendees: Jorge Quintas, Pinellas County
Tony Horrnik, Pinellas County
Tom Waits, FDOT (Structures)
Roy Jackson, FDOT (EMO)
Linda Anderson, FHWA
Alyssa McManus, SHPO
Dan McClarnon, SHPO
Ann Venables, URS
Jim Phillips, URS

Purpose

The purpose of this meeting was to present the completed engineering evaluation of the "Rehabilitation with Widening" Alternative for the Beckett Bridge PD&E Study. This alternative was developed to address a request by SHPO staff at the March 2013 CRC Meeting to evaluate a rehabilitation option that included wider sidewalks.

Jim Phillips and Ann Venables presented information about the project and evaluation employing a power point presentation which included the following topics:

- Brief Project Overview/Status (Ann Venables)
- Rehabilitation – No Widening (Jim Phillips)
- Major Repair – Examples
- Rehabilitation with Widening
  - Minimum Recommended Typical Section
  - Objective
  - Bascule Span Engineering
  - Costs
  - Advantages and Disadvantage
- New Movable Bridge
  - Aesthetic Alternatives
  - Minimization/Mitigation Options

Summary of Discussion

Ann Venables provided a brief overview of the project and the current status of the study.
Jim Phillips discussed the existing condition of the bridge and the repair history and engineering issues associated with the "Rehabilitation with Widening" alternative.

Jim Phillips provided a historical review of Beckett Bridge structural issues and repairs:

- "Unstable geotechnical conditions, including a possible sinkhole, have resulted in movement of the substructure. The foundations are susceptible to settlement.

- Past issues include misalignment of the bascule leaf which limits "unlimited" clearance in the open position.
- Issue related to distorted steel flanges at the tread plates cause the bascule leaf to shift abnormally (walk) each time it is raised or lowered.
- Sufficiency rating is currently 44.7 (out of 100)
- The bridge is currently load posted.
- Mechanical and electrical systems need replacement

Jim Phillips presented two examples of bascule bridge rehabilitation that were successful – restoration of the Platt Street Bridge in Tampa and the Ortega River Bridge. In both cases, the improvements did not include bridge widening and could more accurately be defined as "Major Repair".

Both bridges were good candidates for Major Repair. The existing Platt Street Bridge included two, 8-foot wide sidewalks. In addition, the substructure and superstructure elements were in relatively good condition. Restoration included adding lighting that resembled the original bridge and removing planters from original overlooks.

Like the Beckett Bridge, the Ortega Bridge's condition required replacement of the movable span. Unlike the Beckett Bridge, the Ortega Bridge's foundations were in good condition and there were no signs of previous or ongoing settlement. The Ortega Bridge work involved off-site prefabrication of the replacement movable span as is proposed for the Beckett Bridge rehabilitation.

Jim Phillips discussed the recommended typical section for an alternative for the Beckett Bridge that consisted of widening the existing bridge to provide wider (ADA compliant) sidewalks.

- Project team met with Pinellas County and FDOT to discuss the minimum required typical section required to avoid safety risks if the existing bridge was widened.
- Ron Chin, District 7 Design Engineer, agreed with the County staff, including Jorge Quintas, Pinellas County Engineer, that if the bridge were widened, the typical section should meet a minimum of Green Book standards for bridge width for safety.
- The minimum typical section would require 11 foot lanes with at least three-foot wide shoulders, and 5'6" wide sidewalks on both sides of the bridge.
- The total width of the minimum acceptable typical section would be 42 feet.

Jim Phillips discussed the engineering challenges associated with widening the existing bridge to accommodate the 42 foot minimal typical section.

- The widened cross section would result in a 62% increase in dead load on the bascule piers. A new counterweight with the density of 390 lbs/cf would be required which exceeds the AASHTO maximum of 280 pcf and is therefore not practical.
- The increased loading is primarily a result of the widened roadway cross section which includes shoulders, not the addition of sidewalks.
- All the main members of the bascule span need to be modified so they are stronger than the existing to support the widened section. As a result the new main members will be heavier that the existing.
- Wider crutch bents would be required.
- The bascule pier would need to be widened or replaced to support the additional load and to provide room for the counterweight.
- The existing bascule pier is supported on timber piles. The number, length and capacity of the piles is unknown. There are no bridge plans for the existing bridge.
- The approximate cost for this alternative is $12.5 M, compared to $9.5 M for the Rehabilitation without widening alternative and $15.8 M for construction of a new movable bridge.

- No elements of the original 1929 bridge will remain.

Comments made by SHPO concerning the proposed widened rehabilitation alternative are summarized below:

- Dan and Alyssa asked if the existing bridge could be modified to include two, ten foot wide lanes and a sidewalk on one side 5 to 5.5 feet wide, without widening the bridge.

- Jim Phillips discussed potential issues with this alternative that would not be conducive to reconfiguring the bridge.
    - Because the existing sidewalks are already cantilevered, adding the sidewalk would result in a large cantilever. This increases the loading on the main girders and will require stronger, heavier structural elements.
    - Even reconfiguring the bridge to add a wider sidewalk would require the roadway section to be brought up to minimum standards. A travel lane cannot be located directly adjacent to a bridge rail.

- SHPO requested that URS further evaluate this option and provide additional information to SHPO and FHWA.

- Dan McClarnon stated that if the evaluation concluded that reconfiguration of the bridge with widening to provide sidewalks was not practicable because of engineering constraints and safety concerns, SHPO could consider determining that removal of the bridge would result in an Adverse Effect and move forward with discussing appropriate mitigation.

Discussions concerning a "New Movable Bridge"

- The 47-foot wide typical section for the proposed new movable bridge alternative (as presented at the Public Workshop in January 2013) included bicycle lanes and sidewalks on both sides of the roadway.

- Dan and Alyssa both stated that minimizing the impact on the community by minimizing the typical section would be preferable. They did not see the need for bicycle lanes and indicated that the minimal acceptable 42 foot wide typical section was preferred over the 47 foot wide section.

- Dan and Alyssa both discussed that the proposed new movable bridge needed to be designed to "soften" the impact on the community. The renderings and simulations presented at the January 2013 workshop included a "bulky" non-descript bridge with no aesthetically pleasing attributes.

- Roy Jackson pointed out that once SHPO determined that removal of the bridge was an "adverse effect" and agreed that a replacement bridge could be constructed provided appropriate mitigation was provided, they would not have any "say" in what type of new bridge was appropriate at this location.

- However, Roy did state that if the proposed design of the replacement bridge resulted in a negative effect on the adjacent Historic District, this could be addressed by SHPO.

- Some concern about possible effects on the historic district resulting from possible higher speeds on the new bridge were raised. Roy stated that if increased traffic speeds or capacity would require that the roadways within the historic district be widened, this could be considered an effect. Jim Phillips and Ann Venables pointed out that the design

speed would be the same as for the existing road and the design would not increase capacity of the roadway.

- Roy mentioned that construction of the fixed bridge might potentially impact the Historic District since the traffic would be dumped from the bridge directly into the Historic District, or have visual impacts. (Note: Construction for the proposed movable bridge ends at Pampas Avenue. Work between Pampas and Forest Avenues consists only of resurfacing. In contrast, construction of the fixed bridge would end just east of just east of Forest Avenue, which is only one block west of the Historic District boundary.)

Possible Mitigation

- Possible mitigation for adverse effects to the historic bridge were presented. Roy Jackson stated that designing the bridge to be similar to the existing is not likely to count towards mitigation.

- Mitigation consisting of a monument or educational kiosk at a location substantially removed from the bridge site was not viewed as favorable by SHPO. Incorporating a monument into the design of the bridge would be preferable.

- A rail design that incorporated elements of the machinery from the existing bridge on a project in Washington State was presented. SHPO indicated that this would be a better method of preserving the historical significance of the bridge than an offsite monument.

Other Issues Discussed

- Linda Anderson stated that all of the alternatives considered would be required to be presented at the Public Hearing.

- Linda also requested information about the planned Howard Park Trail.

- Roy stated that if the justification for the need for sidewalks and bicycle lanes was primarily based on the fact that a planned trail included the bridge, possible impacts to the planned trail would need to be addressed as a potential Section 4(f) issue.

- Ann Venables stated that the public comments and concerns in response to the Alternatives Workshop about the lack of safe pedestrian facilities on the bridge was an important factor in the conclusion that improved facilities were needed. The proposed Howard Park Trail is shown in the 2035 MPO LRTP as a “Planned Cost Feasible Trailways Project” but is not currently funded.

- It was also pointed out that although sidewalks are not continuous on both sides of the bridge east and west of the project limits, future development and roadway improvements could result in construction of bicycle lanes and sidewalks in the future. If a new residential development was proposed at the site of the Bayshore Mobile Home Park, the County would likely require construction of sidewalks adjacent to the development west of the bridge.

- Ann Venables also noted that of 77 written responses received from the public after the January 2013 Alternatives Public Workshop, the majority of those responding supported replacement with a new bascule bridge or rehabilitation. (Rehabilitation – 11, Rehabilitation or Movable Bridge -12, New Movable Bridge 32).

Pinellas County Beckett Bridge

Historic Whitcomb Bayou Circa 1921

County Project No. PID 2161 *FDOT Financial Project No.: 424 385-1-28-01* *January 2013*

Alternatives Workshop Scheduled

An Alternatives Workshop is scheduled for the ongoing Beckett Bridge (Riverside Drive) Project Development and Environment (PD&E) Study. The workshop will be held on Wednesday, January 23rd, 2013 from 5:00 pm until 7:30 pm at the Tarpon Springs Yacht Club, located at 350 N. Spring Boulevard in Tarpon Springs.

The purpose of this informal workshop is to provide you with an opportunity to learn more about the alternatives currently under consideration, ask questions, and express your comments and concerns. A court reporter will be available to record your comments. A brief video presentation will be shown continuously and can be viewed at any time during the meeting.

Alternatives Workshop

Date: *January 23, 2013*

Time: *5:00 p.m. to 7:30 p.m.*

Place: *Tarpon Springs Yacht Club*
350 N. Spring Boulevard
Tarpon Springs, FL 34689

Information about the conceptual design and possible impacts of the various alternatives will be on display. Representatives of the project team will be available to answer questions and listen to your ideas. We look forward to your input!

About the Project

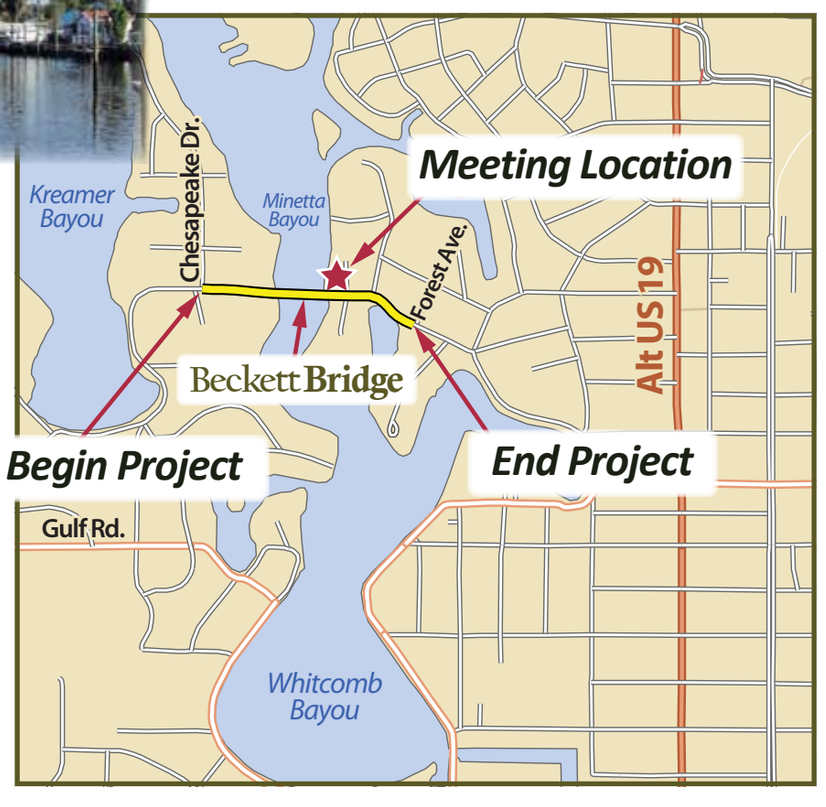
Pinellas County, in coordination with the Florida Department of Transportation and the Federal Highway Administration (FHWA), is conducting a PD&E Study to evaluate the removal, rehabilitation or replacement of the existing bridge. The study began in January 2011. Since then a number of alternatives have been evaluated. The results of this evaluation will be presented at the workshop.

The existing Beckett Bridge crosses Whitcomb Bayou, which provides access to the Anclote River and eventually the Gulf of Mexico. The Bridge was originally constructed in 1924 as a timber structure with a steel movable span. The timber portions of the bridge were replaced with concrete in 1956. The bridge provides six feet of vertical clearance and 25 feet of horizontal clearance between the fenders for boats passing through the channel.

In recent years, costly and disruptive repairs have been required to keep the bridge operating safely. The bridge structure and machinery have deteriorated.

Some of the bridge features do not meet current design standards. No shoulders are provided and the existing sidewalks are very narrow. Major rehabilitation or replacement of the bridge is needed to keep the bridge open and operating efficiently.

The bridge is eligible for listing in the National Register of Historic Places. The bridge played an important role in the early development of Tarpon Springs and is one of a few remaining historic bridges of similar design in Florida.



Alternatives Considered

No-Build
Only routine maintenance would be performed as needed to keep the bridge open to traffic until safety issues would require it to be closed. Repair or replacement would be considered at a later date.

No-Build with Removal of the Existing Bridge
Only routine maintenance needed to keep the bridge open will be performed until it is no longer safe for traffic. The bridge would then be demolished. A new bridge would not be constructed.

Rehabilitation
Extensive repairs would be required to extend the life of the bridge for approximately 25-30 years. The existing roadway configuration (typical section) and navigational clearances would remain the same. The bridge would not be widened. Repair of the bridge structure will include extensive concrete and steel repair. The electrical and mechanical systems would be replaced.

New Movable Bridge
The existing bridge would be demolished and a new two-lane movable bridge would be constructed in approximately the same location. Traffic would be detoured during construction. The new bridge will provide 7.8 feet of vertical clearance and 25 feet of horizontal clearance for boats passing under the bridge.

New Mid-Level Fixed Bridge
The existing bridge would be demolished and a new two lane, mid-level bridge would be constructed in approximately the same location. Traffic would be detoured during construction. The bridge will provide 28 feet of vertical clearance and 25 feet of horizontal clearance for boats passing under the bridge. Two options were developed for this alternative. The options impact different areas of adjacent property.

Share Your Comments

We look forward to receiving your questions, ideas, and comments. Written comments will be included in the official project record. Comment forms will be available at the Alternatives Workshop.

Comments and questions can also be submitted via the project website:

www.pinellascounty.org/beckettbridge

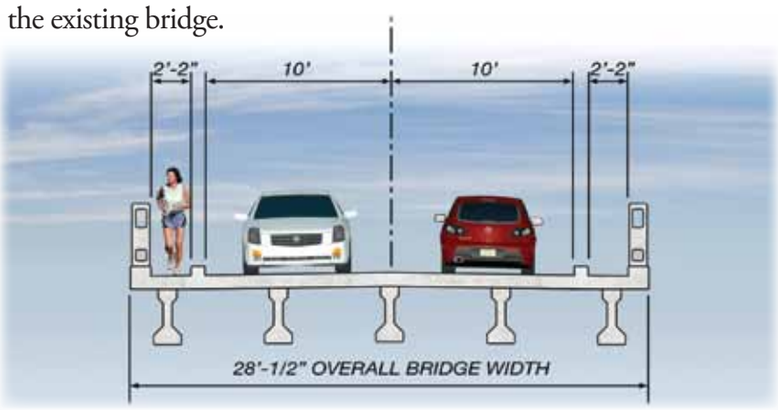
or by contacting Tony Horrnik, PE, SI, at:

thorrnik@co.pinellas.fl.us

or by phone: (727)464-3640

Typicals Sections

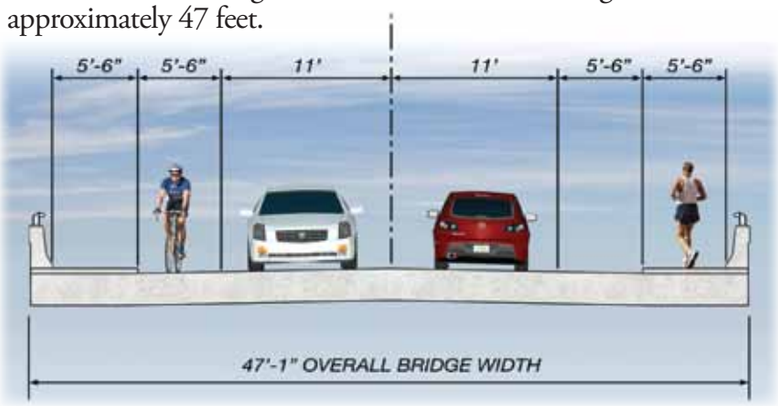
Existing Bridge Typical
The existing typical section consists of one, 10-foot wide, travel lane in each direction and 2-foot 2-inch-wide sidewalks separated by a curb on both sides of the bridge. The typical section for the No-Build or Rehabilitation alternatives would remain the same as the existing bridge.



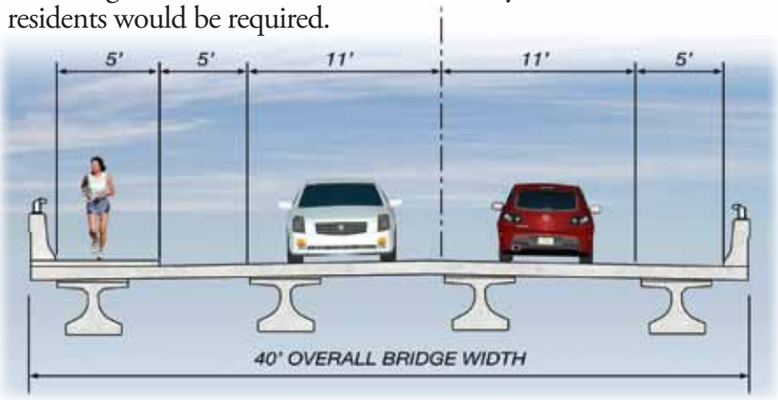
Proposed Bridge Typicals

The proposed bridge typical section for the bridge replacement options are shown below.

Movable Bridge Typical
A new movable bridge would provide two 11-foot lanes with 5½ foot wide outside shoulders, and 5½ foot wide sidewalks on both sides of the bridge. The width of the new bridge would be approximately 47 feet.



Fixed Bridge Typical
A new fixed bridge would provide two 11-foot lanes with 5-foot outside shoulders on both sides and a 5- foot wide sidewalk on the north side only. The width of the new bridge would be 40 feet. Retaining walls which would block driveway access to some residents would be required.



Project Schedule

- *Based on comments received from the public and further engineering and environmental analyses, a "Preferred Alternative" will be selected by the County and presented at a Public Hearing in Summer 2013.*
- *Approval of the selected alternative by the FHWA is anticipated to be obtained in Winter 2013.*

Summary of Comments Received in Response to the Alternatives Presented at the January 23, 2013 Alternatives Workshop for the Beckett Bridge PD&E Study

Comments received from the public between January 1 and February 8, 2013, concerning the alternatives presented on January 23, 2013 at the Alternative Community Workshop are summarized below. 120 persons signed in at the meeting. A total of 71 written comments were submitted via "Public Workshop Comment Forms", via email to County Staff and via the project website. Comments provided verbally to the Court Reporter from five individuals, were also included.

Not all comments included a preference for a specific proposed alternative. Some comments requested alternatives other than those presented. The following summary accounts for comments that did state a preference for an alternative that was presented at the Workshop. Please note that a decision regarding the selection of a "Preferred Alternative" is based on many factors, one of which is community input. **These numbers are not considered "votes".**

No-Build	7
No-Build with Removal of Existing Bridge	2
Rehabilitation	11
Rehabilitation or Movable Bridge	12
New Movable Bridge	32
New Fixed Bridge (Vertical Clearance 28 feet)	4

Preference for Alternatives Other than those Presented

- Construction of a fixed bridge with only seven to eight feet of clearance
- Rehabilitation with widening to provide bicycle lanes and sidewalks
- Rehabilitation with an inoperable movable span
- Rehabilitation with improved sidewalks to accommodate disabled
- Rehabilitation with current weight restrictions enforced
- Consider a tunnel

Many individuals expressed strong opposition to removing the existing bridge permanently.

Many individuals commented on specific concerns. A summary of issues raised follows:

<u>Pedestrian/Bicycle Facilities</u>

- Bicycle lanes and sidewalks are needed on the new bridge.
- The existing sidewalk is not adequate, wider sidewalks are needed.
- Bicycle lanes and sidewalks should be constructed on Riverside Drive approaching the bridge.
- Bicycle lanes and sidewalks are important especially since there is a nationwide emphasis on health and exercise
- Money should not be spent for bicycle lanes or sidewalks on the bridge since there are currently no bicycle lanes and sidewalks on Riverside Drive approaching the bridge.
- Only one sidewalk is needed; there is no need to impact property owners with two sidewalks.
- Bicycle lanes and sidewalks should be added to the bridge if rehabilitated.
- Bicycle lanes are not needed and a sidewalk is needed only on one side
- Sidewalks should accommodate those with disabilities.
- The bridge should be closed to traffic and open only to pedestrians and bicycles.
- The bridge should have one walking lane and one lane for vehicles.

Vertical Clearance

- Limiting clearance will negatively affect waterfront property values by restricting access to deeper water for tall boats.
- Constructing a movable bridge to accommodate all boats is desirable.
- Tarpon Springs is a "water-based" community. There are too many "water –based" events to construct a fixed bridge.
- Whitcomb Bayou serves as a refuge for all boats during storm events. Clearance should not be limited.
- There are not enough boats requiring more than 28 feet of clearance to justify the cost of a new movable bridge or for a fixed bridge higher than 7 or 8 feet.
- Limiting clearance will not affect waterfront property values.
- Constructing a movable bridge to accommodate a few tall boats is not economical.
- The fixed bridge will provide enough vertical clearance since the water depth in the bayou and channel does not allow for large sail-boats.
- Opportunities to relocate existing boats that require the bridge to open at docking facilities on the other side of the bridge should be explored.

Historical Context and Significance

- A new bridge should be similar in design to the existing historic bridge.
- Tarpon Springs is and important heritage tourist attraction and the historic bridge is part of the attraction for tourists.
- The historical character of the bridge should be preserved.
- A fixed bridge will negatively affect the historic character, beauty and aesthetics of the area.
- Construction of a replacement bridge will negatively impact the historic character of the community.
- The Tarpon Springs Historical Society opposed replacement of the historic bridge and supports rehabilitation.

Costs

- Spending additional money to accommodate boats with high masts is not reasonable.
- Spending money on a new bridge is not acceptable.
- Rehabilitation is not a long-term solution.
- A new bridge should be constructed now since construction will cost more in the future.
- A mid-level fixed bridge will save bridge tender costs and allow most boats to pass under.
- Money should not be spent to continually repair the bridge, it should be replaced.
- Costs to buy right-of-way and possible legal challenges if eminent domain is necessary to acquire the right-of-way for the fixed bridge will likely exceed the cost of the movable bridge.
- The bridge will last more than ten years if No-Build is selected.

Flooding and Roadway Repairs

- Riverside Drive and the Bridge cannot function as an effective evacuation route because the bridge approaches flood in storm conditions.
- Potholes should be repaired and flooding issues on Riverside Drive should be addressed before money is spent replacing the bridge.
- Repair or replacement of Riverside Drive is needed between the bridge and Alternate US 19.

Detour
- Damage to local roads on the detour route should be repaired after construction is complete.
- The Moorings Condominium entrance is located on a blind curve on Whitcomb Bayou. A detour will increase traffic to this area and possibly create a dangerous situation. The Moorings representative requested that traffic not be detoured to Whitcomb Boulevard, but should be directed from South Florida Avenue to Meres Boulevard.

Community/Property Impacts
- A new bridge will destroy the uniqueness of the community.
- The fixed bridge options will destroy the ambiance of the community.
- The fixed bridge will impact property and destroy waterfront views.
- The fixed bridge looks like a freeway and is not compatible with the community.
- A new bridge should minimally impact the current residents.
- Impacting property to construct the proposed fixed bridge is not acceptable.
- Retaining walls are intrusive on views of the mobile home park and others.
- The movable bridge is less intrusive on nearby properties.
- The movable bridge maintains the "community" feeling of the area.

Traffic and Evacuation
- The bridge should not be removed since it is important for emergency evacuation.
- The assisted living facilities on Chesapeake Drive rely on the bridge for immediate access for emergency response.
- The bridge is important for moving traffic from the Sunset Hills area into town.
- The fixed bridge will negatively impact traffic patterns for adjoining residents.
- The bridge is important for access to downtown Tarpon Springs.
- More speed bumps should be installed on Riverside Drive.

Other
- The trailer park should be purchased for a city park.

Beckett Bridge PD&E Study - Alternatives Workshop
Responses to Comments

Pedestrian/Bicycle Facilities

The existing sidewalks are only 2 feet 2 inches wide and do not meet standards established by the American Disabilities Act. There are no bicycle lanes or shoulders on the existing bridge. Current design standards for similar bridges include shoulders and wider sidewalks.

Sidewalks, 5.5 feet wide, are proposed on both sides of the Movable Bridge Alternative. Shoulders, which can be used by experienced bicyclists, also 5.5 feet wide, are also proposed on both sides of a new movable bridge.

In addition to accommodating cyclists, the proposed shoulders improve safety for pedestrians and allow cars on the bridge to pull over out of the travel lanes to allow emergency vehicles to pass. Shoulders also provide a safer area for disabled vehicles to pull over.

A future recreational trail, the Howard Park Trail, is proposed to cross the Beckett Bridge. Accordingly, improved pedestrian and bicycle facilities should be considered when bridge improvements are made.

For the Movable Bridge Alternative, six-foot wide sidewalks and four-foot wide shoulders are also proposed on Riverside Drive, approaching the bridge, between Chesapeake Drive and Forest Avenue. Because of the limited right-of-way, a six-foot wide sidewalk is proposed only on the north side of the roadway between the bridge and Chesapeake Drive. No sidewalks are proposed on the south side of the roadway, adjacent to the Bayshore Mobile Home Park. No impacts to residential property adjacent to the roadway will occur from construction of the sidewalks or shoulders for the movable bridge alternative.

A new bridge is designed to last about 75 years. Although there are currently no sidewalks on the roadway beyond the project limits, they could be added within the next 75 years, depending on future development and funding. It is much more expensive to add sidewalks to the bridge after it is constructed.

Providing wider sidewalks or shoulders on the existing bridge would require widening of the bridge. The Rehabilitation Alternative, as proposed, does not include widening of the existing bridge.

Extensive additional engineering analysis is required to determine if a sidewalk could be added to the existing bridge as part of the Rehabilitation improvements.

On average, more than 7,000 vehicles a day travel over the Beckett Bridge in both directions. Closing one lane to vehicular traffic would not be practical if the bridge remains.

Vertical Clearance

A permit from the US Coast Guard (USCG) will be required if a new bridge is constructed. The USCG has the authority to determine the minimum height required for a new fixed bridge. There are no official guidelines for clearances at this location.

A number of waterfront property owners along Whitcomb Bayou have expressed concern about their loss deep water access if a new fixed bridge is constructed. In addition, some of these property owners already have boats which require the bridge to open. The Bayshore Mobile Home Park also provides docks for sailboats and other recreational boats for seasonal residents. Accordingly, it is not anticipated that the USCG would permit a fixed bridge with a vertical clearance of 6 – 8 feet.

Historical Context and Significance

The bridge has been determined to be eligible for listing in the National Register of Historic Places by the State Historic Preservation Officer (SHPO).

If SHPO determines that the Preferred Alternative results in an "adverse impact" to the bridge, efforts to offset this impact (mitigation) will be required. Examples of actions that could offset the impact could include the following:

- Photographic documentation of the bridge which will be archived.
- Preservation of a portion of the bridge to be displayed in a public area with educational information to preserve the history of the bridge.

The project team recognizes the historic character of the community and will consider possible impacts to the historic character when selecting a Preferred Alternative.

A Cultural Resource Committee has been established to address the historical significance of the bridge and to provide input during the development of alternatives and selection of a Preferred Alternative. This committee includes representatives of the SHPO, FDOT, Tarpon Springs Historical Society, and City and County staff.

If the Rehabilitation Alternative is selected as the Preferred Alternative, additional coordination with the SHPO would be required during development of the final design plans for the needed repairs.

Costs

Cost Estimates for the proposed alternatives are provided below.

Rehabilitation	$9.5 M
New Movable Bridge (7.8 feet Vertical Clearance)	$15.8 M
New Fixed Bridge (28 feet Vertical Clearance)	$11.1 M + Cost to Purchase Right-of-Way

Costs include Design, Construction and Construction Engineering Inspection. The cost estimates for a new Fixed Bridge does not include the cost to purchase adjacent property for additional right-of-way. No right-of-way is required for the New Movable Bridge.

Flooding and Roadway Repair

Addressing the need for roadway maintenance on Riverside Drive outside the project limits (Chesapeake Drive to Forest Avenue) is not included in this PD&E Study. The study's focus is evaluation of potential improvements to the existing bridge. Roadway work associated with the Preferred Alternative selected for the bridge improvements will be limited to Riverside Drive within the project limits. Although Pinellas County owns and operates the Beckett Bridge, the City of Tarpon Springs is responsible for maintenance on Riverside Drive/N. Spring Boulevard. A copy of the Summary of Comments will be provided to the City of Tarpon Springs.

Currently no stormwater management system exists within the project corridor. If a replacement bridge is selected as the Preferred Alternative, a curb and gutter drainage system is proposed. The proposed system will convey collected stormwater runoff from the roadway to Whitcomb Bayou in the vicinity of the bridge. This system may reduce flooding in some areas. During final design, evaluation of methods to address flooding issues near the bridge will be continued in more detail.

The low elevation of the area contributes to local flooding. Raising the elevation sufficiently to completely eliminate flooding issues near the bridge would require acquisition of property adjacent to the roadway.

Community/Property Impacts

Construction of a new movable bridge, as proposed, will not require acquisition of any additional adjacent property. In contrast, construction of either option for the proposed new fixed bridge will require acquisition of about two acres of adjacent property. Depending on the alternative, three to five residences would require relocation and impacts could occur to some residents of the Bayshore Mobile Home Park.

Although visual impacts are subjective, it is recognized that the fixed bridge would impact the view from the adjacent properties.

Traffic and Evacuation

Recent traffic studies indicate that on average, approximately 7,700 cars travel over the Beckett Bridge on a daily basis. Pinellas County recognizes that this section of Riverside Drive is an important route to Tarpon Avenue, which is considered a designated emergency evacuation route.

Traffic calming measures, including installation of additional speed "humps" on Riverside Drive were not evaluated as part of the Beckett Bridge PD&E Study. Decisions concerning the need for additional speed "humps" within the project area would be made by the City of Tarpon Springs.

Detour

Detouring traffic during construction of the Rehabilitation or the Replacement alternatives would require construction of a temporary bridge next to the existing bridge, or constructing the bridges cannot be avoided without impacting substantial additional adjacent property owners. Efforts will be made during design to minimize the detour as much as possible. However, the anticipated length of the detour is six months for the Rehabilitation alternative, one year for construction of a movable bridge, and two years for construction of a fixed bridge.

In addition to detouring traffic around Whitcomb Bayou via Whitcomb Boulevard, two other detour routes are available. Traffic can also be diverted from Alternate US 19 to Florida Avenue using Meres Boulevard. If adequate advanced notice and signing are provided, it also may be possible to divert traffic south of the project corridor via Klosterman Road, Carlton Road and Curlew Road to reach Florida Avenue.

Project Impacts

Rendering - Not Actual Design

The proposed new movable bridge will meet future traffic needs and have minimal impacts on the community and environment. However, the project will result in removal of the existing bridge, which is eligible for listing in the National Register of Historic Places (NRHP). To offset these impacts, the State Historic Preservation Officer (SHPO) will require mitigation. Mitigation will include documenting the bridge with photographs and other information for the Historic American Engineering Record. Additional mitigation could include creating a monument or educational kiosk in a public space, or incorporation of a portion of the existing bridge into the new bridge. Your comments on mitigation options are welcome.

Other impacts include:

- Impacts to approximately 0.03 acres of wetlands are unavoidable.
- Construction of the new bridge will change the views for some property owners, but visual impacts will be minimal. The existing bridge only provides about 1.8 feet more vertical clearance at the channel than the existing and will be constructed on approximately the same alignment.
- Temporary air and noise Impacts will occur during construction.
- Purchase of additional property will not be needed to construct the new bridge.
- Existing driveways will remain open.
- No noticeable changes in noise levels will occur for nearby residents.

Project Costs

The estimated cost for construction of the Recommended Alternative is $15.8 M. This cost includes construction, design and construction inspection services. Approximately $0.8 M is allocated for aesthetic enhancements. There will be opportunities for community input concerning the aesthetics of the proposed bridge during the Design Phase.

What Happens Next?

All comments received tonight and in the ten-day comment period following the hearing will become part of the official public hearing record. A presentation will be made to the Board of County Commissioners at their April 15, 2014 meeting, beginning at 6:00 pm. The Commission will decide whether to confirm their approval of the Recommended Alternative to move forward as the Preferred Alternative. The public is invited to comment at this meeting.

After selection of a Preferred Alternative, Section 106 Coordination concerning the impacts to the historic bridge will be completed. Project documents will be finalized and forwarded to the Federal Highway Administration for approval.

Design is anticipated to begin in 2016 and be completed in 2018 contingent on funding availability. Construction is anticipated to begin in 2019 contingent on funding availability.

All of the graphics and information displayed at the hearing are available on the project website: www.pinellascounty.org\beckettbridge

Title VI and Title VIII

This hearing complies with Title VI and Title VIII of the Civil Rights Acts of 1964, as amended. This hearing is being held to give all interested persons the right to understand the project and comment on their concerns to the County. Public participation is encouraged and solicited without regard to race, color, national origin, age, sex, religion, disability or family status. Persons wishing to express their concerns relative to compliance with Title VI and Title VIII may do so by canting Mr. Paul Valenti, Pinellas County Office of Human Rights, 400 S. Ft. Harrison Ave, Suite 500, Clearwater, FL 33756, (727) 464-3640, pvalenti@co.pinellas.fl.us.

Pinellas County

Beckett Bridge

Public Hearing Handout

Historic Whitcomb Bayou Circa 1921

County Project No. PID 2161 FDOT Financial Project No.: 424 385-1 February 2014

Welcome...

To the Beckett Bridge Project Development and Environment (PD&E) Study Public Hearing.

Introduction

Pinellas County, in coordination with the Florida Department of Transportation (FDOT) and the Federal Highway Administration (FHWA) is conducting this Public Hearing to provide the public with an opportunity to express their views on the location, conceptual plan, social, economic and environmental effects of the proposed improvements.

The study, which began in January 2012, evaluated options for rehabilitation or replacement of the existing bridge, as well as the No-Build and No-Build with Permanent Removal of the Existing Bridge alternatives. The limits of the study extend along Riverside Drive from Chesapeake Drive to Forest Avenue in Tarpon Springs, Pinellas County, Florida.

During the informal portion of the Hearing, study team representatives are available to discuss the project, answer questions and receive your comments. Conceptual plans, reports and other supporting materials are available for your review. A court reporter is also available to receive your comments. The County will make a formal presentation at 6:00 pm which will be followed by public comments.

Agenda

Date: February 26, 2014
Time: 5:00 p.m. - Informal Open House
6:00 p.m. - Formal Presentation & Public Comments
Place: Tarpon Springs Yacht Club
350 N. Spring Boulevard
Tarpon Springs, FL 34689

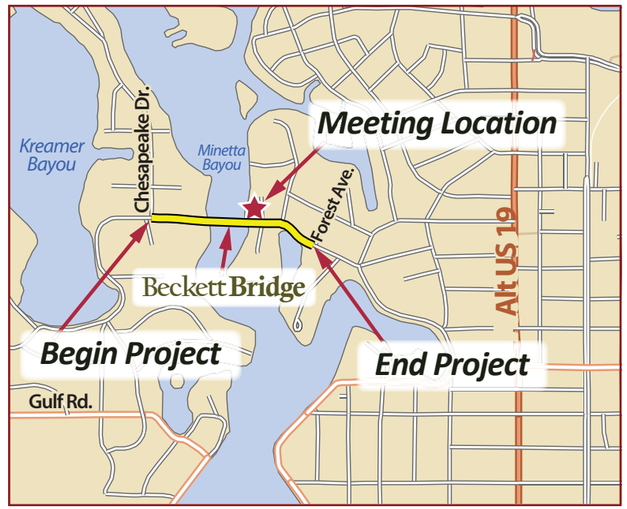
Share Your Comments

You may submit your comments regarding the proposed improvements in one of the following ways:

- Complete a "Speaker Card", available at the Sign-In table and make an oral statement at the microphone during the formal portion of the hearing.
- Make an oral statement to the court reporter during the informal portion of the hearing.
- Email your comments to the Project Manager – *thornik@co.pinellas.fl.us*
- Submit your comments on the project website – *http://www.pinellascounty.org/beckettbridge*
- Complete a comment form (or compose a letter) and drop it in the "Comment" box provided, or mail your written comments to the address below:

Mr. Tony Horrnik, P.E., S.I., Project Manager
Pinellas County
Dept. of Environment and Infrastructure
14 S. Fort Harrison Avenue
Clearwater, FL, 33758

Written comments postmarked, and email or website comments received, no later than March 8, 2014 will become a part of the official public record for this hearing.



Need for Improvement

The existing Beckett Bridge crosses Whitcomb Bayou which provides access to the Anclote River and eventually the Gulf of Mexico. Riverside Drive is an extension of Tarpon Avenue, which is a designated evacuation route. The Bridge was originally constructed in 1924 as a timber structure with a steel movable span. The timber portions of the bridge were replaced with concrete in 1956. The bridge is eligible for listing in the National Register of Historic Places (NHRP). The bridge played an important role in the early development of Tarpon Springs and is one of a few remaining historic highway bridges of similar design in Florida.

The bridge provides six feet of vertical clearance and 25 feet of horizontal clearance between the fenders for boats passing through the channel. In recent years costly and disruptive repairs have been required to keep the bridge operating safely. The bridge structure and machinery have deteriorated. Some of the bridge features do not meet current design standards. No shoulders are provided and the existing sidewalks are very narrow. The bridge is considered "functionally obsolete".

Structural deficiencies require weight restrictions on the bridge. School busses, some emergency vehicles, and some larger trucks are not permitted to cross the bridge. Major rehabilitation or replacement of the bridge is needed to keep the bridge open and operating efficiently.

Evaluation of Alternatives

Alternatives considered include No-Build, No Build with Permanent Removal of the Existing Bridge, Rehabilitation, Replacement with a New Movable Bridge (with 7.8 feet of vertical clearance) and Replacement with a New Fixed Bridge (with 28 feet of vertical clearance). These alternatives were presented at Public Alternatives Workshop in January, 2013.

Further evaluation of these alternatives, and evaluation of two additional Rehabilitation Alternatives was conducted following the workshop. Key factors considered include the following:

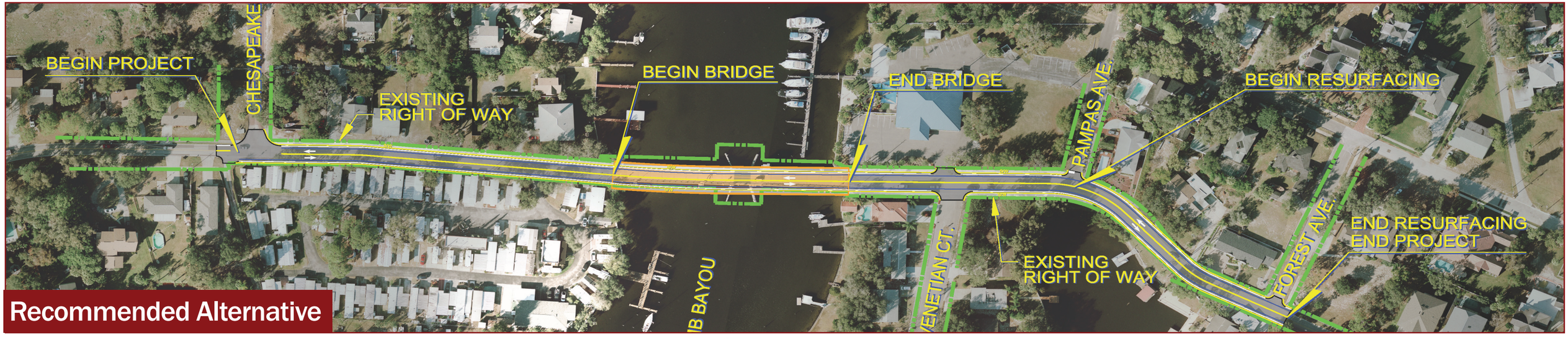
- Community input
- Impacts to the existing NRHP eligible bridge
- Impacts to navigation
- Impacts to historic structures
- The need for additional right-of-way
- Visual and noise impacts
- Impacts to community services
- Impacts to wildlife and habitat
- Impacts to wetlands, floodplains and marine resources
- Residential and business impacts
- The need for sidewalks and bicycle lanes
- Construction impacts
- Construction and Life-Cycle costs
- Need for safe and efficient transportation

Many factors, in addition to those above were considered. A table which compares the alternatives considered, the "Alternatives Evaluation Matrix", is included in your handout and is on display here tonight.

Draft technical reports which discuss all alternatives considered are available tonight at the hearing for your review. These reports are also available for public viewing until March 8, 2014 at the Tarpon Springs Public Library and the Tarpon Springs City Clerk's Office.

Tarpon Springs Public Library
138 Lemon Street
Tarpon Springs, FL 34689
Mon-Wed 10:00 a.m. – 9:00 p.m.
Thurs-Fri 10:00 a.m. – 6:00 p.m.
Sat 10:00 a.m. – 5:00 p.m.

Tarpon Springs City Clerk
410 North Ring Avenue
Tarpon Springs, FL 34689
Mon-Fri 8:00 a.m. – 5:00 p.m.



Recommended Alternative

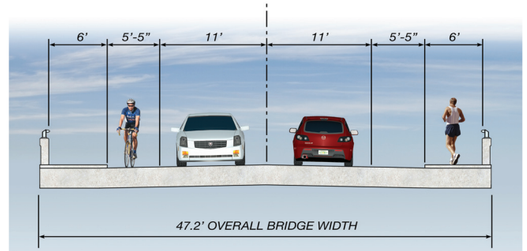
Proposed Improvements

Recommended Alternative Selected

The Recommended Alternative consists of removal of the existing bridge and construction of a new two-lane, movable bridge in approximately the same location. The new bridge will provide 7.8 feet of vertical clearance and 25 feet of horizontal clearance. The new bridge can be constructed within existing County right-of-way, and will not impact any driveways or intersections with Riverside Drive.

Proposed Bridge Typical Section

The proposed bridge typical section will provide two 11- foot lanes with 5.5-foot wide shoulders. Six-foot wide sidewalks are proposed on both sides of the bridge. The total width of the new bridge will be approximately 47.2 feet.

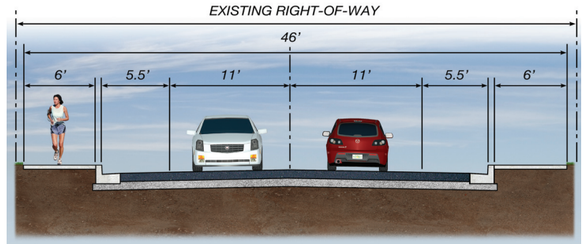


Proposed Bridge Typical

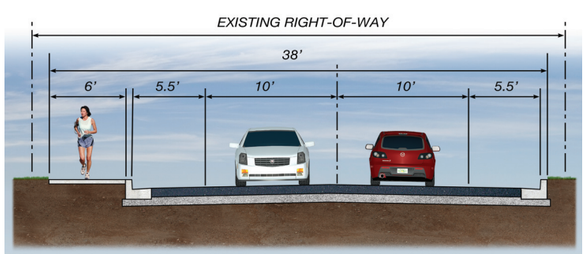
Proposed Roadway Improvements

The proposed roadway east of the bridge would provide two, 11-foot wide travel lanes. Six-foot wide sidewalks and 5.5-foot wide shoulders are proposed on both sides of the roadway.

To avoid property impacts west of the bridge, the proposed travel lanes are only 10-feet wide, and a 6-foot sidewalk is proposed only on the north side of the roadway.



East of Bridge



West of Bridge

Pinellas County

Beckett Bridge PD&E Study

Alternatives Evaluation Matrix

IMPACT EVALUATION CRITERIA	NO BUILD	NO BUILD/REMOVE BRIDGE	REHABILITATION	NEW MOVABLE BRIDGE	NEW FIXED BRIDGE	NEW FIXED BRIDGE
Roadway/Bridge Issues				**Recommended Alternative**	**OPTION A**	**OPTION B**
Width of Vehicular Travel Lanes	10 feet	N/A	10 feet	11 feet	11 feet	11 feet
Shoulders	None	N/A	None	5.5 feet	4.5 feet	4.5 feet
Sidewalks	2'2"	N/A	2' 2"	6 feet-Both Sides	6 feet-One Side Only	6 feet-One Side Only
Meets Current Design/Safety Standards	No	N/A	No	Yes	Yes	Yes
Structural Deficiencies Corrected	No	N/A	Yes	Yes	Yes	Yes
Vertical/Horizontal Channel Clearance	6 feet/25 feet	N/A	6 feet/25 feet	7.8 feet/25 feet	28 feet/25 feet	28 feet/25 feet
Bridge Openings	No Change	N/A	No Change	Minimal to No Change	None	None
Right of Way Issues						
Overall Bridge Width	28 feet	N/A	28 feet	47.2 feet	39.6 feet	39.6 feet
Area Impacted	None	None	None	None	2 acres	2 acres
Relocations	None	None	None	None	5 Residences	3 Residences, 7 Mobile Homes
Other Impacts	None	None	None	None	Yacht Club Parking Driveways on South Side, East of Bridge	Yacht Club Parking Driveways on South Side, East of Bridge
Environmental Impacts						
Impacts to Historic Resources	None	None	High	High	High	High
Wetlands	None	Low	Low	0.03 acre	0.02 acre	0.03 acre
Wildlife	None	Low	Low	Low	Low	Low
Parks/Recreation	None	None	None	None	None	None
Visual Impacts	None	None	Low	Low	High	High
Noise Impacts (Permanent)	None	None	None	Low	Low	Low
Costs						
Total Project Costs[1]	N/A	$0.9 M (Demolition)	$9.5 M	$15.8 M	$11.0 M (Plus ROW Costs = $4.0 M)	$11.0 M (Plus ROW Costs = $2.9 M)
Construction Impacts						
Detour Duration	N/A	Permanent	6 months	12 months	24 months	24 months
Total Construction Time	N/A	N/A	12 months	24 months	24 months	24 months
Anticipated Service Life	10 years or less	10 years or less	25-30 years	75 years	75 years	75 years

[1]Costs include demolition, roadway and bridge construction, mobilization, maintenance of traffic, aesthetic enhancements, engineering design, construction engineering inspection (CEI) and contingency.

Recommended Alternative Simulations

Summary of Comments Received

An invitation letter, project fact sheet and public notice were mailed to approximately 1,200 property owners and other stakeholders three weeks prior to the Public Hearing.

100 individuals signed in at the Public Hearing

6 individuals spoke at the Public Hearing

Comments received between the date notifications were mailed and 10 days after the hearing (the official Public Hearing Comment Period) included:
21 comment forms
1-email to Tony Horrnik from Mr. Faison
1 letter from Ms. Tarapani

Summary of Comments

19 – Supported Recommended Alternative
1 – Requested a new low-level fixed bridge
1 - Requested preservation of existing bridge
1 – Requested consideration of a fixed bridge or repair of existing bridge with the elimination of the "drawbridge functionality".

Speakers at Public Hearing:
Five of the six speakers specifically stated that they supported the Recommended Alternative.
One objected and expressed desire for a low-level fixed bridge.

Comment Forms, Letters and Emails Received
14 individuals specifically supported Recommended Alternative
1 individual expanded on comments made at public hearing
2 individuals (Ms. Cyndi Tarapani and Mr. Robert Faison) objected to the Recommended Alternative

- Ms. Tarapani requested preservation of the existing bridge
- Mr. Faison requested consideration of a fixed bridge or repair of the existing bridge but eliminate the functionality of the drawbridge

4 individuals did not specifically state support for the Recommended Alternatives, but stated concerns or raised questions associated with the proposed replacement of the existing bridge.

Comments and Concerns Included:
Comments related to the Proposed Detour

- Is it possible to construct a temporary pedestrian bridge or provide a "ferry" for pedestrians during construction?
- Requested a temporary bridge during construction for vehicles and for emergency evacuation
- Suggested that construction techniques exist that could reduce detour time in half
- Requested detour signage that was clear to travelers, provided a specific detour signage plan

- Requested that roadways on the detour routes be repaired prior to closing the bridge

Comments related to the design/looks of the Recommended Alternative

- Requested design similar to existing, but wider with sidewalks and bike lanes as proposed.
- Requested that the new bridge be designed similar to existing historic bridge

Comments Related to Roadway and Drainage

- Spring Boulevard needs to be elevated because it floods during high tides during storms, preventing access to the bridge for evacuation.
- Requested that drainage improvements be made to the approach roadways.

Funding and Cost

- How will the bridge be funded?
- Will my property taxes be raised to pay for the bridge?

Other Comments

- Can future Commissioners change the status of the project since it will take several years to design?
- Boat access to the Bayou is needed for sanctuary during hurricanes.
- The new bridge should be "boat friendly" with bumpers that don't obstruct the slips at the Tarpon Springs Yacht Club.
- A number of individuals expressed support for incorporating parts of the existing bridge into the new bridge.
- The existing speed bumps are not necessary. The speed bumps cause safety problems for two-wheel vehicles. Local police should enforce the speed limits.
- Are there plans to deepen or restore the channel?
- There is an active osprey nest near the site.
- Requested that boat owners be able to operate the movable span remotely to eliminate the need for County staff to open the bridge

Two individuals who own property immediately adjacent to the bridge expressed concerns about how the proposed project could affect their property.

Stephen Katsarelis, owner of the single family residence in the southeast corner of the bridge, across from the Yacht Club **supported the recommended alternative** but expressed the following concerns:

- Concerned about privacy of his pool and hot tub from the raised bridge
- Concerned about impacts to his privacy fence and hedge
- Concerned about safety – specifically speeding on wider bridge, stated that more effective speed bumps should be considered
- Requested additional information about contaminated sites mentioned in the public hearing presentation

Robert Faison, resident at 408 Riverside Drive, immediately adjacent to the bridge in the northwest quadrant, across from Bayshore Mobile Home Park, **objected to the Recommended Alternative.** Mr. Faison recommended that the County consider a fixed bridge or repair the existing bridge but eliminate "the draw bridge functionality". He also expressed the following concerns about impacts from the Recommended Alternative:

Impacts from traffic noise from additional traffic
Impacts to view
Safety exiting residential driveway
Increase in traffic accidents
Impacts of Construction noise
Impacts to wood privacy fence
Impacts to his current access to the sidewalk on Riverside Drive

Ms. Tarapani , president of the Tarpon Springs Preservation Society, requested that the existing bridge be restored.
Please note that the Beckett Bridge is not one of only 7 remaining bascule bridges in Florida. It is one of only a few historic (older than 50 years) highway single-leaf bridges of similar design left in Florida. There are other similar bridges in Florida, including railroad bridges of similar design that are not yet considered historic.

List of Individuals who Submitted Comments

Speakers at Public Hearing

Bill Joyce
Wendy Crosato
Stephen Katsarelis
Donald Goodrich
Dan Culo

Comment Forms

John Stamas
William Stamas
Bill Stamas
James Stamas
Anna Stamas
Adrienne Blakely
Mary Klimas Coburn
Kathryn Demos
Teresa DeWeerd
Dichtas (no first name)
Shawna Flanders
Carol Garnaut
Herzog

Barbara Hodges
Bill Joyce
Tim Keffalas
James Kolianos
Phyllis Kolianos
Dorothy Lee
R Scott Moorhead
L Plowright

Emails

Robert Faison
Cyndi Tarapani (emailed and mailed letter dated March 8, 2014)

URS

Memorandum

Date: July 5, 2013

To: Ann Venables

From: Jim Phillips

Subject: Beckett Bridge
Technical evaluation of single sidewalk concepts

At the June 11, 2013 meeting in Tallahassee, attended by URS, Pinellas County, FDOT and SHPO, representatives from SHPO requested consideration of an additional concept that would modify the existing bridge cross section to accommodate a single, code compliant, sidewalk, rather than two sidewalks has had been previously proposed. This memo summarizes URS's technical evaluation of concepts with a sidewalk on one side only.

The most desirable concept from a historic preservation perspective would be to avoid widening of the bridge and simply rework the arrangement of lanes and sidewalk(s) within the width of the existing bridge (28'-0½"). A modified section of the narrowest practical width would include minimum shoulders, a traffic railing (barrier) on the south side, two travel lanes, a sidewalk on a raised curb on the north side, and a traffic railing at the back of sidewalk. Assuming that design exceptions are granted for lane width (to allow two 10-foot wide lanes rather than the 11-foot minimum) and shoulder width (to allow a 2.5-foot shoulder adjacent to a traffic railing and a 1.5-foot shoulder adjacent to the curb rather than the 3-foot minimum required) the minimum clear roadway width for this configuration is 24 feet. With a minimum 5.5 foot wide sidewalk[1] and two traffic railings (1'-6" on the south side adjacent to traffic and 1'-1" at the back of sidewalk on the north side) the minimum bridge width that would accommodate this section is 32'-1", which is 4'-0½" wider that the existing bridge. Therefore, the existing bridge width is not sufficient to support two lanes and a single sidewalk without widening.

The next most desirable concept from a historic preservation perspective would be one that limits bridge widening and associated impacts such that the existing bascule pier foundations can be saved. As discussed in the June 11 meeting, if the bridge is widened, the new bridge section must meet minimum standards. The minimum width of a bridge featuring a single sidewalk under this scenario would include 3-foot wide shoulders, a traffic railing on the south side (1'-6"), two 11-foot wide travel lanes, a 5.5-foot wide sidewalk on a raised curb on the north side, and a traffic railing at the back of sidewalk (1'-1") on the north side. The clear roadway with of this section is 28 feet and the overall width of is 36'-1". To accommodate this section the bridge would need to be widened by 8'-0½".

URS examined the technical issues associated with widening the bridge by 8'-0½". The evaluation included calculating live load distribution factors (as an indicator of the increase in live load on a main girder due to widening) and approximating dead and live load changes associated with the proposed modifications. The analysis also included determining approximate span balance conditions and corresponding density of the counterweight needed to balance the bridge. The following summarizes the technical challenges disclosed in this investigation:

[1] 5.5 feet is the minimum width required by FDOT for a sidewalk on a raised curb

- As with any solution, the current live load (HL-93) is approximately 32% heavier than the original design load (HS-15 assumed based on year of construction)
- Live load distribution factor for the main girders of the bascule span would increase by 117%
- The net of the above is an increased live load on the main girders that is 2.8 times the original design load.
- The movable span dead load (weight) would increase by approximately 49%
- The density of the counterweight would need to be increased to approximately 360 pcf to properly balance the bascule span (note that the AASHTO recommended maximum density for counterweight concrete is 280 pcf).

Based on this evaluation it is our conclusion that widening the bridge to include a single sidewalk that meets current design criteria is not technically feasible unless the bascule pier is replaced as well. The increased dead load and live loads are beyond what the existing foundations can handle without extensive strengthening. The physical size of the existing bascule pier footing precludes increasing the size of the counterweight and the density required of the existing size counterweight is well in excess of that recommended by AASHTO. In comparison to the widening concepts previously developed with two sidewalks, a single sidewalk concept does not offer any significant improvements or reductions in impacts. Both require complete replacement of the bascule span and bascule piers.

Cc: File:E:\Projects\9250 Beckett PD&E\Structures\Rehab w-Widening

APPENDIX D

Design Criteria

(Chapter 4, Draft PER)

4.0 DESIGN CRITERIA

4.1 Bridge

4.1.1 Channel Clearance Requirements

The proposed bridge will provide horizontal and vertical navigation clearances that are, at a minimum, equal to those of the existing bridge. The existing horizontal clearance is approximately 25 feet between fenders. The vertical clearance for the existing movable span in the closed position is approximately 6 feet. The maximum vertical clearance for the movable bridge in the fixed position which avoids impacts to adjacent right-of-way is 7.5 feet. Discussions with the USCG indicated that a bridge with at least 6 feet of vertical clearance would be permittable.

A waterway survey of waterfront property owners on Whitcomb Bayou was conducted to determine the number and types of boats that would need to pass under the bridge to reach deeper water. The results showed that six sailboats requiring 14-38 feet of vertical clearance were owned by waterfront property owners in the Bayou. Based on this information and discussions with the USCG, a fixed bridge alternative was developed which provided the maximum vertical clearance practical to provide access to these vessels. The maximum vertical clearance that could be obtained without impacting the intersections at the western and eastern limits of the project (Riverside Drive with Chesapeake Drive and Forest Avenue) was determined to be 28 feet.

In summary, these clearances used to develop alternatives include:

1. 25 ft. horizontal between fenders.
2. 28 ft. vertical clearance above MHW between fenders for a fixed span.
3. 7.75 ft. vertical clearance above MHW between fenders for a movable span bridge with the movable span in the closed position.
4. Unrestricted vertical clearance in the channel for a movable span in the open position.

4.1.2 Design Method

Replacement Bridge

The replacement bridge will be designed for a 75 year service life. Concrete may include additives as well as having additional cover over reinforcing steel for increased corrosion protection.

Substructure Elements

Substructure elements, including precast and cast-in-place concrete piles, footings, caps, and columns will be designed for dead load, live load, wind load, etc. in accordance the Load and Resistance Factor (LRFD) method.

Superstructure Elements

Superstructure elements, including prestressed and cast-in-place deck slab, beams, and barrier rails will be designed for dead load, live load, and crash resistance in accordance with the LRFD method.

Bascule Span Superstructure

Structural steel (main girders, floor beams, stringers, bracing, etc.) for the bascule span superstructure will be designed for dead load, live load, and wind load in accordance with the LRFD method.

Bascule Span Electrical and Mechanical

The bascule span machinery and electrical control system will be designed in accordance with the LRFD method. The design will be based on 3,000 (open and close) operation cycles over the proposed 75-yr service life.

4.1.3 Design Loads and Load Factors

Live Load

HL-93 Design Vehicular Live Loading, including design truck or design tandem and design lane load, per *AASHTO LRFD Bridge Design Specifications, 6th Edition – 2010,* Section 3.6, shall be used. The load results from the HL-93 Design Vehicular Live Loading envelopes the load

results for all LRFR Design Live Loads. The movable span shall also be designed for HL-93 Design Vehicular Live Loading when the span locks are not engaged for a Strength II Load Combinations, per *FDOT Structures Design Guidelines*, Section 8.4.

Wind Loads

Section 2.4 of the *FDOT Structures Design Guidelines* shall be used to determine the wind on structure loads for the bridge design. A Basic Wind Speed (V) of 130 mph as per Table 2.4.1-2 shall be used.

Wave Loads

In accordance with the *FDOT Structures Design Guidelines*, Section 2.5, the level of importance classification for the proposed bridge is recommended to be "Critical". This recommendation is based on a combination of factors including projected traffic volumes, route impacts on local residents and businesses, and use of this facility as an evacuation and emergency response route. This classification requires that the replacement bridge be designed to resist wave forces at the Extreme Event Limit State with a performance level of "Repairable Damage". Using thisdesign criteria, the bridge would be designed to survive a 100-year storm event but may experience some damage that would require minimal repair before bridge is returned to service. The use of "Sacrificial Spans" that would require replacement after a 100-year storm event is not recommended.

According to the *Final Report, Design Storm Surge Hydrographs for the Florida Coast, D. Max Sheppard and William Miller Jr., September 2003,* the 100-yr Storm Surge Elevation for the Anclote River is approximately 11.5 feet. The storm surge elevation at the bridge is anticipated to be similar to this elevation. Portions of the superstructure will be below the wave crest elevation. Accordingly, wave forces need to be considered in the design of the bridge. However, it is anticipated that wave heights and corresponding force at the bridge would not be substantial because of the lack of a significant fetch needed to develop wind-driven waves. Furthermore, the presence of topographical features, including numerous adjacent residential buildings and trees, reduce wind velocities at the surface of the water with lower corresponding wave heights.

As the superstructure for the movable bridge alternative will be below the storm surge elevation, it will be subject to waves and thus will be required to be designed to resist the design wave loads. Accordingly, the movable bridge alternative may require wave force-mitigation measures such as a shallow slab type superstructure. The superstructure for the fixed bridge alternatives is anticipated to be above the maximum wave crests and thus it will not be necessary to design these spans for the wave loads.

During final design, a Coastal Engineer will be required to perform a wave analysis to determine the anticipated wave heights and corresponding wave design loads. A Level I Analysis per *AASHTO Guide Specifications for Bridges Vulnerable to Coastal Storms* will yield conservative design wave loads.

Seismic Loads

The superstructure spans will be supported on elastomeric bearings. Therefore, the bridge will be categorized as "exempt" for seismic loads per *FDOT Structures Design Guidelines* Section 2.3. The minimum bearing support dimensions only need to be satisfied as required by *AASHTO Bridge Design Guidelines*, Section 4.7.4.4 for seismic adequacy.

Vehicular Collision Loads

Traffic railing (barriers) on the fixed spans will be in accordance with NCHRP Report 350 Performance Level TL-4 (AASHTO Level PL-2), including crash testing. Traffic railing on the movable span may be constructed of structural steel, and if so, will be designed as an equivalent to a crash tested TL-4 railing, including similar geometry and strength.

4.1.4 Movable Span Operation Requirements

The movable span will be a single-leaf bascule. The movable span drive machinery may be either an electro-mechanical or hydraulic system.

Time of Operation

The normal operating cycle from fully closed to fully opened, or fully open to fully closed, will be a maximum of 60 seconds. The 60 seconds will include a zero to ten second acceleration period and a zero to five second period deceleration, creep speed and seating. This operating cycle will apply for wind loads defined in AASHTO.

Redundancy

Primary span drive components including motors, brakes, reducers, driver machinery, pump/motor groups, hydraulic cylinders, and valving will be designed for redundancy such that one component or system can be removed from service for repair or replacement without disabling the bridge for opening under maximum constant velocity torque wind loads per AASHTO.

Service Duty

The design life for reducers, bearings and other similar mechanical components will be 50 years. The design life for cylinder seals, hydraulic pumps, and other hydraulic seals will be 20 years.

Electrical Service

Electrical service will be 480 volts 3 phase, "wye" for motor loads.

Bridge Control System

Bridge control and operation will be by way of a relay logic with bypass capability.

4.1.5 Environmental Classification

The following environmental classifications apply:

- Superstructure: Corrosive (Extremely Aggressive)
- Substructure: Corrosive (Extremely Aggressive)
- Location: Coastal (Saltwater)

4.2 Roadway

Roadway design criteria are summarized in Table 4-1 below. Conceptual plans have been developed using the current editions of the documents listed below. If the project proceeds to the

Design phase, the editions current at that time will be used for final design of the proposed improvements.

4.1.2 Vertical Clearance over Roadways

The minimum vertical clearance used to develop alternatives for the bridge structure overpasses is 14.5 feet from the bottom of the structure member to the crown (or high point) of the roadway travel way underpass. This clearance height is consistent with AASHTO required minimum criteria.

Table 4-1 – Roadway Design Criteria

Control / Design Element	Existing Roadway Elements	Minimum Design Controls & Standards	Documentation & References
Traffic Volumes (AADT) **Design Year**	9,700 2038	***9,700 vpd***	Design Traffic Technical Memorandum (URS, April 2012 prepared for this PD&E Study)
Functional Classification: Riverside Drive/ N Spring Blvd	**Rural** Collector	**Urban** ***Collector***	City of Tarpon Springs and Pinellas County Comprehensive Plans
Design Speed Collector Roadway	20 & 30 mph (Posted)	**35** mph* (Greenbook) >30 mph** (AASHTO) 35-50 mph*** (FDOT) ***Use 35 mph****	*Greenbook, Table 3-1 ** AASHTO, Chapter 6 ***FDOT PPM, Table 1.9.1
Design Vehicle Single Unit Truck (SU) 8' wide x 30' long Conventional School Bus (S-Bus36) 8' wide x 35.8' long Recreational Vehicle (MH/B) 8' wide x 53' long per AASHTO and Greenbook.	N/A	SU*(Greenbook) SU-30,SU-40, S-BUS36, MH-B** (AASHTO) WB-62 FL***(FDOT) ***Use SU, S-BUS36, MH-B design vehicles****	*Greenbook, Table 3-2 **AASHTO, Table 2-1b ***FDOT PPM, Sec. 1.12
Minimum Width of Travel Lane	10 ft.	11 ft.* (Greenbook) 10-12 ft**(AASHTO) 11 ft.*** (FDOT) ***Use 11 ft.****	*Greenbook, Table 3-7 **AASHTO, Chapter 6 ***FDOT PPM, Table 2.1.1
Bicycle Lane	N/A	4.0 ft.* (Greenbook) Varies (2ft. min.) **(AASHTO) 4.0 ft.*** (FDOT) ***Use 4 ft.****	*Greenbook, Ch. 3, sec. C.10.b **AASHTO, Chapter 2(Pg. 2-81) ***FDOT PPM, Table 2.1.2

Control / Design Element	Existing Roadway Elements	Minimum Design Controls & Standards	Documentation & References
Sidewalk	4-5 ft.	4 ft.* Min. (Greenbook) 5 ft. **(AASHTO)(ADA) 5 ft. (On Bridge)***(FDOT) ***Use 5 ft. min. sidewalk******	*Greenbook, Ch. 3, Sec. C.7.d. **AASHTO, Chapter 6 ***FDOT PPM, Figure 2.0.4
Shared Use Path (S.U.P.)	N/A	10 ft. (2-way only)*(Greenbook) N/A **(AASHTO) 6 ft. (1-way),10 ft.(2-way)*** FDOT ***N/A****	*Greenbook, Ch. 9, sec. C.2 **AASHTO Bicycle Handbook ***FDOT PPM, Sec. 8.6.2
Shoulder Width (Outside)	No Shoulder	8' *(Greenbook) 8' **(AASHTO) 16" (raised sidewalk), 8' min. long bridge***(FDOT) ***N/A****	*Greenbook, Table 3-8 **AASHTO, Exhibit 6-5. Ch. 6 ***FDOT PPM, Fig. 2.03, 2.04
Shoulder Width (Inside) Distance from travel lane to longitudinal barrier. For FDOT PPM and Greenbook, median shoulder only applies to multi-lane highways.	None	6' *(Greenbook) 4' **(AASHTO) 2'-6" with raised median / 6' flush shoulder*** (FDOT) ***N/A****	*Greenbook, Table 3-9 **AASHTO, Chapter 6, ***FDOT PPM, Fig. 2.0.4
Breakdown Vehicle Width on Travel Lane This is the width of the travel lane that can be used to accommodate a "break down" situation for a narrow shoulder.	N/A	[1' to 4'] encroachment onto travel lane is allowed for a narrow shoulder**(AASHTO) ***N/A****	**AASHTO, Chapter 4, "Width of Shoulders" Section 4.4.2
Cross Slope	Not Available	1.5% to 4%* (Greenbook) 1.5% to 3%** (AASHTO) 2% from crown*** (FDOT) ***Use 2% Cross Slope******	*Greenbook, Chapter 3, C.7.B.2 **AASHTO, Chapter 6, pg. 6-13 ***FDOT PPM, Figure 2.1.1
Roadside Slopes Anything steeper than 1:3 will need to be shielded per all references.	Not Available	1:4 or flatter* (Greenbook) 1:3 or flatter** (AASHTO) 1:2, not flatter than 1:6*** (FDOT) ***N/A****	*Greenbook, Ch. 3, sec. C.7.f.2 **AASHTO, Ch. 4, pg. 6-13 ***FDOT PPM, Table 2.1.1

Control / Design Element	Existing Roadway Elements	Minimum Design Controls & Standards	Documentation & References
Clear Zone Based on Design Speed.	N/A	10' (Rural), 4' (Urban)* (Greenbook) 14' (Rural), 1.5' back of face of curb (Urban)** 18' (Rural), 4' (Urban but not < 2.5')***(FDOT)) ***Use 4'****	*Greenbook, Table 3-12 **AASHTO Roadside Guideline Chapter 3 and Chapter 10 ***FDOT PPM, Chapter 4
Border Width Based on Design Speed.	Not Available	N/A *(Greenbook) 8 ft.**(AASHTO) 33' Rural, 12' Urban, 10' w/bike lane***(FDOT) ***Use 8 ft.***	*Greenbook, N/A **AASHTO, Chapter 8 *** FDOT PPM, Table 2.5.1, 2.5.2
Drop-Off Hazard For Vehicles and Cyclists on Road	N/A	Hazard when less than 22 ft. from traveled way, steeper than 1:3 slope and 6 ft. or greater drop.***(FDOT) ***Identify Hazards less than 22'/ steeper than 1/3 > 6' drop ******	*** FDOT PPM 2012, Section 4.2.2
Drop-Off Hazard For Pedestrians on Sidewalk	N/A	Case I: When Drop-off is > 10" and within 2 ft. of Back-of-Sidewalk. Case II: When Total Drop-off is > 60" and slope steeper than 1:2 and begins within 2 ft. of Back-of-Sidewalk *** (FDOT) ***Identify Hazards that meet Case I or II******	*** FDOT PPM 2012 Figure 8.8.1
Maximum Grade Based on Design Speed of 35 mph.	1.3 % max.	9% *(Greenbook) 9% **(AASHTO) 9% ***(FDOT PPM) 5% ****(ADA) ***Use 5% maximum grade********	*Greenbook, Table 3-4 **AASHTO, Exhibit 6-8 ***FDOT PPM, Tables 2.6.1 ****Americans with Disabilities Act (ADA)
Minimum Grade	0.2 % min.	0.3%*(Greenbook) 0.3%**(AASHTO) 0.3 %***(FDOT) ***Maintain 0.3% minimum grade****	*Greenbook Chapter 6, C.5.b **AASHTO Chapter 6, Pg 3-119 ***FDOT PPM, Table 2.6.4

Maximum change in grade w/out using vertical curve Based on Design Speed of 35 mph.	N/A	0.9%* (Greenbook) N/A **(AASHTO) 0.9%***(FDOT) ***Use 0.9%****	*Greenbook, Table 3-5 **N/A (AASHTO) ***FDOT PPM, Table 2.6.2
Control / Design Element	**Existing Roadway Elements**	**Minimum Design Controls & Standards**	**Documentation & References**
Minimum Length of Crest Vertical Curve Based on K-value. Based on Design Speed of 35 mph.	360' existing	K=47 but not L < 105* (Greenbook) K=29** (AASHTO) K=47 but not L < 105*** (FDOT) ***Use k=47 for minimum length******	*Greenbook, Table 3-6 **AASHTO, Table 3-34 ***FDOT PPM, Table 2.8.5
Minimum Length of Sag Vertical Curve Based on K-value. Based on Design Speed of 35 mph.	N/A	K=49 but not L < 105* (Greenbook) K=49**(AASHTO) K=49***(FDOT) ***Use k=49 for minimum length******	*Greenbook, Table 3-6 **AASHTO, Table 3-36 ***FDOT PPM, Table 2.8.6
Maximum Degree of Curvature Without Superelevation Based on Normal Cross Slope = -0.02. Based on Design Speed of 35 mph.	4 existing Curves: 28° - 1st curve 28° - 2nd curve 34° - 3rd curve 38° - 4th curve	N/A*(Greenbook) R=510'**(AASHTO) 5°***(FDOT) ***Maintain existing degree of curvature****	*Greenbook, N/A **AASHTO, Table 3-13 ***FDOT PPM, Table 2.8.4
Minimum Length of Horizontal Curve Based on Design Speed.	4 existing Curves: 14.84' – 1st curve 15.36' - 2nd curve 130' - 3rd curve 52.29' - 4th curve	N/A*(Greenbook) 500'**(AASHTO) 525' but not < 400'***(FDOT) ***Maintain existing length of curve****	*Greenbook, N/A **AASHTO, Ch. 3 Sec 3.3.13 ***FDOT PPM, Table 2.8.2a

Maximum Deflection without a Horizontal Curve Based on Design Speed of 35 mph.	N/A	2° ***(FDOT) ***Use 2 degrees ******	*** FDOT PPM, Table 2.8.1a
Control / Design Element	**Existing Roadway Elements**	**Minimum Design Controls & Standards**	**Documentation & References**
Traffic Control Through Work Zones (Minimum Regulatory Speed) FDOT states that the Regulatory Speed should never be below the minimum statutory speed for this facility. See "Design Speed". AASHTO follows MUTCD criteria.		20 mph & 30 mph Posted*** (FDOT) Existing Roadway Regulatory Speeds****(MUTCD) ***Use 20 mph & 30 mph posted speeds ******	*** FDOT Design Standards, Index 600 **** MUTCD, Chapter 6C
Traffic Control Through Work Zones (Clear Zone Width for Work Zones)		14' or 4' behind face of curb and gutter *** *(FDOT)* ***Use 14' or 4' behind face of curb and gutter ******	*** FDOT Design Standards, Index 600
Traffic Control Through Work Zones (Minimum Radii for Normal Cross Slope) Based on Design Speed.		610' ***(FDOT) ***Use 610' ******	*** FDOT Design Standards, Index 600
Traffic Control Through Work Zones (Minimum Lane Widths)		10' *** (FDOT) ***Use 10' ******	*** FDOT Design Standards, Index 600

References:

2013 FDOT Plans Preparation Manual
2013 FDOT Design Standards
2011 AASHTO "A Policy on Geometric Design of Highways and Streets"
2011 FDOT "Manual of Uniform Minimum Standards for Design, Construction, and Maintenance for Streets and Highways" (Green Book)
2011 AASHTO Roadside Design Guide
2009 Manual on Traffic Control Devices

Note: The latest adopted versions of all references will be used in final design.

APPENDIX E

Concept Plans and Profiles

PRELIMINARY
SUBJECT TO CHANGE

ECDriver & Associates
500 N. WESTSHORE BOULEVARD
SUITE 500
TAMPA, FL 33609
CERT. OF AUTHORIZATION #3838

Pinellas County

BECKETT BRIDGE (PD&E) STUDY
PINELLAS COUNTY PROJECT NO: PID 2161
FDOT FPN: 424385-1-28-01

DATE

PERMANENT REMOVAL OF BRIDGE
CONCEPT PLANS

SHEET NO.
1

EC DRIVER 8/20/2012 11:46:52 AM F:\5\99250 Beckett\roadway\lixi7 sheets\Bridgeclose_Planrd01.dgn

PRELIMINARY
SUBJECT TO CHANGE

1"=40'

BEGIN CONSTRUCTION

EXISTING
RIGHT OF WAY

RDWY TERMINATION
STA 135+74

SUBMERGED LANDS
EASEMENT

RDWY TERMINATION
STA 139+80

MATCHLINE STA. 134+60.00

MATCHLINE STA. 140+20.00

135 136 138 139 140

BRIDGE TO BE REMOVED

EXISTING
RIGHT OF WAY

SUBMERGED LANDS
EASEMENT

WHITCOMB BAYOU

LEGEND

→ DENOTES DIRECTION OF TRAVEL

ECDriver
500 N. WESTSHORE BOULEVARD
SUITE 500
TAMPA, FL 33609
CERT. OF AUTHORIZATION #3838

Pinellas County

BECKETT BRIDGE (PD&E) STUDY
PINELLAS COUNTY PROJECT NO: PID 2161
FDOT FPN: 424385-1-28-01

DATE

PERMANENT REMOVAL OF BRIDGE
CONCEPT PLANS

SHEET NO. 2

EC DRIVER 8/20/2012 11:47:25 AM F:\15\99250 Beckett\roadway\lixil sheets\Bridgeclose_Planrd01.dgn

PRELIMINARY
SUBJECT TO CHANGE

END CONSTRUCTION

PAMPAS AVE.

EXISTING
RIGHT OF WAY

140

141

142

143

144

145

VENETIAN CT.

EXISTING
RIGHT OF WAY

MATCHLINE STA. 140+20.00

MATCHLINE STA. 145+80.00

LEGEND

→ DENOTES DIRECTION OF TRAVEL

ECDriver
500 N. WESTSHORE BOULEVARD
SUITE 500
TAMPA, FL 33609
CERT. OF AUTHORIZATION #3838

Pinellas County

BECKETT BRIDGE (PD&E) STUDY
PINELLAS COUNTY PROJECT NO: PID 2161
FDOT FPN: 424385-1-28-01

DATE

PERMANENT REMOVAL OF BRIDGE
CONCEPT PLANS

SHEET NO. 3

EC DRIVER 8/20/2012 11:47:40 AM F:\15\99250 Beckett\roadway\11x17 sheets\Bridgeclose_Planrd01.dgn

PRELIMINARY
SUBJECT TO CHANGE

FOREST AVE.

END PROJECT

EXISTING
RIGHT OF WAY

146 147 148

MATCHLINE STA. 145+80.00

EXISTING
RIGHT OF WAY

1"=40'

LEGEND

DENOTES DIRECTION OF TRAVEL

ECDriver & ASSOCIATES
500 N. WESTSHORE BOULEVARD
SUITE 500
TAMPA, FL 33609
CERT. OF AUTHORIZATION #3838

Pinellas County

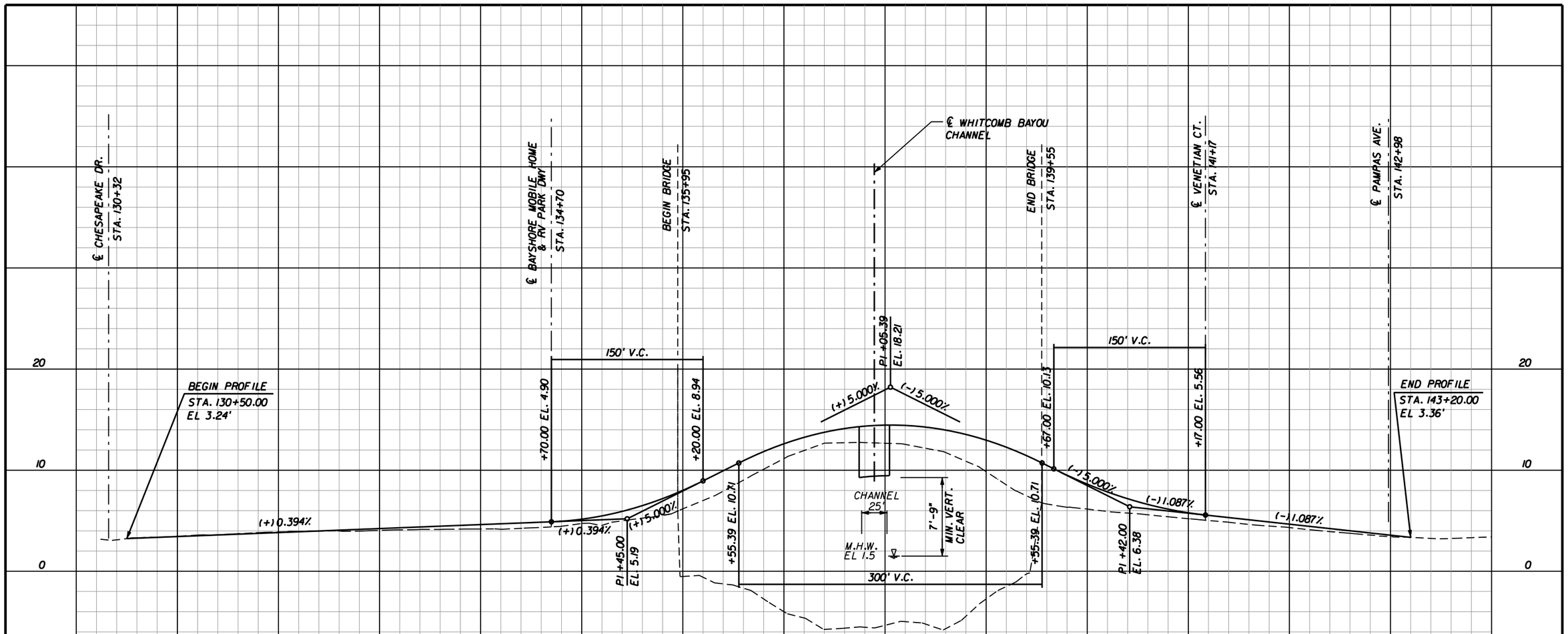
BECKETT BRIDGE (PD&E) STUDY
PINELLAS COUNTY PROJECT NO.: PID 2161
FDOT FPN: 424385-1-28-01

DATE

PERMANENT REMOVAL OF BRIDGE
CONCEPT PLANS

SHEET NO.
4

EC DRIVER 8/20/2012 11:48:27 AM F:\15\99250 Beckett\roadway\11x17 sheets\Bridgeclose_Planrd01.dgn



VERTICAL CURVES							
DESIGN SPEED (DS) = 35 MPH			MINIMUM LENGTH = 3 X(DS)=105'				
REQUIRED 'K" CREST				REQUIRED 'K" SAG			
AASHTO "K" = 29				AASHTO "K" =49			
FLA GREENBOOK "K" =47				FLA GREENBOOK "K"=49			
REQUIRED LENGTHS OF VERTICAL CURVES (L)=KxA, A=G1-G2							
TYPE	G1	G2	LENGTH	TYPE	G1	G2	LENGTH
CREST	(+) 5.000%	(-) 5.000%	290' (AASHTO)	SAG	(+) 0.394%	(+) 5.000%	226' (AASHTO)
			470' (Fla Greenbook)				226' (Fla Greenbook)
				SAG	(-) 5.000%	(-) 1.087%	192' (AASHTO)
							192' (FLA Greenbook)

SCALE: 1" = 100' HORIZ.
1" = 10' VERT.

ECDriver & Associates
500 N. WESTSHORE BOULEVARD
SUITE 500
TAMPA, FL 33609
CERT. OF AUTHORIZATION #3838

Pinellas County

BECKETT BRIDGE (PD&E) STUDY
PINELLAS COUNTY PROJECT NO.: PID 2161

DATE

BECKETT BRIDGE PROFILE
LOW LEVEL MOVABLE BRIDGE ALTERNATIVE

SHEET NO.

PRELIMINARY
SUBJECT TO CHANGE

BEGIN PROJECT

CHESAPEAKE DR.

EXISTING
RIGHT OF WAY

PROP. SIDEWALK

1"=40'

129 130 131 132 133 134

MATCHLINE STA. 134+60.00

EXISTING
RIGHT OF WAY

LEGEND

DENOTES DIRECTION OF TRAVEL

ECDriver & ASSOCIATES
500 N. WESTSHORE BOULEVARD
SUITE 500
TAMPA, FL 33609
CERT. OF AUTHORIZATION #3838

Pinellas County

BECKETT BRIDGE (PD&E) STUDY
PINELLAS COUNTY PROJECT NO: PID 2161
FDOT FPN: 424385-1-28-01

DATE

LOW-LEVEL MOVABLE BRIDGE ALTERNATIVE
CONCEPT PLANS

SHEET NO.
1

EC DRIVER 1/4/2013 2:48:11 PM F:\5199250 Beckett\roadway\lixi7 sheets\Lowlevel_Plonrd01.dgn

PRELIMINARY
SUBJECT TO CHANGE

1"=40'

EXISTING RIGHT OF WAY

BEGIN BRIDGE
STA 135+95

PROP. SIDEWALK

SUBMERGED LANDS EASEMENT

END BRIDGE
STA 139+55

MATCHLINE STA. 134+60.00

135 136 137 138 139 140

MATCHLINE STA. 140+20.00

EXISTING RIGHT OF WAY

SUBMERGED LANDS EASEMENT

WHITCOMB BAYOU

PROP. SIDEWALK

LEGEND

→ DENOTES DIRECTION OF TRAVEL

ECDriver & ASSOCIATES
500 N. WESTSHORE BOULEVARD
SUITE 500
TAMPA, FL 33609
CERT. OF AUTHORIZATION #3838

Pinellas County

BECKETT BRIDGE (PD&E) STUDY
PINELLAS COUNTY PROJECT NO: PID 2161
FDOT FPN: 424385-1-28-01

DATE

LOW-LEVEL MOVABLE BRIDGE ALTERNATIVE CONCEPT PLANS

SHEET NO. 2

EC DRIVER 1/4/2013 2:48:32 PM F:\5\99250 Beckett\roadway\lixi7 sheets\Lowlevel_Planrd01.dgn

PRELIMINARY
SUBJECT TO CHANGE

PAMPAS AVE.

BEGIN RESURFACING

PROP. SIDEWALK

EXISTING
RIGHT OF WAY

143

142

144

141

145

PROP. SIDEWALK

EXISTING
RIGHT OF WAY

VENETIAN CT.

MATCHLINE STA. 140+20.00

MATCHLINE STA. 145+80.00

LEGEND

→ DENOTES DIRECTION OF TRAVEL

EC Driver & Associates
500 N. WESTSHORE BOULEVARD
SUITE 500
TAMPA, FL 33609
CERT. OF AUTHORIZATION #3838

Pinellas County

BECKETT BRIDGE (PD&E) STUDY
PINELLAS COUNTY PROJECT NO: PID 2161
FDOT FPN: 424385-1-28-01

DATE

LOW-LEVEL MOVABLE BRIDGE ALTERNATIVE CONCEPT PLANS

SHEET NO. 3

EC DRIVER 1/4/2013 2:48:52 PM F:\V5\99250 Beckett\roadway\lixi7 sheets\Lowlevel_Planrd01.dgn

PRELIMINARY
SUBJECT TO CHANGE

ECDriver & ASSOCIATES 500 N. WESTSHORE BOULEVARD SUITE 500 TAMPA, FL 33609 CERT. OF AUTHORIZATION #3838	Pinellas County	BECKETT BRIDGE (PD&E) STUDY PINELLAS COUNTY PROJECT NO.: PID 2161 FDOT FPN: 424385-1-28-01	DATE	LOW-LEVEL MOVABLE BRIDGE ALTERNATIVE CONCEPT PLANS SHEET NO. 4

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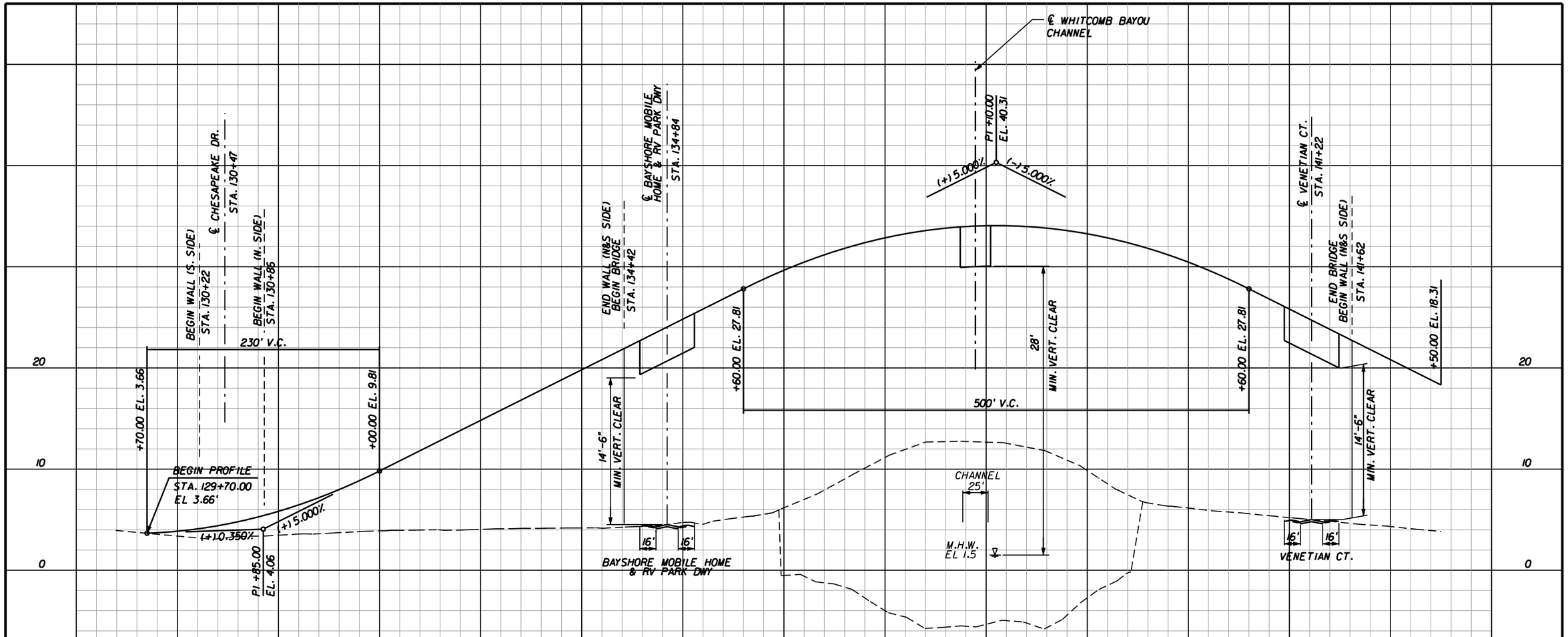


VERTICAL CURVES							
DESIGN SPEED (DS) = 35 MPH			MINIMUM LENGTH = 3 X(DS)=105'				
REQUIRED 'K" CREST			REQUIRED 'K" SAG				
AASHTO "K" = 29			AASHTO "K" =49				
FLA GREENBOOK "K" =47			FLA GREENBOOK "K"=49				
REQUIRED LENGTHS OF VERTICAL CURVES (L)=KxA, A=G1-G2							
TYPE	G1	G2	LENGTH	TYPE	G1	G2	LENGTH
CREST	(+) 5.000%	(-) 5.000%	290' (AASHTO)	SAG	(+) 0.350%	(+) 5.000%	228' (AASHTO)
			470' (Fla Greenbook)				228' (Fla Greenbook)
				SAG	(-) 5.000%	(-) 0.583%	217' (AASHTO)
							217' (FLA Greenbook)

SCALE: 1" = 100' HORIZ.
1" = 10' VERT.

ECDriver & Associates
500 N. WESTSHORE BOULEVARD
SUITE 500
TAMPA, FL 33609
CERT. OF AUTHORIZATION #3838

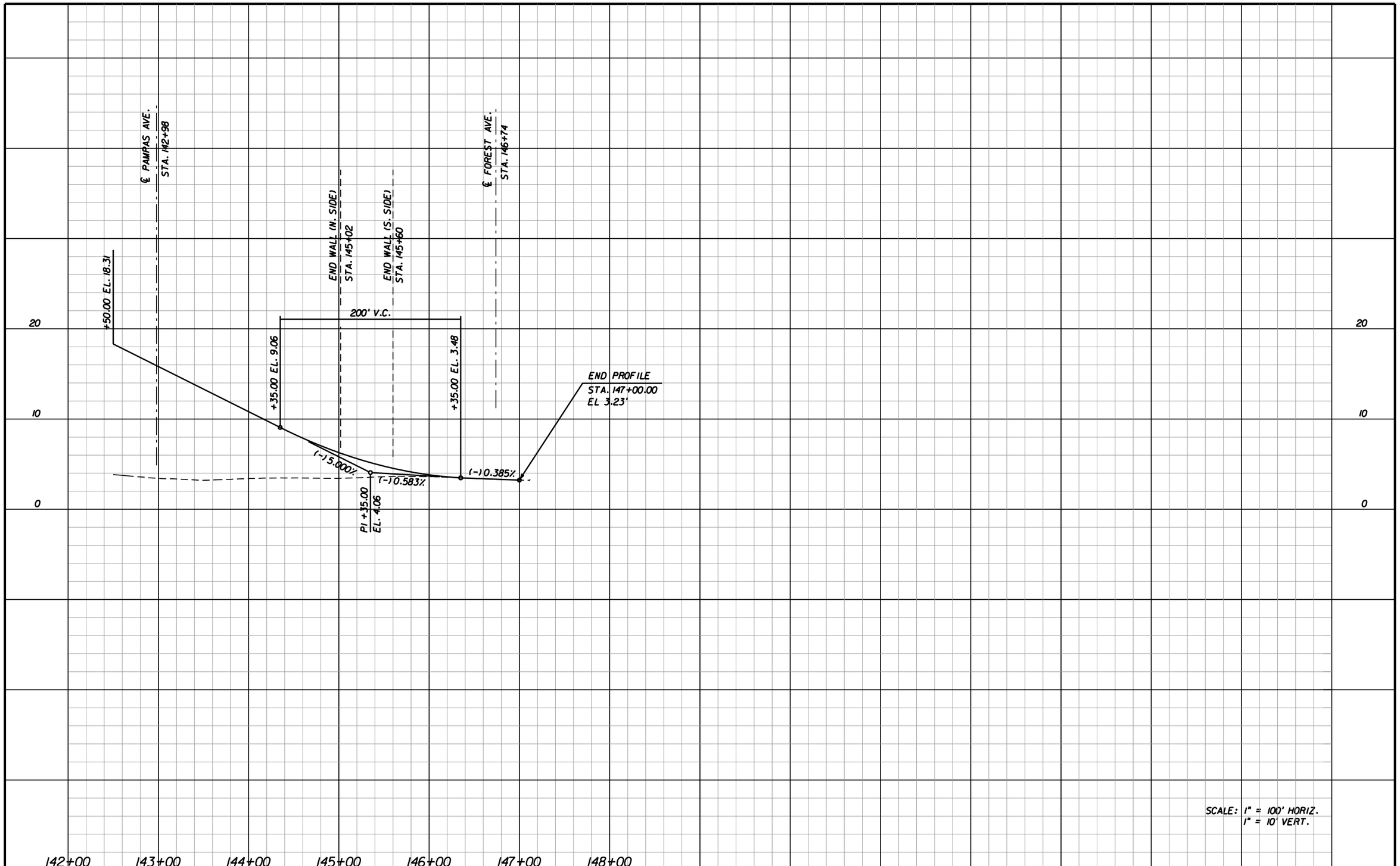
Pinellas County

BECKETT BRIDGE (PD&E) STUDY
PINELLAS COUNTY PROJECT NO.: PID 2161

DATE

BECKETT BRIDGE PROFILE
MID-LEVEL FIXED BRIDGE ALTERNATIVE A

SHEET NO. 1



SCALE: 1" = 100' HORIZ.
1" = 10' VERT.

ECDriver & Associates
500 N. WESTSHORE BOULEVARD
SUITE 500
TAMPA, FL 33609
CERT. OF AUTHORIZATION #3838

Pinellas County

BECKETT BRIDGE (PD&E) STUDY
PINELLAS COUNTY PROJECT NO.: PID 2161

DATE

BECKETT BRIDGE PROFILE
MID-LEVEL FIXED BRIDGE ALTERNATIVE A

SHEET NO. 2

EC DRIVER 1/4/2013 5:40:38 PM F:\V5199250 Beckett\roadway\002_Midlevel_OptA\Option3a_PROFRD03a_35MPH.dgn

PRELIMINARY
SUBJECT TO CHANGE

PROPOSED
RIGHT OF WAY

(BAYSHORE MHP ACCESS RD.)

CHESAPEAKE DR.

1"=40'

BEGIN PROJECT

BEGIN WALL

EXISTING
RIGHT OF WAY

PROP. SIDEWALK

END WALL

BEGIN BRIDGE
STA 134+42

129 130 131 132 133 134

MATCHLINE STA. 134+60.00

BEGIN WALL

EXISTING
RIGHT OF WAY

END WALL

LEGEND

DENOTES DIRECTION OF TRAVEL

ECDriver & ASSOCIATES
500 N. WESTSHORE BOULEVARD
SUITE 500
TAMPA, FL 33609
CERT. OF AUTHORIZATION #3838

Pinellas County

BECKETT BRIDGE (PD&E) STUDY
PINELLAS COUNTY PROJECT NO: PID 2161
FDOT FPN: 424385-1-28-01

DATE

MID-LEVEL FIXED BRIDGE OPTION A
CONCEPT PLANS

SHEET NO.
1

EC DRIVER 1/7/2013 3:38:30 PM F:\V5\99250 Beckett\roadway\lixi7 sheets\Mildevel_OptA_PlanrdOl.dgn

PRELIMINARY
SUBJECT TO CHANGE

PROPOSED
RIGHT OF WAY

EXISTING
RIGHT OF WAY

PROP. SIDEWALK

SUBMERGED LANDS
EASEMENT

1"=40'

MATCHLINE STA. 134+60.00

135 136 137 138 139 140

MATCHLINE STA. 140+20.00

EXISTING
RIGHT OF WAY

SUBMERGED LANDS
EASEMENT

WHITCOMB BAYOU

LEGEND

→ DENOTES DIRECTION OF TRAVEL

ECDriver & ASSOCIATES
500 N. WESTSHORE BOULEVARD
SUITE 500
TAMPA, FL 33609
CERT. OF AUTHORIZATION #3838

Pinellas County

BECKETT BRIDGE (PD&E) STUDY
PINELLAS COUNTY PROJECT NO: PID 2161
FDOT FPN: 424385-1-28-01

DATE

MID-LEVEL FIXED BRIDGE OPTION A
CONCEPT PLANS

SHEET NO. 2

EC DRIVER 1/7/2013 3:39:42 PM F:\5\99250 Beckett\roadway\lix17 sheets\MIdlevel_OptA_Planrd01.dgn

PRELIMINARY
SUBJECT TO CHANGE

PROPOSED
RIGHT OF WAY

BEGIN WALL

END BRIDGE
STA 141+62

(VENETIAN CT. EXT.)

R140'

PROP. SIDEWALK

PAMPAS AVE.

PROPOSED
RIGHT OF WAY

EXISTING
RIGHT OF WAY

PROP. SIDEWALK

END WALL

141

142

143

144

145

PROPOSED
RIGHT OF WAY

EXISTING
RIGHT OF WAY

BEGIN WALL

END WALL

VENETIAN CT.

MATCHLINE STA. NO+20.00

MATCHLINE STA. 145+80.00

LEGEND

→ DENOTES DIRECTION OF TRAVEL

EC Driver & Associates
500 N. WESTSHORE BOULEVARD
SUITE 500
TAMPA, FL 33609
CERT. OF AUTHORIZATION #3838

Pinellas County

BECKETT BRIDGE (PD&E) STUDY
PINELLAS COUNTY PROJECT NO: PID 2161
FDOT FPN: 424385-1-28-01

DATE

MID-LEVEL FIXED BRIDGE OPTION A
CONCEPT PLANS

SHEET NO. 3

EC DRIVER 1/7/2013 3:40:06 PM F:\15\99250 Beckett\roadway\11x17 sheets\11dlevel_OptA_Planrd01.dgn

PRELIMINARY
SUBJECT TO CHANGE

PROPOSED
RIGHT OF WAY

PROP. SIDEWALK

FOREST AVE.

END PROJECT

EXISTING
RIGHT OF WAY

1"=40'

MATCHLINE STA. 145+80.00

146

148

EXISTING
RIGHT OF WAY

LEGEND

DENOTES DIRECTION OF TRAVEL

ECDriver & ASSOCIATES
500 N. WESTSHORE BOULEVARD
SUITE 500
TAMPA, FL 33609
CERT. OF AUTHORIZATION #3838

Pinellas County

BECKETT BRIDGE (PD&E) STUDY
PINELLAS COUNTY PROJECT NO: PID 2161
FDOT FPN: 424385-1-28-01

DATE

MID-LEVEL FIXED BRIDGE OPTION A
CONCEPT PLANS

SHEET NO.
4

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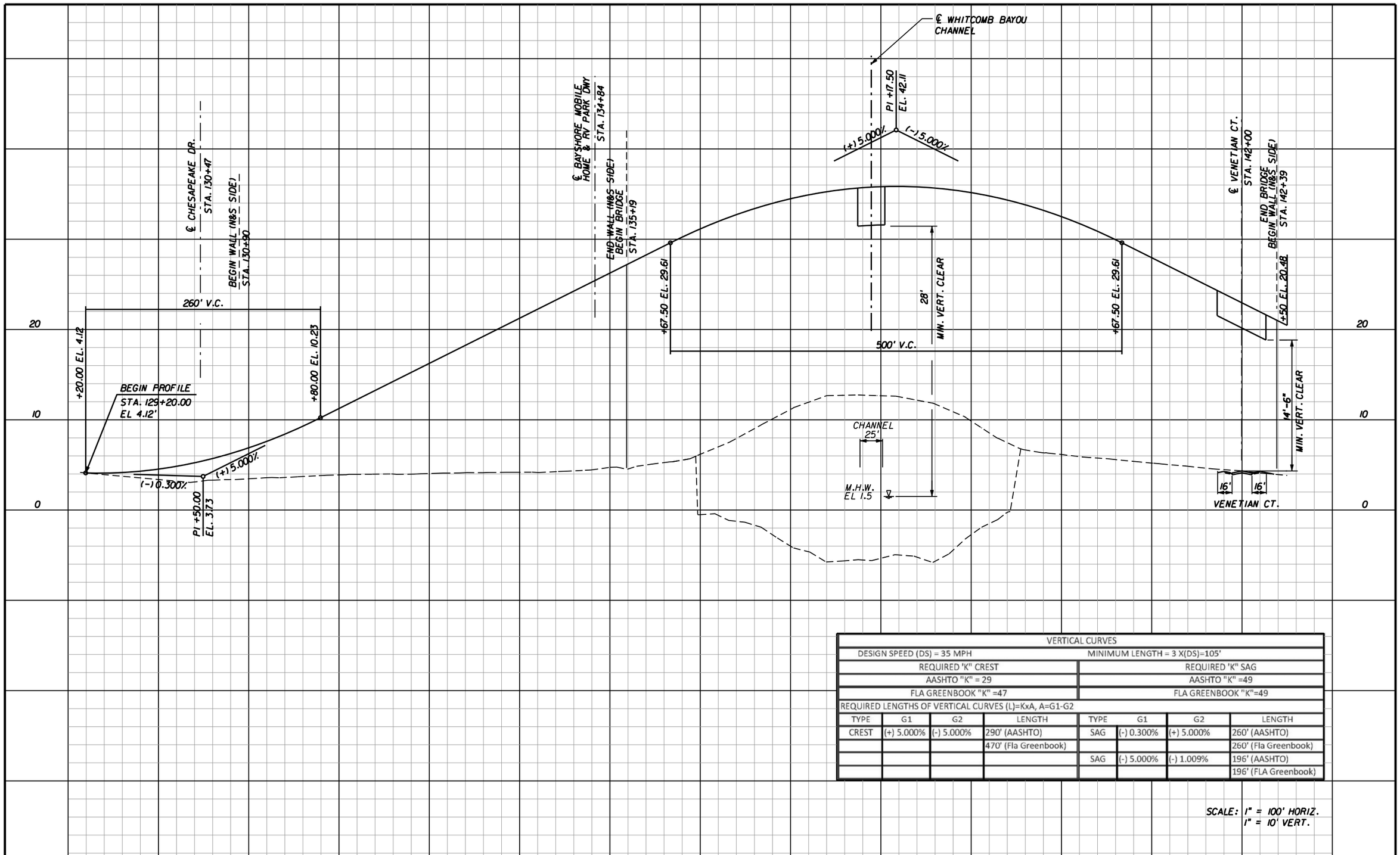


VERTICAL CURVES							
DESIGN SPEED (DS) = 35 MPH			MINIMUM LENGTH = 3 X(DS)=105'				
REQUIRED 'K" CREST				REQUIRED 'K" SAG			
AASHTO "K" = 29				AASHTO "K" =49			
FLA GREENBOOK "K" =47				FLA GREENBOOK "K"=49			
REQUIRED LENGTHS OF VERTICAL CURVES (L)=KxA, A=G1-G2							
TYPE	G1	G2	LENGTH	TYPE	G1	G2	LENGTH
CREST	(+) 5.000%	(-) 5.000%	290' (AASHTO)	SAG	(-) 0.300%	(+) 5.000%	260' (AASHTO)
			470' (Fla Greenbook)				260' (Fla Greenbook)
				SAG	(-) 5.000%	(-) 1.009%	196' (AASHTO)
							196' (FLA Greenbook)

SCALE: 1" = 100' HORIZ.
1" = 10' VERT.

ECDriver & Associates
500 N. WESTSHORE BOULEVARD
SUITE 500
TAMPA, FL 33609
CERT. OF AUTHORIZATION #3838

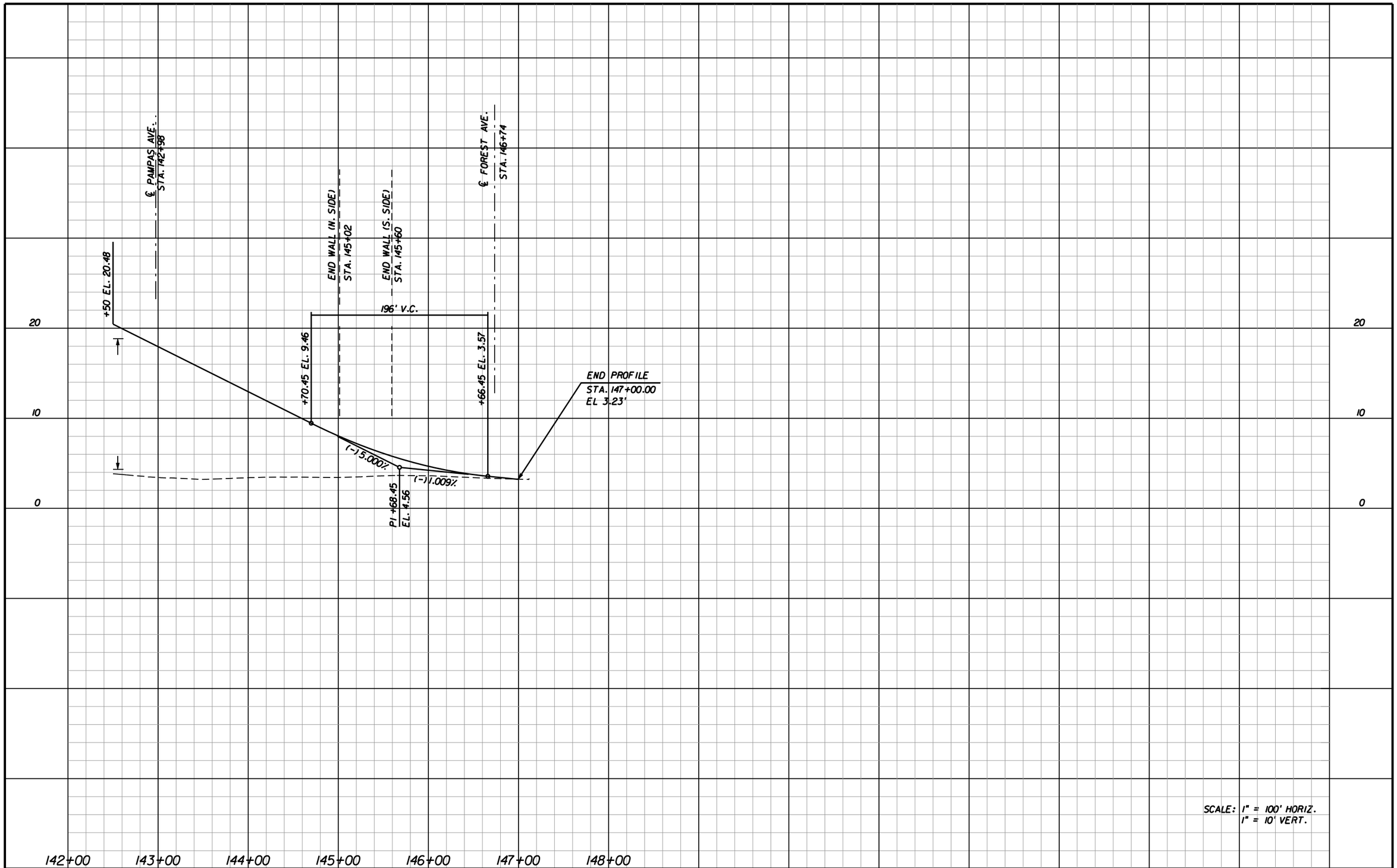
Pinellas County

BECKETT BRIDGE (PD&E) STUDY
PINELLAS COUNTY PROJECT NO.: PID 2161

DATE

BECKETT BRIDGE PROFILE
MID-LEVEL FIXED BRIDGE ALTERNATIVE B

SHEET NO. 1



SCALE: 1" = 100' HORIZ.
1" = 10' VERT.

ECDriver & Associates
500 N. WESTSHORE BOULEVARD
SUITE 500
TAMPA, FL 33609
CERT. OF AUTHORIZATION #3838

Pinellas County

BECKETT BRIDGE (PD&E) STUDY
PINELLAS COUNTY PROJECT NO.: PID 2161

DATE

BECKETT BRIDGE PROFILE
MID-LEVEL FIXED BRIDGE ALTERNATIVE B

SHEET NO. **2**

PRELIMINARY
SUBJECT TO CHANGE

PROPOSED
RIGHT OF WAY

NEW ACCESS RD.

CHESAPEAKE DR.

1"=40'

BEGIN PROJECT

EXISTING
RIGHT OF WAY

BEGIN WALL

PROP. SIDEWALK

129 130 131 132 133 134

MATCHLINE STA. 134+60.00

R 50'

100' R

20' R

100' R

BEGIN WALL

EXISTING
RIGHT OF WAY

PROPOSED
RIGHT OF WAY

100' R

20' R

100' R

PROPOSED
RIGHT OF WAY

LEGEND

DENOTES DIRECTION OF TRAVEL

R 60'

ECDriver & Associates
500 N. WESTSHORE BOULEVARD
SUITE 500
TAMPA, FL 33609
CERT. OF AUTHORIZATION #3838

Pinellas County

BECKETT BRIDGE (PD&E) STUDY
PINELLAS COUNTY PROJECT NO: PID 2161
FDOT FPN: 424385-1-28-01

DATE

MID-LEVEL FIXED BRIDGE OPTION B
CONCEPT PLANS

SHEET NO.
1

EC DRIVER 1/7/2013 3:26:19 PM F:\15\99250 Beckett\roadway\lixil sheets\Mldlevel_OptB_Plnrd01.dgn

PRELIMINARY
SUBJECT TO CHANGE

1"=40'

EXISTING RIGHT OF WAY

END WALL

BEGIN BRIDGE
STA 135+19

PROP. SIDEWALK

SUBMERGED LANDS EASEMENT

MATCHLINE STA. 134+60.00

135 136 137 138 139 140

MATCHLINE STA. 140+20.00

END WALL

EXISTING RIGHT OF WAY

SUBMERGED LANDS EASEMENT

WHITCOMB BAYOU

LEGEND

→ DENOTES DIRECTION OF TRAVEL

ECDriver & ASSOCIATES
500 N. WESTSHORE BOULEVARD
SUITE 500
TAMPA, FL 33609
CERT. OF AUTHORIZATION #3838

Pinellas County

BECKETT BRIDGE (PD&E) STUDY
PINELLAS COUNTY PROJECT NO: PID 2161
FDOT FPN: 424385-1-28-01

DATE

MID-LEVEL FIXED BRIDGE OPTION B
CONCEPT PLANS

SHEET NO. 2

EC DRIVER 1/7/2013 3:28:49 PM F:\5\99250 Beckett\roadway\dist7 sheets\MIdlevel_OptB_Planrd01.dgn

PRELIMINARY
SUBJECT TO CHANGE

PROPOSED
RIGHT OF WAY

100' R

(VENETIAN CT. EXT.)

PAMPAS AVE.

BEGIN WALL

END BRIDGE
STA 142+39

PROP. SIDEWALK

PROPOSED
RIGHT OF WAY

EXISTING
RIGHT OF WAY

PROP. SIDEWALK

END WALL

142

143

144

145

141

MATCHLINE STA. 140+80.00

MATCHLINE STA. 145+80.00

BEGIN WALL

EXISTING
RIGHT OF WAY

PROPOSED
RIGHT OF WAY

END WALL

VENETIAN CT.

95' R

LEGEND

→ DENOTES DIRECTION OF TRAVEL

ECDriver & ASSOCIATES 500 N. WESTSHORE BOULEVARD SUITE 500 TAMPA, FL 33609 CERT. OF AUTHORIZATION #3838	Pinellas County	BECKETT BRIDGE (PD&E) STUDY PINELLAS COUNTY PROJECT NO: PID 2161 FDOT FPN: 424385-1-28-01	DATE	MID-LEVEL FIXED BRIDGE OPTION B CONCEPT PLANS	SHEET NO. 3

EC DRIVER 1/7/2013 3:29:09 PM F:\V5\99250 Beckett\roadway\lixi7 sheets\Mldlevel_OptB_Pionrd01.dgn

PRELIMINARY
SUBJECT TO CHANGE

PROPOSED
RIGHT OF WAY

PROP. SIDEWALK

FOREST AVE.

END PROJECT

EXISTING
RIGHT OF WAY

1"=40'

MATCHLINE STA. 145+80.00

146

148

EXISTING
RIGHT OF WAY

LEGEND

DENOTES DIRECTION OF TRAVEL

ECDriver & ASSOCIATES
500 N. WESTSHORE BOULEVARD
SUITE 500
TAMPA, FL 33609
CERT. OF AUTHORIZATION #3838

Pinellas County

BECKETT BRIDGE (PD&E) STUDY
PINELLAS COUNTY PROJECT NO: PID 2161
FDOT FPN: 424385-1-28-01

DATE

MID-LEVEL FIXED BRIDGE OPTION B
CONCEPT PLANS

SHEET NO.
4

EC DRIVER 1/7/2013 3:29:27 PM F:\V5\99250 Beckett\roadway\lixi7 sheets\MIdlevel_OptB_PlanrdOl.dgn

APPENDIX F

SHPO and FHWA Email Correspondence

From: McManus, Alyssa M.
To: Venables, Ann
Cc: Linda.Anderson@dot.gov; Spain-Schwarz, Rebecca
Subject: RE: Beckett Bridge
Date: Friday, August 02, 2013 10:01:04 AM
Attachments: image001.png
image003.png

We just met and we all agree we have been provided ample evidence as to why the new bridge would be preferable to the rehab. So, now, yes. Let's move forward with some mitigation ideas? Would that be next? To be honest, I have forgotten if anyone is holding onto anything for a signature at this time.

We are going to request that a HAER be done as a part of the mitigation. Aside from that, we are open to ideas, and look forward to further consultation.

Alyssa McManus
Bureau of Historic Preservation | Architectural Historian | Division of Historical Resources | Florida Department of State | 500 South Bronough Street | Tallahassee, Florida 32399 | 850.245.6368 | 1.800.847.7278 | Fax: 850.245.6437 |
Alyssa.McManus@dos.myflorida.com | www.flheritage.com

From: Venables, Ann [mailto:ann.venables@urs.com]
Sent: Friday, August 02, 2013 8:13 AM
To: McManus, Alyssa M.
Cc: Phillips, Jim; Tony Horrnik (thorrnik@co.pinellas.fl.us)
Subject: RE: Beckett Bridge

Thanks for the update Alyssa. We would really like to move forward.

Sincerely,

Ann

From: McManus, Alyssa M. [mailto:Alyssa.McManus@DOS.MyFlorida.com]
Sent: Friday, August 02, 2013 7:42 AM
To: Venables, Ann
Subject: Beckett Bridge

Good Morning!

Dan and I will be meeting with Rob Bendus and Tim Parsons this morning about the bridge. I will get

back to you afterward.

Alyssa McManus
Bureau of Historic Preservation | Architectural Historian | Division of Historical Resources | Florida Department of State | 500 South Bronough Street | Tallahassee, Florida 32399 | 850.245.6368 | 1.800.847.7278 | Fax: 850.245.6437 |
Alyssa.McManus@dos.myflorida.com | www.flheritage.com

@ItsWorkingFL

The Department of State is leading the commemoration of Florida's 500th anniversary in 2013. For more information, please go to http://www.vivaflorida.org.

The Department of State is committed to excellence.
Please take our Customer Satisfaction Survey.

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From:	Rhinesmith, Robin
To:	Venables, Ann
Subject:	FW: Beckett Bridge FPID 424385-1-28-01
Date:	Tuesday, September 17, 2013 5:18:50 PM

fyi

Sincerely,

Robin M. Rhinesmith

Environmental Administrator
Intermodal Systems Development
District Seven
(813)975-6496 phone
(813) 975-6443 fax

robin.rhinesmith@dot.state.fl.us

From: Nahir.DeTizio@dot.gov [mailto:Nahir.DeTizio@dot.gov]
Sent: Tuesday, September 17, 2013 3:45 PM
To: Rhinesmith, Robin
Cc: Linda.Anderson@dot.gov; Benito.Cunill@dot.gov; Bogen, Kirk
Subject: Beckett Bridge FPID 424385-1-28-01

Robin:

Per our conversation this morning, here I am providing a response regarding Beckett Bridge replacement PD&E.

Ann Venables, on behalf of FDOT and Pinellas County, requested our concurrence for the County to select a recommended alternative that would consist of a new bascule bridge alternative instead of a fixed bridge alternative. At this time, the PD&E Study is being developed and the Public Hearing has not been held.

In accordance with 23CFR650.809:

§ 650.809 Movable span bridges.

A fixed bridge shall be selected wherever practicable. If there are social, economic, environmental or engineering reasons which favor the selection of a movable bridge, a cost benefit analysis to support the need for the movable bridge shall he prepared as a part of the preliminary plans.

As requested by FHWA, Ann submitted a Life-Cycle cost analysis. In coordination with Jeffrey Ger, Linda Anderson asked Ann that ROW and relocation costs for the Fixed Options be added to the life cycle cost spread sheet to show the true costs for the Fixed Options, versus the locally preferred option, which is the Low-Level Bascule Bridge. That information was submitted to our office and it still showed the two fixed bridge alternatives as more economical.

It is important to note that as included in their Life-Cycle cost analysis document:

"Furthermore, only direct (capital) costs were considered in the analysis; indirect (non-capital) costs such as user delay and accident costs were not included in the analysis. These costs are difficult to accurately quantify and are considered somewhat subjective. In all alternatives, indirect costs support the decision to replace the bridge now. Costs associated with user delays and accidents are anticipated to decrease with improvements in the facility (e.g., improved roadway geometry that decreases accidents.)"

Also note that the mitigation costs for the fixed alternatives (described by the USCG) need to be added to the Life-Cycle cost analysis to more closely approximate their true costs.

In addition to the Life-Cycle costs analysis, there was other information submitted for our evaluation:

- We received a summary of the number of comments received in response to the alternatives presented at the Alternatives Workshop held on January 23, 2013. Based on the results, the movable bridge alternative received more support from the locals.
- Based on their July 26, 2013 e-mail to Ann Venables, the U.S. Coast Guard (USCG) indicated the following:

  Based on the Alternatives Public Workshop and Boat Survey, the Coast Guard has no objection to eliminating the two fixed bridge alternatives. It is the opinion of the Coast Guard that the two fixed bridge alternatives do not meet the reasonable needs of navigation.

- USCG also stated in a September 6, 2013 e-mail to us that, with the fixed alternatives, owners whose boats could not pass under the bridge would need to be compensated with some form of mitigation—buy the boat, retrofit it, etc. That information should be included in the Life-Cycle cost analysis.
- We also received information about the long touch downs and large structure necessary in the fixed bridge alternatives considered. A bridge that would allow all sail boats to pass under it would have to have even greater vertical clearance and so would be even higher, longer, and more massive.

At this time, since the PD&E is underway and a Public Hearing has not been held, FHWA's recommendation is to allow the County to pursue the movable bridge alternative with the understanding that we will not approve any build alternative until the public has been shown all the alternatives at the hearing. The amount of alternative development that has occurred to date to arrive at the conclusion that some alternatives are not reasonable and feasible is probably sufficient. That information, including the updated Life-Cycle cost analysis, needs to be presented in the environmental document in careful detail, as well as at the hearing. NEPA requirements must be followed and FHWA does not approve the build alternative until after the public hearing.

Robin, do you know the status of the draft CEII document? Please send it to us when available.

Please let me, Linda or Buddy know if there are any questions.

Thanks,

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APPENDIX G

Survey Log Sheet

Ent D (FMSF only)_____

Survey Log Sheet

Florida Master Site File
Version 4.1 1/07

Survey # (FMSF only) _____

Consult *Guide to the Survey Log Sheet* for detailed instructions.

Identification and Bibliographic Information

Survey Project (name and project phase) Cultural Resource Section 106 Effects Consultation Case Study Report for Beckett Bridge

Report Title (exactly as on title page) Cultural Resource Section 106 Effects Consultation Case Study Report for Beckett Bridge Project Development and Environment (PD&E) Study from Chesapeake Drive to Forest Avenue, Tarpon Springs, Pinellas County, Florida

Report Authors (as on title page, last names first) 1. Janus Research 3. _____ 2. _____ 4. _____

Publication Date (year) 2014 **Total Number of Pages in Report** (count text, figures, tables, not site forms) 61

Publication Information (Give series, number in series, publisher and city. For article or chapter, cite page numbers. Use the style of *American Antiquity*.)
Janus Research, 1107 N. Ward Street, Tampa FL 33607

Supervisors of Fieldwork (even if same as author) Names Amy Streelman

Affiliation of Fieldworkers: Organization Janus Research City Tampa, Florida

Key Words/Phrases (Don't use county name, or common words like *archaeology*, *structure*, *survey, architecture, etc.*)

1. Section 106 3. Beckett Bridge 5. Forest Avenue 7. _____
2. Effects 4. Chesapeake Drive 6. _____ 8. _____

Survey Sponsors (corporation, government unit, organization or person directly funding fieldwork)

Name Pinellas County Organization Other

Address/Phone/E-mail 14 South Ft Harrison Avenue, Clearwater, FL 33756

Recorder of Log Sheet Janus Research **Date Log Sheet Completed** 5-27-2014

Is this survey or project a continuation of a previous project? ☐ No ☒ Yes: **Previous survey #s (FMSF only)** _____

Mapping

Counties (List each one in which field survey was done; attach additional sheet if necessary)

1. Pinellas 3. _____ 5. _____
2. _____ 4. _____ 6. _____

USGS 1:24,000 Map Names/Year of Latest Revision (attach additional sheet if necessary)

1. Name TARPON SPRINGS Year 1987 4. Name _____ Year _____
2. Name _____ Year _____ 5. Name _____ Year _____
3. Name _____ Year _____ 6. Name _____ Year _____

Description of Survey Area

Dates for Fieldwork: Start _____ End _____ **Total Area Surveyed** (fill in one) _____ hectares 0.00 acres

Number of Distinct Tracts or Areas Surveyed _____

If Corridor (fill in one for each) **Width:** _____ meters 30 feet **Length:** _____ kilometers 0.00 miles

Survey Log Sheet

Survey #_____

Research and Field Methods

Types of Survey (check all that apply): ☐archaeological ☒architectural ☐historical/archival ☐underwater ☐damage assessment ☐monitoring report ☐other(describe): _____

Scope/Intensity/Procedures Section 106 Evaluation and Determination of Effects for a National Register-eligible bridge

Preliminary Methods (check as many as apply to the project as a whole)

☐Florida Archives (Gray Building)	☐library research- *local public*	☐local property or tax records	☐other historic maps
☐Florida Photo Archives (Gray Building)	☐library-special collection - *nonlocal*	☐newspaper files	☐soils maps or data
☒Site File property search	☐Public Lands Survey (maps at DEP)	☐literature search	☒windshield survey
☒Site File survey search	☒local informant(s)	☐Sanborn Insurance maps	☒aerial photography

☒other (describe): Janus Library

Archaeological Methods (check as many as apply to the project as a whole)

☒Check here if **NO** archaeological methods were used.

☐surface collection, controlled	☐shovel test-other screen size	☐block excavation (at least 2x2 m)
☐surface collection, **un**controlled	☐water screen	☐soil resistivity
☐shovel test-1/4"screen	☐posthole tests	☐magnetometer
☐shovel test-1/8" screen	☐auger tests	☐side scan sonar
☐shovel test 1/16"screen	☐coring	☐pedestrian survey
☐shovel test-unscreened	☐test excavation (at least 1x2 m)	☐unknown

☐other (describe): _____

Historical/Architectural Methods (check as many as apply to the project as a whole)

☐Check here if **NO** historical/architectural methods were used.

☐building permits	☐demolition permits	☐neighbor interview	☐subdivision maps
☐commercial permits	☐exposed ground inspected	☐occupant interview	☐tax records
☐interior documentation	☐local property records	☐occupation permits	☐unknown

☒other (describe): Pedestrian survey of project APE

Survey Results (cultural resources recorded)

Site Significance Evaluated? ☒Yes ☐No

Count of Previously Recorded Sites 1 **Count of Newly Recorded Sites** 0

Previously Recorded Site #'s with Site File Update Forms (List site #'s without "8". Attach additional pages if necessary.) PI12017

Newly Recorded Site #'s (Are all originals and not updates? List site #'s without "8". Attach additional pages if necessary.) _____

Site Forms Used: ☐Site File Paper Form ☒Site File Electronic Recording Form

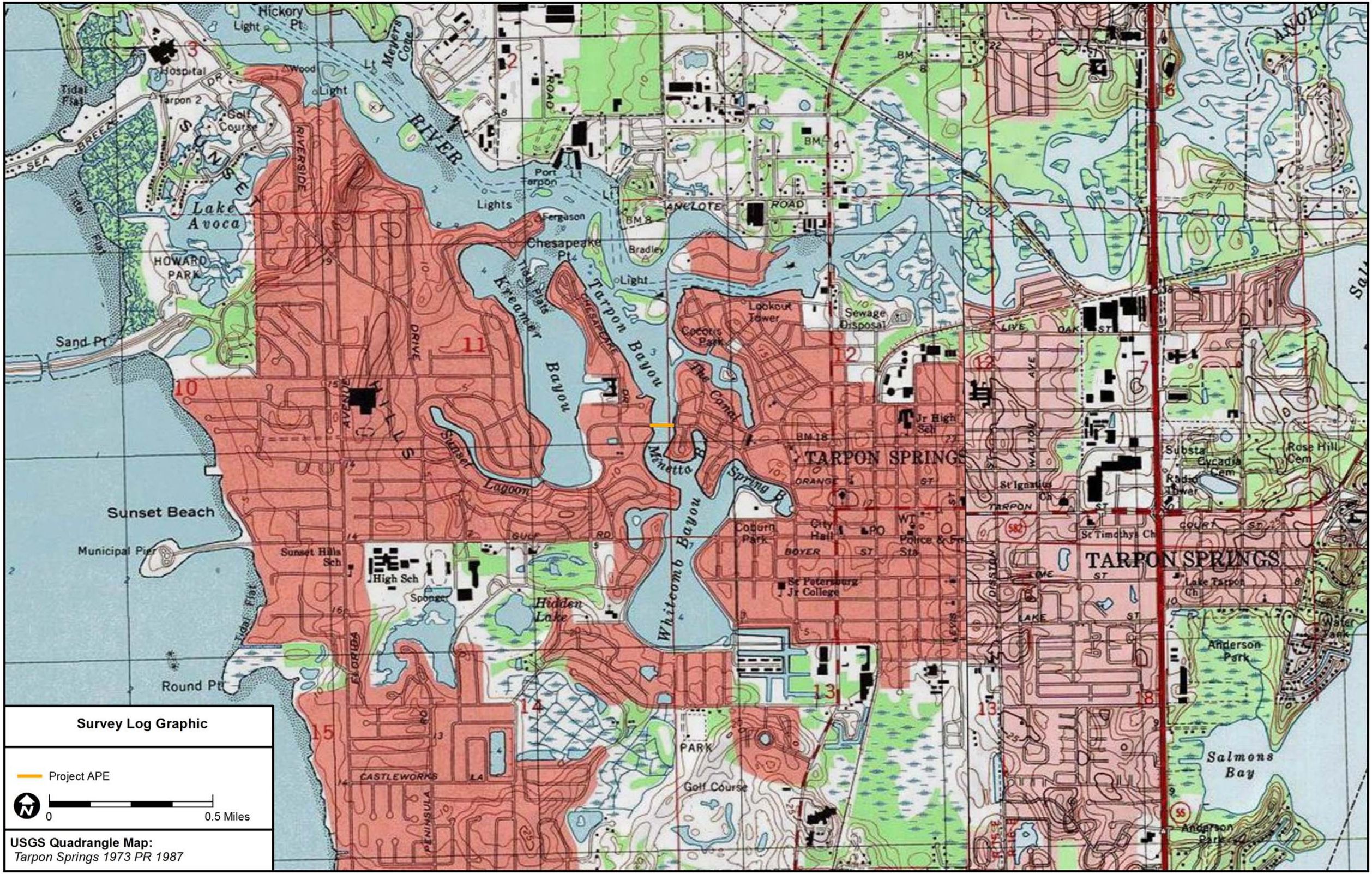
*****REQUIRED: ATTACH PLOT OF SURVEY AREA ON PHOTOCOPY OF USGS 1:24,000 MAP(S)*****

SHPO USE ONLY	SHPO USE ONLY	SHPO USE ONLY

Origin of Report: ☐872 ☐CARL ☐UW ☐1A32 # _____ ☐Academic ☐Contract ☐Avocational ☐Grant Project # _____ ☐Compliance Review: CRAT # _____

Type of Document: ☐Archaeological Survey ☐Historical/Architectural Survey ☐Marine Survey ☐Cell Tower CRAS ☐Monitoring Report ☐Overview ☐Excavation Report ☐Multi-Site Excavation Report ☐Structure Detailed Report ☐Library, Hist. or Archival Doc ☐MPS ☐MRA ☐TG ☐Other: _____

Document Destination: _____ **Plotability:** _____


Survey Log Graphic
Project APE
0
0.5 Miles
USGS Quadrangle Map:
Tarpon Springs 1973 PR 1987
Hickory Pt
Light
Meyers Cove
Hospital
Wood
Light
Tidal Flat
Tarpon 2
Golf Course
SEA BREEZE
SUNSET
RIVERSIDE
DR
RIVER
ROAD
Port Tarpon
Lights
Ferguson
Chesapeake Pt
Bradley
Light
Lake Avoca
HOWARD PARK
Tidal Flats
Kreamer Bayou
Tarpon Bayou
CHESAPEAKE DR
Lookout Tower
Sewage Disposal
Cocoris Park
The Canal
Jr High Sch
BM 18
TARPON SPRINGS
ORANGE ST
Spring B
Whitcomb Bayou
Coburn Park
City Hall
PO
Police & Fire Sta
BOYER ST
St Petersburg Jr College
Sand Pt
Sunset Lagoon
Sunset Beach
Municipal Pier
Sunset Hills Sch
High Sch
Sponge
Hidden Lake
Round Pt
Tidal Flat
FLORIDA
CASTLEWORKS
PENINSULA
PARK
Golf Course
Salmons Bay
Anderson Park
Water Tank
Rose Hill Cem
Cycadia Cem
Radio Tower
St Ignatius Ch
St Timothys Ch
Lake Tarpon Ch
LIVE OAK ST
WALTON
TARPON
COURT
LAKE
DORSETT
LOME
ST
AVE
RD
DRIVE
AVENUE
LA