



Cultural Resource Section 106 Effects Consultation Case Study Report For:
Beckett Bridge

Project Development and Environmental (PD&E) Study

from **Chesapeake Drive to Forest Avenue**
Tarpon Springs, Pinellas County, FL



Pinellas County Project ID: PID2161
FDOT Financial Project ID: 424385-1-28-01
Bridge No: 154000

January 2014

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EXECUTIVE SUMMARY

Pinellas County, in coordination with the Florida Department of Transportation (FDOT) District Seven, 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. This Section 106 Evaluation and Determination of Effects Case Study Report was prepared for Pinellas County in coordination with the FDOT, District Seven 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 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 concurred that the Beckett Bridge was individually eligible for listing in the National Register on September 17, 2012, and the SHPO also 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 Recommended Alternatives, will have an adverse effect on the Beckett Bridge.

Public involvement was conducted as part of the Section 106 process and two meetings were held with affected parties, including the Cultural Resource Committee (CRC), SHPO, United States Coast Guard, City of Tarpon Springs, Pinellas County, Tarpon Springs Yacht Club, and Tarpon Springs Historical Society. These CRC Meetings took place October 29, 2013 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 two additional rehabilitation alternatives designed at the request of the CRC and SHPO.



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1.0 INTRODUCTION

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. This Section 106 Evaluation and Determination of Effects Case Study Report was prepared for Pinellas County, in coordination with the FDOT, District Seven and FHWA by Janus Research in conjunction with URS. In accordance with the provisions of the Section 106 of the *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 improvements to the National Register-eligible Beckett Bridge located within the project APE.

A CRAS was prepared by Janus Research in February of 2013 to document cultural resources within the APE. The Beckett Bridge (8PI12017), which is located within the APE, was determined eligible for listing in the National Register as an individual historic resource. FHWA concurred that the Beckett Bridge is individually eligible for listing in the National Register on September 17, 2012, and the SHPO also concurred with these findings 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.



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 and because it is one of a few known, pre-1965, highway single-leaf rolling-lift bascule bridges remaining in Florida. Since 1956, major repairs were performed in 1979, 1998, and in 2011. 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. 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.

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. US Coast Guard 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." Whitcomb Bayou connects to the Gulf of Mexico via the Anclote River to the north.



Figure 2.1 – Project Location



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).

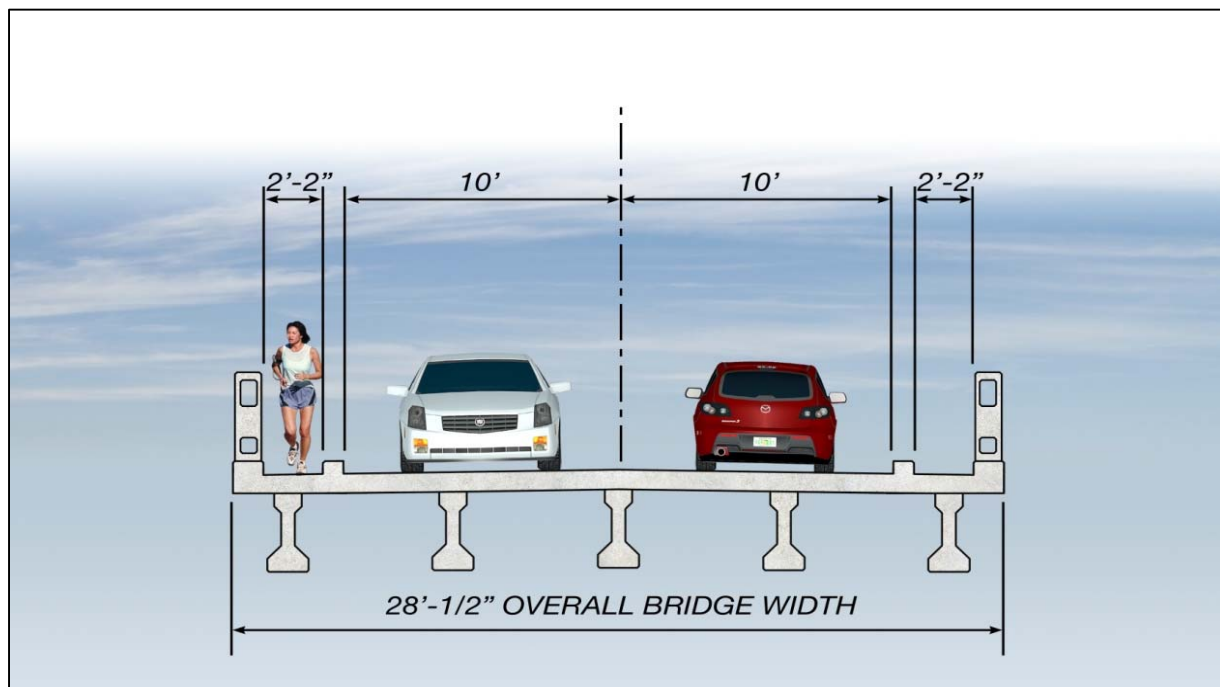


Figure 2.2 – Existing Bridge Typical Section

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.

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.

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 are under consideration:

- 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, No-Build with Removal of the Existing Bridge and Replacement of the Existing Bridge with a new Fixed Bridge were eliminated from further consideration.

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” 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. The concept plans for this alternative are included in Appendix C.

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. 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:

- 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.

Due to the historic status of the existing bridge, rehabilitation would be implemented in accordance with the *Secretary of the Interior's Standards for Rehabilitation*.

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

The alternatives discussed below were presented at an Alternatives Public Meeting on January 23, 2013. Based on potential social and environmental impacts and input from the community, No-build with Removal of the Existing Bridge and Replacement of the Existing Bridge with a New Fixed Bridge 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” Alternative. Many members of the community also expressed support for improvements to the existing pedestrian facilities.

The Beckett Bridge remains one of seven, pre-1965 single-leaf bascule highway bridges in Florida. It has been determined to be eligible for listing in the National Register NRHP under Criterion A for its contributions to the patterns of development and transportation in the State, and under Criterion C for its distinct engineering. 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. 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 was 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 an additional rehabilitation alternative that did not require widening, but that provided a single wider sidewalk on one side of the existing bridge. Accordingly, this alternative was evaluated. The following sections summarize the evaluation of these two additional alternatives.

3.3.1 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. The total width of the bridge would be 42 feet. The total width of the existing bridge is only 28 feet.



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 look of the bridge and will require substantial modification to the existing bascule piers. The final structure will no longer resemble the original historic bridge.



Replacement with a new movable bridge, of similar design, which is consistent with and compliments the local environment, is recommended.

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 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.

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 than the existing bridge. Therefore, the existing bridge width is not sufficient to support two lanes and a single sidewalk without widening.

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 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 (1.5'), 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 width 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 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 to the scope of bridge rehabilitation. Both require complete replacement of the bascule span and bascule piers.

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 C. 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 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 featuring 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 C.

3.4.2 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 right-of-way. Although the proposed roadway typical sections were developed to tie into the existing roadway right-of-way 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 Mobile Home Park 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 Mobile Home Park on the south side of the roadway. 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 3.1). Shoulder widths for the fixed bridge alternative are limited to 4.5 feet to avoid additional right-of-way impacts.

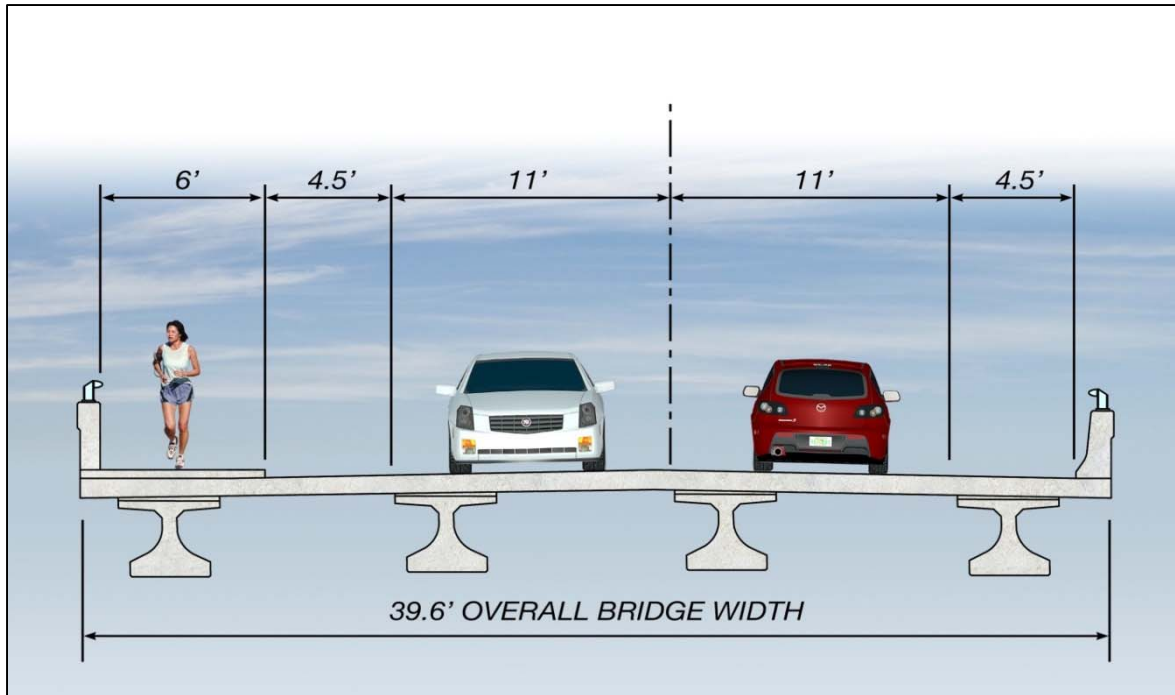


Figure 3.1 – Proposed Fixed Bridge Typical Section

The proposed roadway section west of the bridge consists of two, ten-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 right-of-way, 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 right-of-way.

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 right-of-way narrows. Figures 3–2 and 3–3 illustrate the proposed roadway sections for the fixed bridge alternatives, and the concept plans for these alternatives are found in Appendix C.

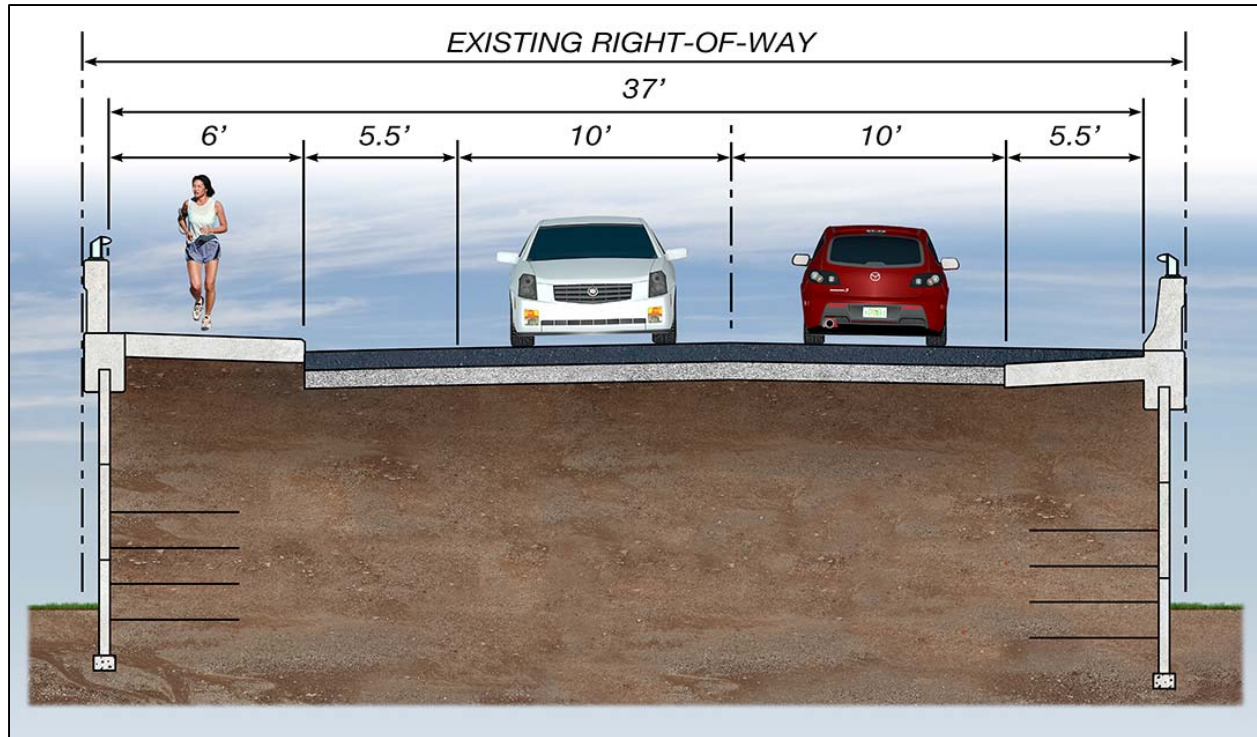


Figure 3.2 – Proposed Roadway Section West of Proposed Fixed Bridge

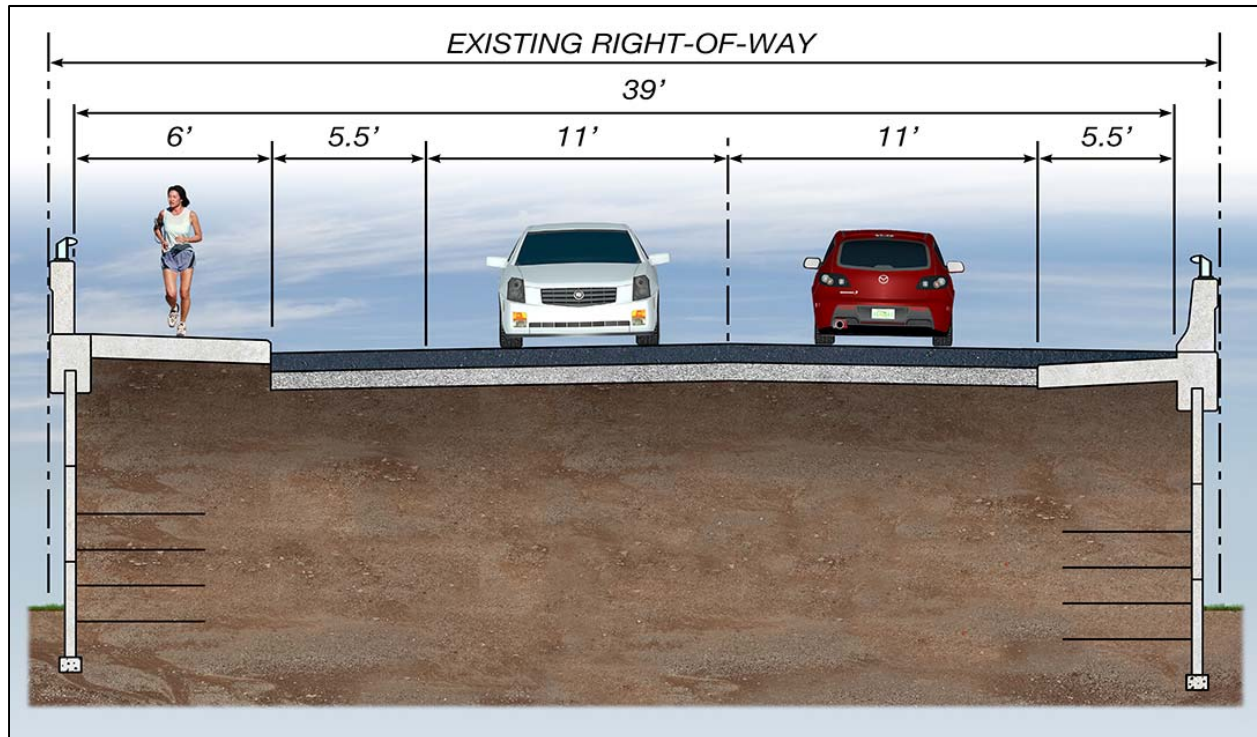


Figure 3.3 – Proposed Roadway Section East of Proposed Fixed Bridge



3.4.2.1 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 Mobile Home Park (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. A new access road for the

Bayshore MHP will be constructed north of Riverside Drive. The access road will connect with Chesapeake Drive and extend east through the 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 Mobile Home Park driveway. The minimum vertical clearance at the Mobile Home 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, 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.

3.4.2.2 Fixed Bridge Alternative – Option B

The proposed fixed bridge (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 Mobile Home Park. 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. 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 driveway entrance to Bayshore Mobile Home Park will be eliminated. Construction of a new entrance and exit for the mobile home park at Chesapeake Drive will impact approximately seven mobile home lots on the west end of the development.

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.

3.4.3 Selection of a Recommended Alternative Fixed Bridge Alternatives

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, minimal impacts to the surrounding community and adequately meets the transportation need. No additional right-of-way 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. This alternative will be presented at a public hearing and 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. Burlison, 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 Anclothe 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.

The Boom period began to decline in August 1925, when the Florida East Coast 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 4.1–4.3 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.



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

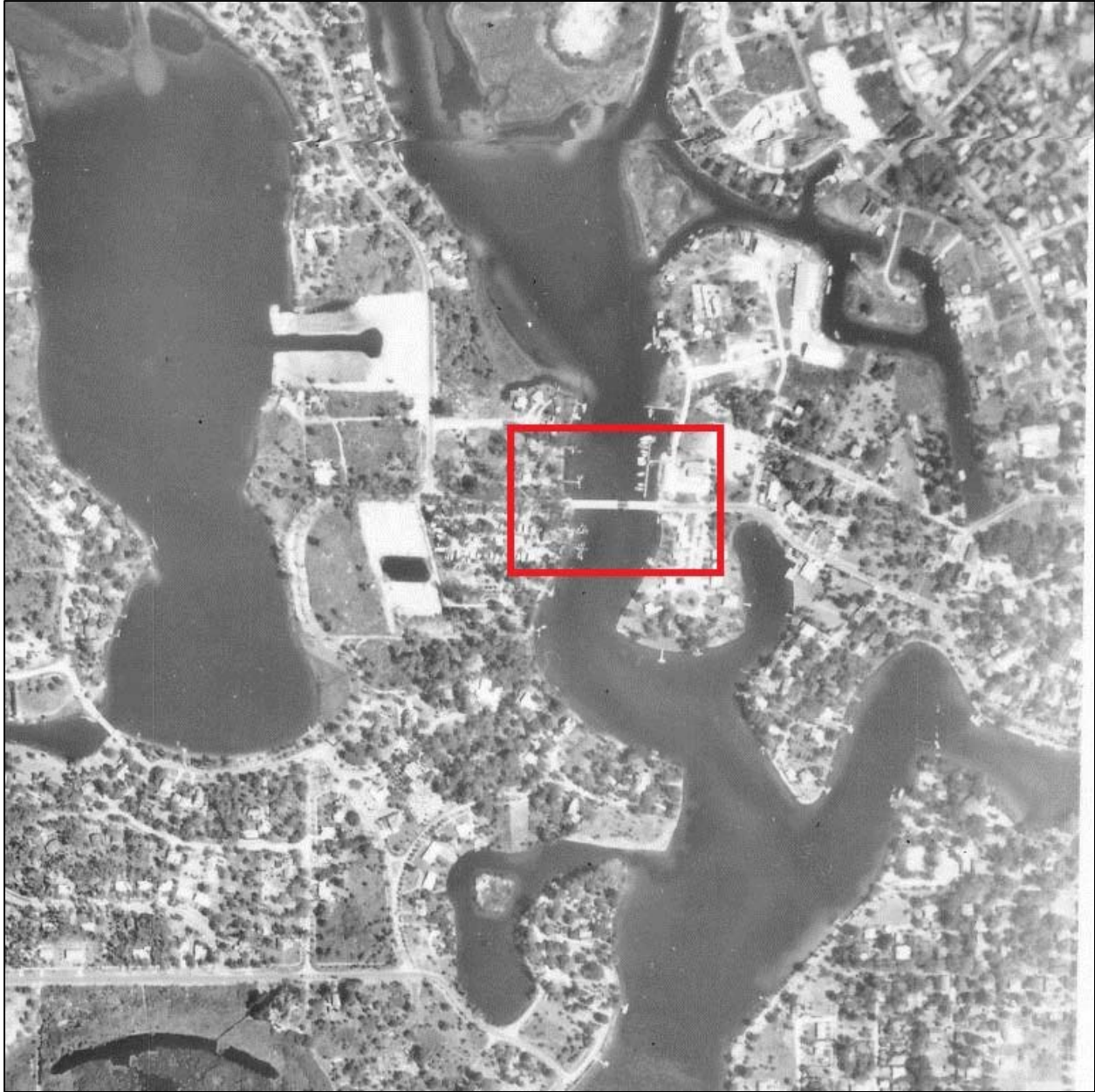


Figure 4.2 – 1957 Aerial Photograph showing the Beckett Bridge and Surrounding Area

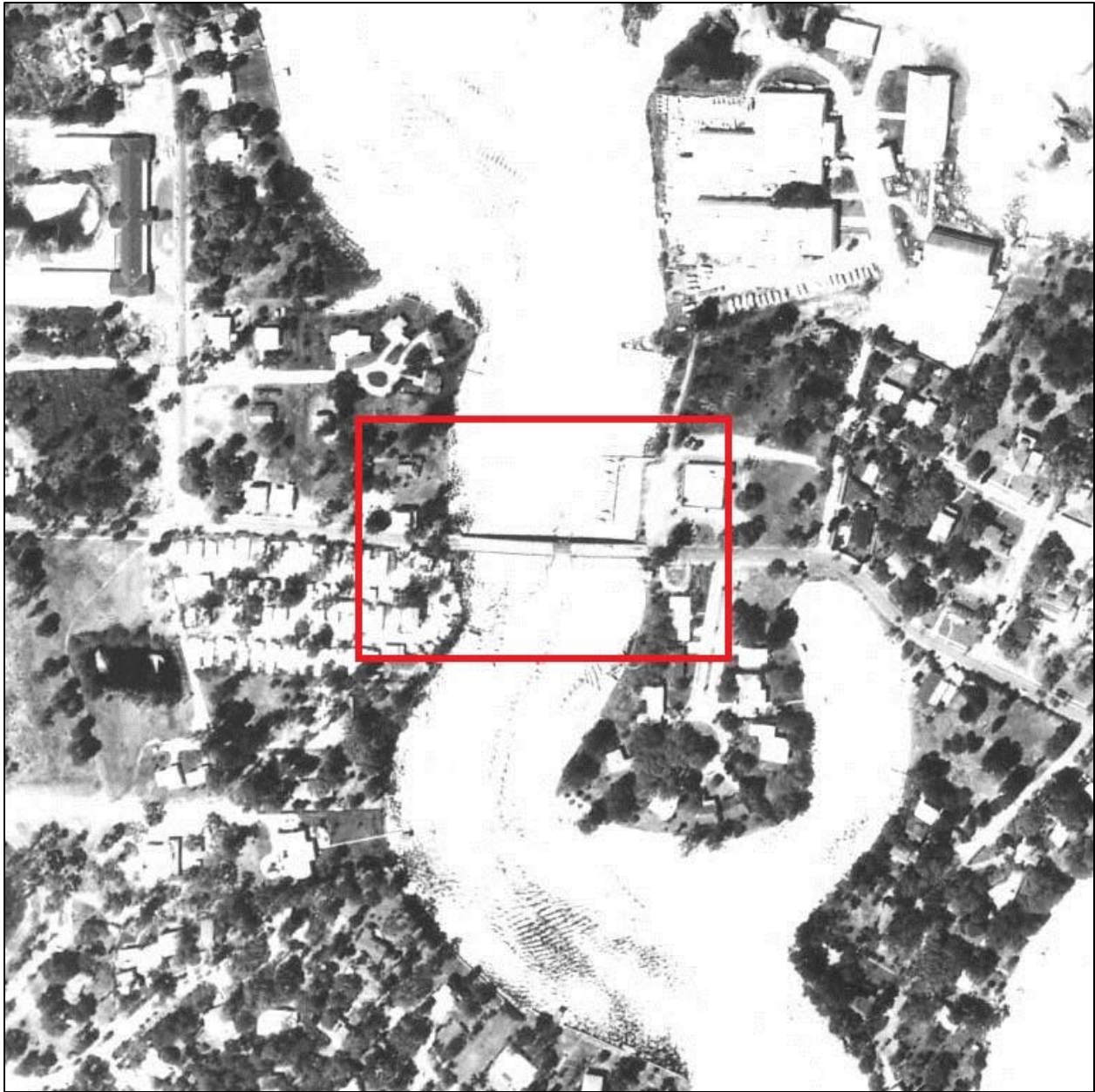


Figure 4.3 – 1974 Aerial Photograph showing the Beckett Bridge and Surrounding Area



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.

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 to correct issues with the operating machinery and the movable bridge span within the APE in 2011.

5.0 SIGNIFICANT HISTORIC RESOURCE

A 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 as an individual historic resource (Figures 5.1–5.2). 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.

5.1 Beckett Bridge (8PI12017)



Figure 5.1 – Beckett Bridge (8PI12017) in Pinellas County, facing southwest



Figure 5.2 – Beckett Bridge (8PI12017) in Pinellas County, facing west

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 with a 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 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. 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."

The Beckett Bridge was first constructed in 1924 and originally called the Chilito Street Bridge (n.a. 1948). It was designed by C.E. Bursleson, 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.

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, as described in the Significant Historic Resource section. In summary, all 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 presented 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, No-Build with Removal of the Existing Bridge and Replacement of the Existing Bridge with a New Fixed Bridge were eliminated from further consideration.

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, 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” 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 consideration.

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, 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

Two Alternatives 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" alternative. 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 was 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 an additional rehabilitation alternative that did not require widening, but that provided a single wider sidewalk on one side of the existing bridge. Accordingly, this alternative was evaluated. The following sections summarize the evaluation of these two additional alternatives. 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 D).

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. The total width of the existing bridge is only 28 feet.

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 look of the bridge and will require replacement of the existing bascule piers. The final structure will no longer resemble the original historic bridge. Based on the major modifications that would take place as part of this alternative, 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 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.

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 than 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.

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 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 (1.5'), 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 width 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".

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 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. 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 Movable Bridge Alternative

The Movable Bridge Alternative is the Recommended Alternative established as part of the PD&E Study and public input. 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 Movable Bridge will result in an adverse effect to the National Register-eligible structure.

6.1.5.2 New 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,



Replacement of the Existing Bridge with a New Fixed Bridge Alternatives were eliminated from further consideration.



7.0 CONCLUSIONS

This Section 106 Evaluation and Determination of Effects Case Study Report 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 movable bridge, will have an adverse effect on the Beckett Bridge.

Public involvement was conducted as part of the Section 106 process and two meetings were held with affected parties, including the SHPO, United States Coast Guard, City of Tarpon Springs, Pinellas County, Tarpon Springs Yacht Club, and Tarpon Springs Historical Society. These CRC Meetings took place October 29, 2013 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 two additional rehabilitation alternatives designed at the request of the CRC and SHPO.

The development of mitigation measures is currently underway, and a Memorandum of Agreement will be prepared and executed if adverse effects to the Beckett Bridge cannot be avoided. Mitigation may include but will not necessarily be limited to the Historic American Building Survey/Historic American Engineering Record (HABS/HAER) documentation of the bridge, which includes large-format photography and copying historic plans on archival paper.

Additional mitigation options will be developed after the Public Hearing if the Recommended Alternative is determined to be the Preferred Alternative.

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Janus Research

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APPENDIX A:

FHWA AND SHPO CONCURRENCE LETTERS

RECEIVED
PLANNING UNIT



2012 OCT 15 AM 7:49

Florida Department of Transportation

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

RICK SCOTT
GOVERNOR

ANANTH PRASAD, P.E.
SECRETARY

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

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

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.

Ms. Linda Anderson
Beckett Bridge PD&E Study
County Project ID: *PID 2161*; Florida DHR Project File No: 2012-2526
FDOT Financial Project ID: 424385-1-28-01
August 24, 2012
Page 2 of 3

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 Hornik, Pinellas County
David Talhouk, Pinellas County
Ann Venables, EC Driver
Rebecca Spain Schwarz, Atkins

Ms. Linda Anderson
Beckett Bridge PD&E Study
County Project ID: PID 2161; Florida DHR Project File No: 2012-2526
FDOT Financial Project ID: 424385-1-28-01
August 24, 2012
Page 3 of 3

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; NATHIE DEZIO, FHWA; AND
ROY JACKSON, FDOT C&D.

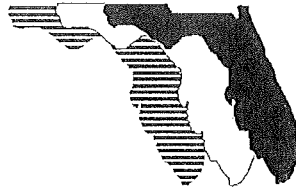

Martin C. Knopp
Division Administrator
Florida Division
Federal Highway Administration

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

10.8.12
Date



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

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

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

0001101 07 1201

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.

Ms. Linda Anderson
Beckett Bridge PD&E Study
County Project ID: *PID 2161*; Florida DHR Project File No: 2012-2526
FDOT Financial Project ID: 424385-1-28-01
February 20, 2013
Page 2 of 3

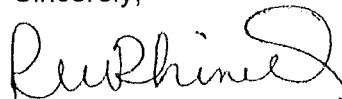
A historic resources reconnaissance survey was also undertaken in order to address historic resources along a proposed detour route which would be required for removal of the existing bridge, or during construction for the Beckett Bridge. If any of the build or rehabilitation alternatives are selected, 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 Hornnik, 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 RHODESMITH, FDOT D7; NAHIE DETZIO, FHWA;
AND BOY JACKSON, FDOT COMO.

/s/ Linda Hawk

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

[Signature]

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

4/4/13

Date

APPENDIX B:

**BECKETT BRIDGE NATIONAL REGISTER DETERMINATION OF ELIGIBILITY
REPORT**

**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.)

Beckett Bridge
Name of Property

Pinellas County, Florida
County and State

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

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

Areas of Significance

(Enter categories from instructions)

Community Planning and Development

Transportation

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

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.)

1	1	7	3	2	6	6	5	9	3	1	1	5	0	8	5
Zone			Easting						Northing						
2															

3															
Zone			Easting						Northing						
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.*).

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Beckett Bridge
Pinellas County, Florida

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

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Beckett Bridge
Pinellas County, Florida

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.

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Beckett Bridge
Pinellas County, Florida

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).

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Beckett Bridge
Pinellas County, Florida

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 Lonquist 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

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Beckett Bridge
Pinellas County, Florida

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 aerals 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

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Beckett Bridge
Pinellas County, Florida

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

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Beckett Bridge
Pinellas County, Florida

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

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Beckett Bridge
Pinellas County, Florida

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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Beckett Bridge
Pinellas County, Florida

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Beckett Bridge
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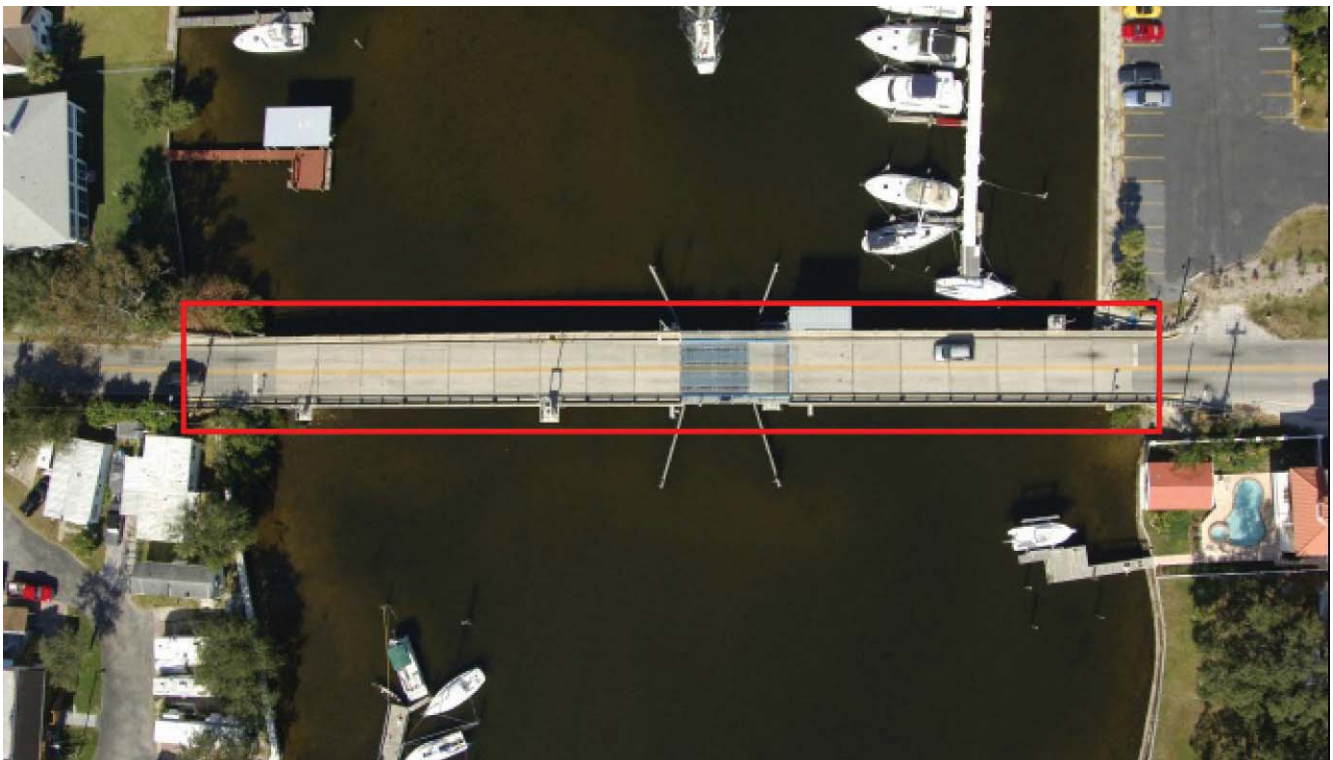
SECTION 10: GEOGRAPHICAL DATA

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

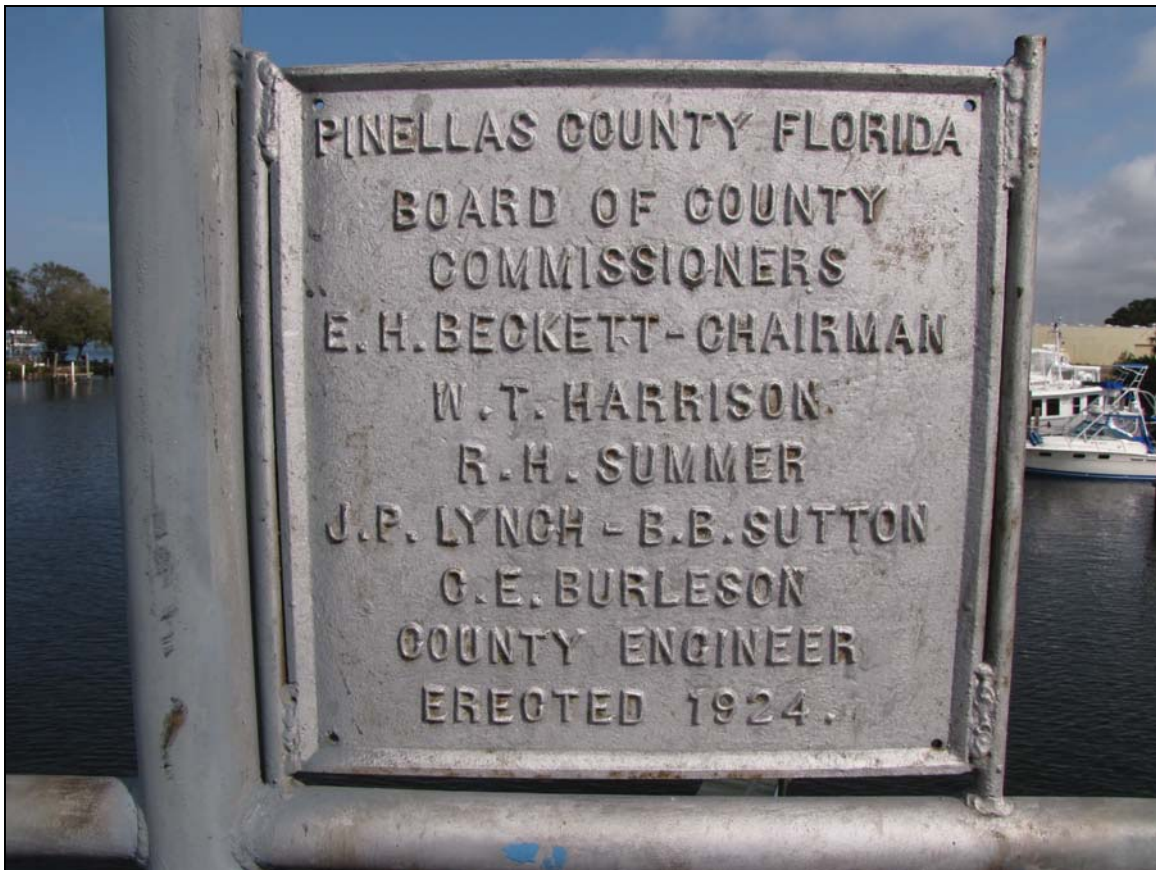


Figure 11
Plaque on Railing, Facing North

Beckett Bridge

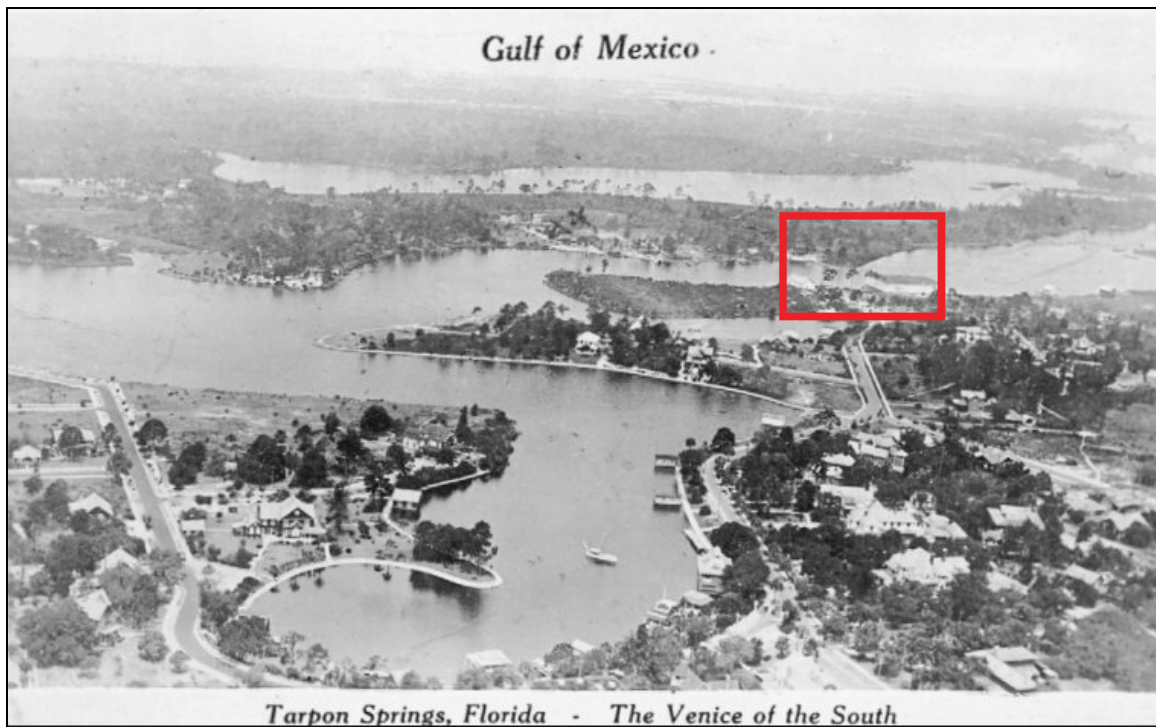


Figure 12
Historic Postcard Looking West, Showing Future
Location of Beckett Bridge

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

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Pinellas County, Florida

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

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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

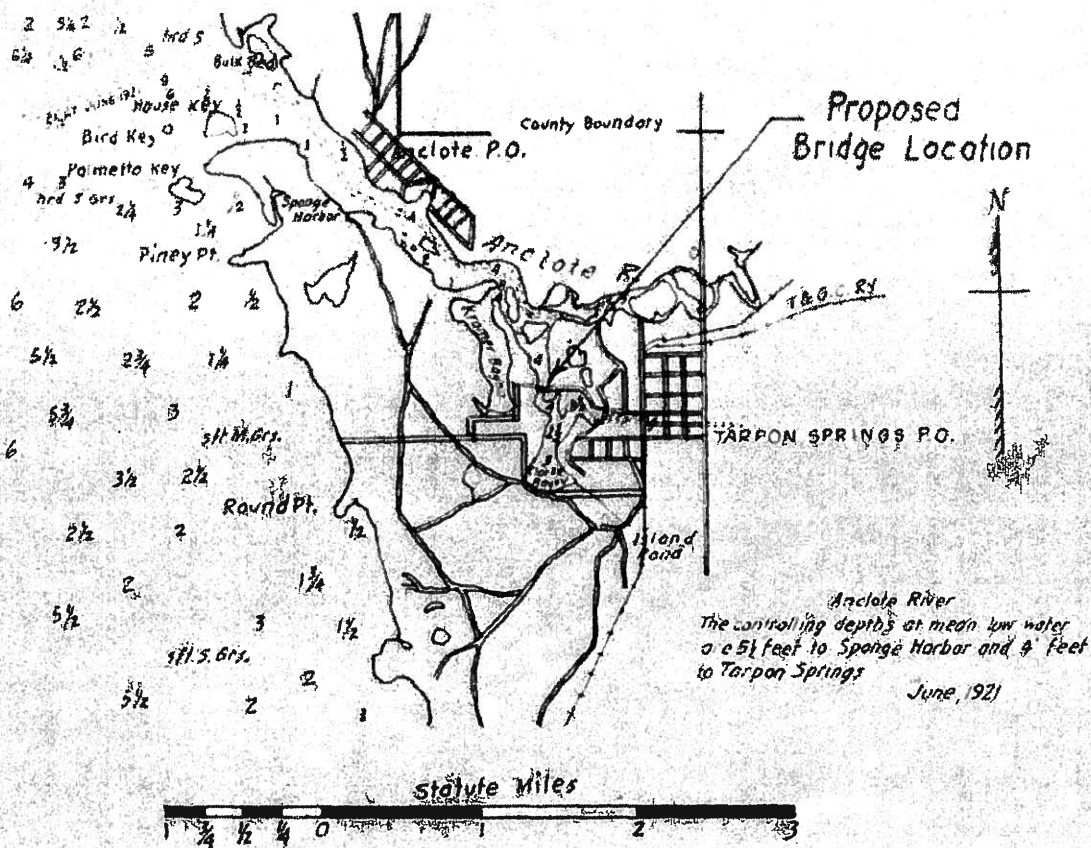
MAP OF

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

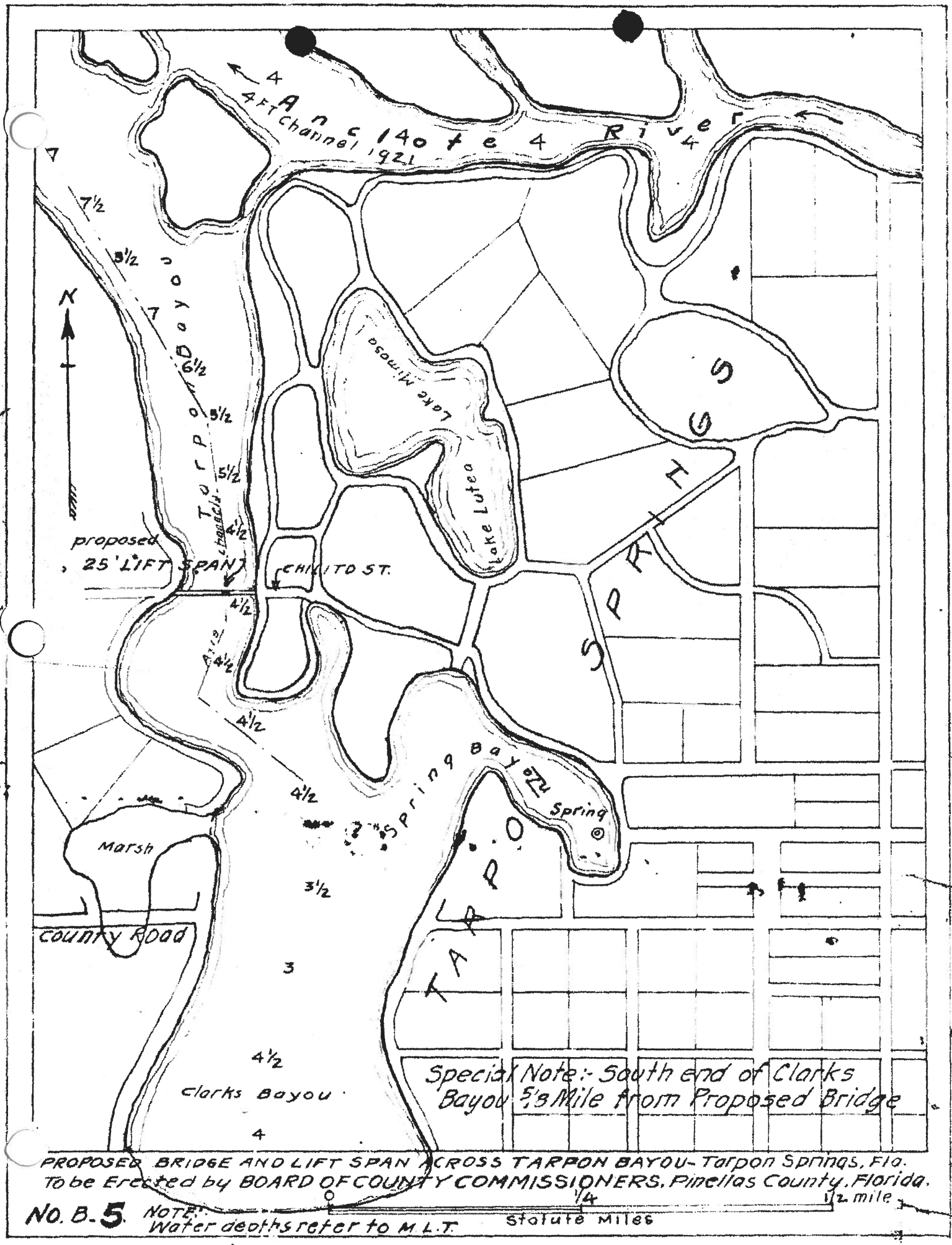


OFFICE OF COUNTY ENGINEER
Clearwater, Florida.

APPROVED L. E. Burleson
10-14-23 County Engineer

DRAWN	E.V.A.	9-14-23	NO
CHECKED	C.E.B.	10-12-23	B 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

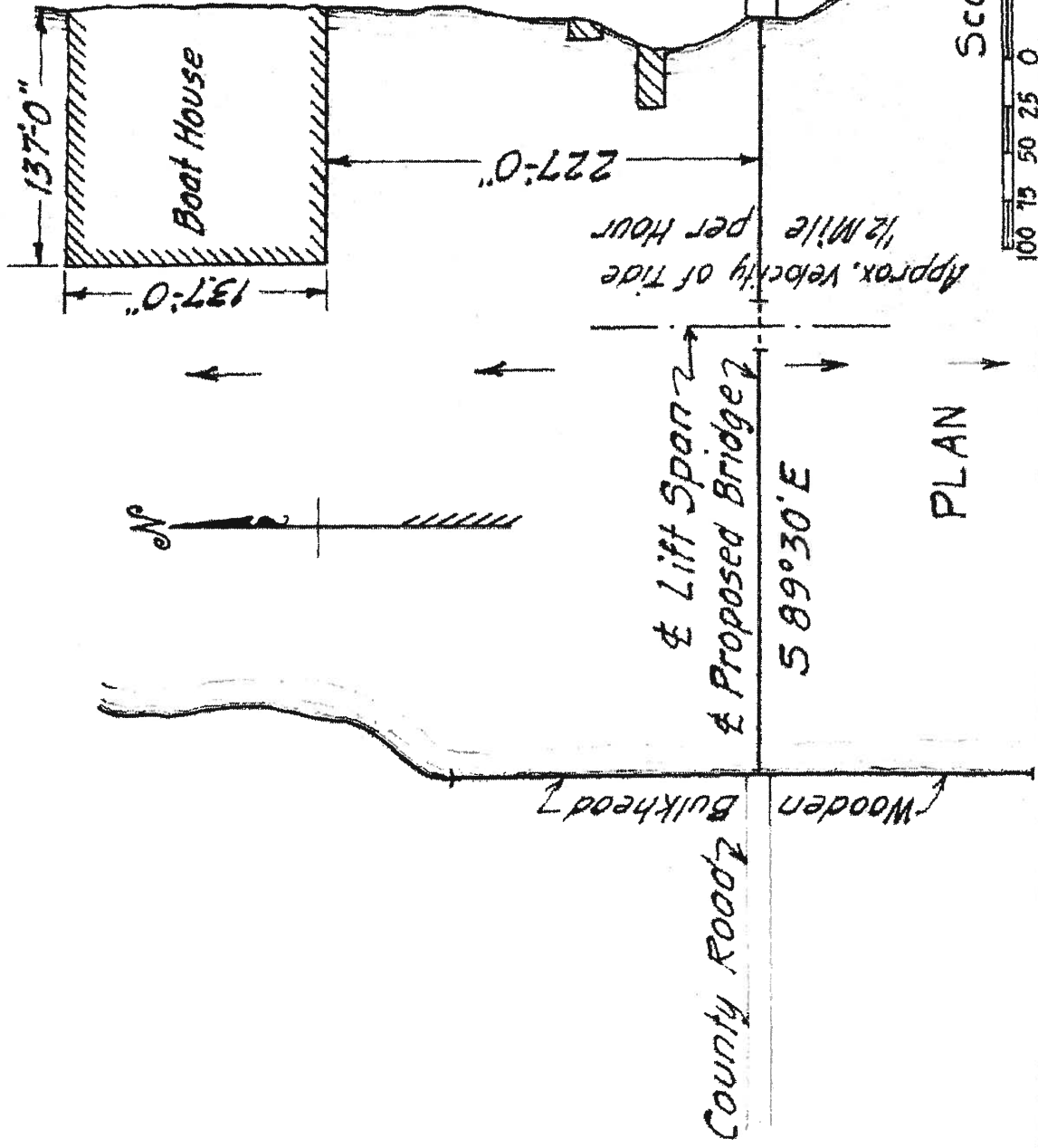
NOTE: Water depths refer to M.L.T. statute miles

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

TO BE ERECTED BY

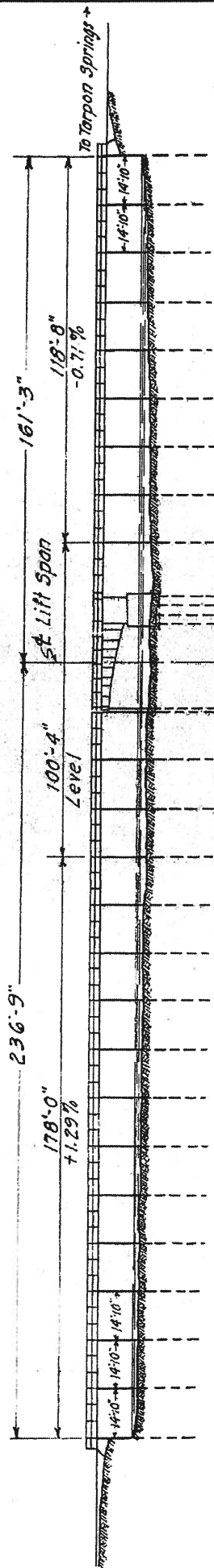
BOARD OF COUNTY COMMISSIONERS-PINELLAS COUNTY, FLORIDA

OFFICE OF COUNTY ENGINEER		C/O R. W. F. FLORES	
CLERMONT, FLORIDA		10-14-23	
APPROVED		COUNTY ENGINEER	
DRAWN		E. V. A. 9-14-23	
CHECKED		C. E. B. 10-12-23	
		B. 2	



Engr. Cert. #178

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"



OFFICE OF COUNTY ENGINEER			
CLEARWATER, FLORIDA			
APPROVED	10-14-23	10-14-23	10-14-23
DRAWN	E.V.A.	9-12-23	N.O.
CHECKED	C.E.B.	10-12-23	B.T.

SAIT-CORP/SCALE #170
 SHEET OF 2/9

APPENDIX B:
1996 REHABILITATION PLANS

Timothy J. Farrell

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 LIMESTONE 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.

GENERAL NOTES

SIDEWALK PLATE:

SIDEWALK PLATE SHALL BE 3/8" ALUMINUM TREAD PLATE OF ALUMINUM ALLOY 6061-T6. ALUMINUM: fy = 35,000 psi, fo = 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.

LUBRICATION 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.

DESIGNED BY: J. J. FARRELL
CHECKED BY: MRC
DATE: 5-95
DRAWN BY: KTL
DATE: 5-95
DESIGNED BY: MRC
DATE: 5-95
CHECKED BY: TJF
DATE: 5-95
APPROVED BY: T.J. FARRELL


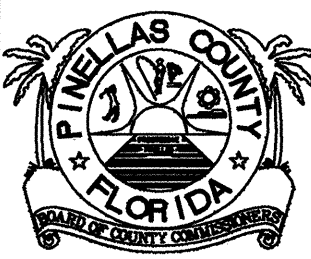
REVISIONS			REVISIONS			SEAL:	DESIGN			DSAGROUP INC.	PINELLAS COUNTY DEPARTMENT OF PUBLIC WORKS	SHEET TITLE: GENERAL NOTES PROJECT NAME: BECKETT BRIDGE REPAIRS	SHEET A-2
Date	By	Description	Date	By	Description		Drawn by	Checked by	Designed by				
							KTL	MRC	MRC				
									TJF				
									T.J. FARRELL				

BID ITEM NOTES:

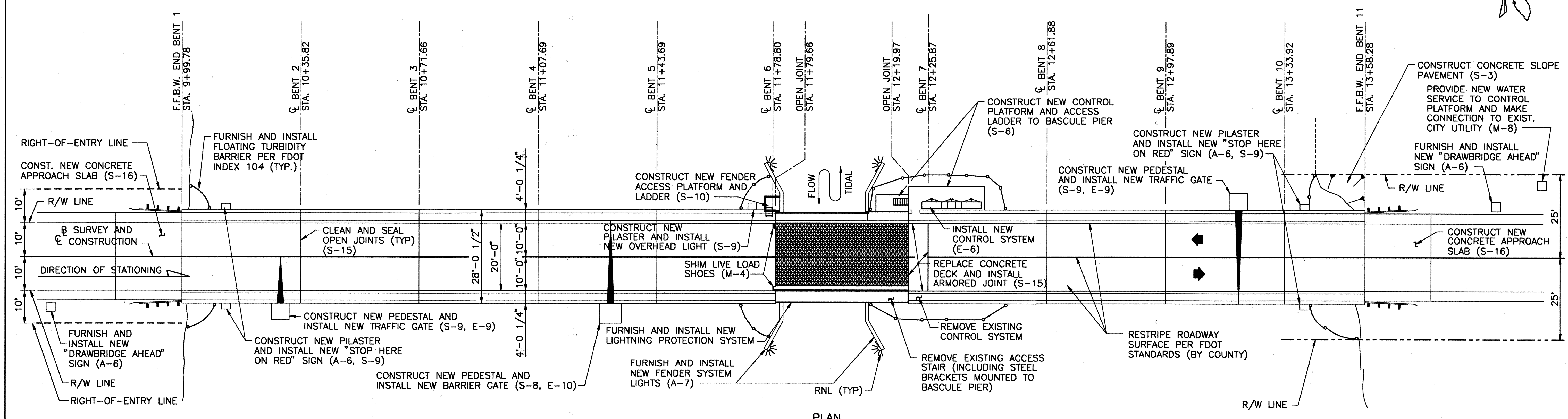
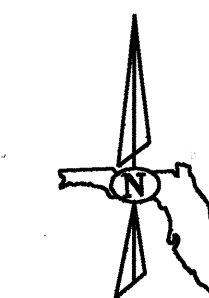
- 1. PAYMENT FOR INCIDENTAL ITEMS NOT SPECIFICALLY COVERED IN THE INDIVIDUAL PAY (BID) ITEMS SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR PAY (BID) ITEMS.
- 2. FOR MAINTENANCE OF TRAFFIC NOTES, SEE "TRAFFIC CONTROL PLANS."
- 3. THE TOTAL PLAN AREA OF THE APPROACH SLABS REQUIRED IS 115 S.Y. FOR DETAILS, 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	

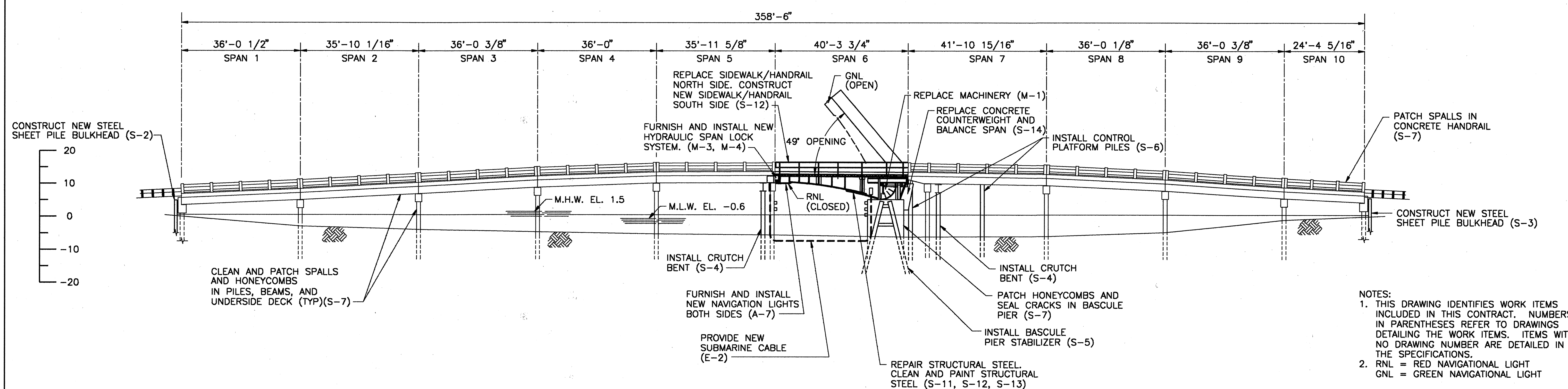
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REVISIONS			REVISIONS			SEAL:	Names				DSA GROUP, INC. 2005 PAN AM CIRCLE TAMPA, FLORIDA 33607		PINELLAS COUNTY DEPARTMENT OF PUBLIC WORKS	SHEET TITLE:		SHEET	
Date	By	Description	Date	By	Description		Drawn by							SUMMARY OF QUANTITIES			
							Checked by	MRC	5-95					PROJECT NAME:			
							Designed by	MRC	5-95					BECKETT BRIDGE REPAIRS			
							Checked by	BCW	5-95								
							Approved by	T.J. FARRELL								A-3	

Timothy J. Farrell



PLAN



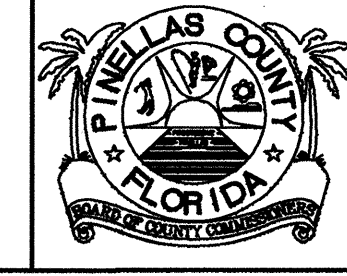
ELEVATION

- 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

REVISIONS		REVISIONS		SEAL:		DRAWN BY		CHECKED BY		DESIGNED BY		CHECKED BY		APPROVED BY		DATE		NAME		DATE		PROJECT NAME		SHEET TITLE		BRIDGE NO. 154000		SHEET	
Date	By	Description	Date	By	Description		CLM	TJF	MRC	TJF	T.J. FARRELL	5-95	5-95	5-95	5-95	5-95	5-95	5-95	5-95	5-95	5-95	5-95	5-95	5-95	5-95	5-95	5-95	5-95	



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



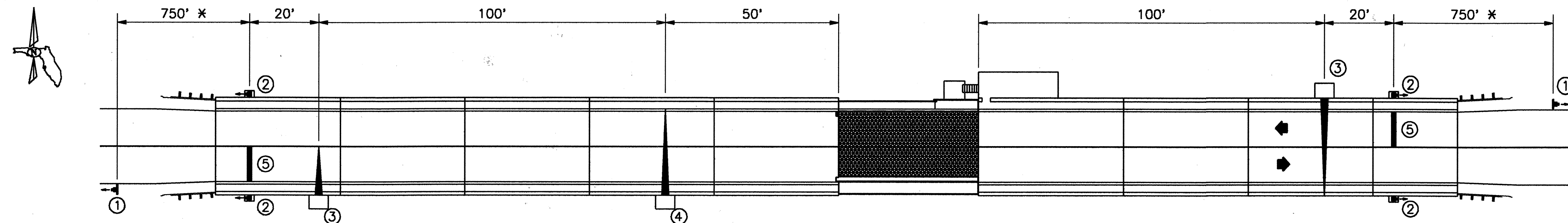
PINELLAS COUNTY
DEPARTMENT OF
PUBLIC WORKS

KEY SHEET

BECKETT BRIDGE REPAIRS

A-4

BRIDGE MOUNTS

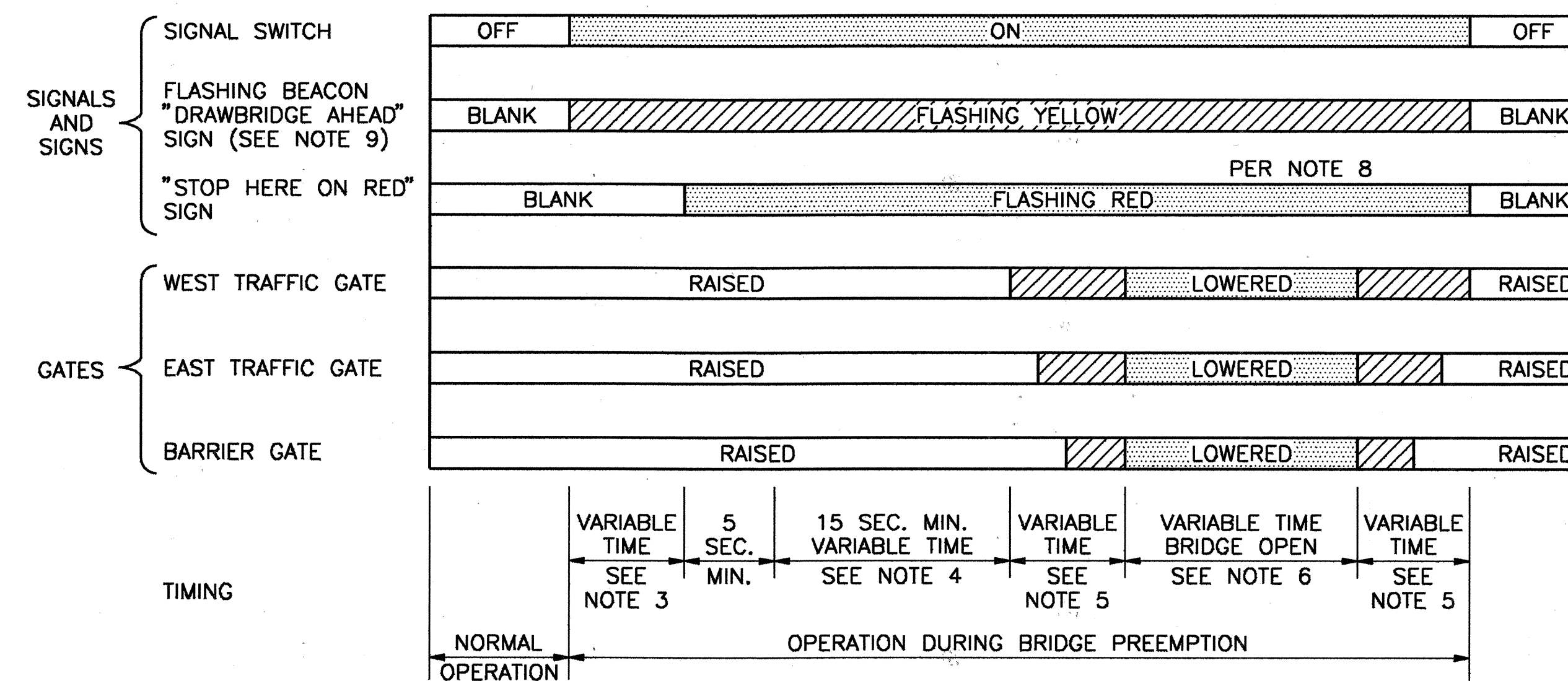


* = FIELD CONDITIONS MAY REQUIRE ADJUSTMENT OF THIS STANDARD DISTANCE.

PLAN

LEGEND

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



SEQUENCE CHART

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.

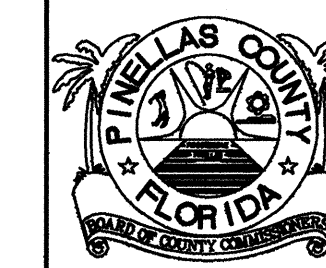
R:\94060\CADD\BRIDGE\CS\NOTES\REMARK 05/18/95 10:09:32 AEV PRODUCED BY DSA CADD SYSTEM

REVISIONS			REVISIONS			SEAL:				SHEET TITLE:	SHEET
Date	By	Description	Date	By	Description		Drawn by	Checked by	Designed by		
							KTL	MRC	TJF	TRAFFIC CONTROL DEVICES FOR MOVABLE SPAN BRIDGE SIGNALS	A-5
										PROJECT NAME:	
										BECKETT BRIDGE REPAIRS	

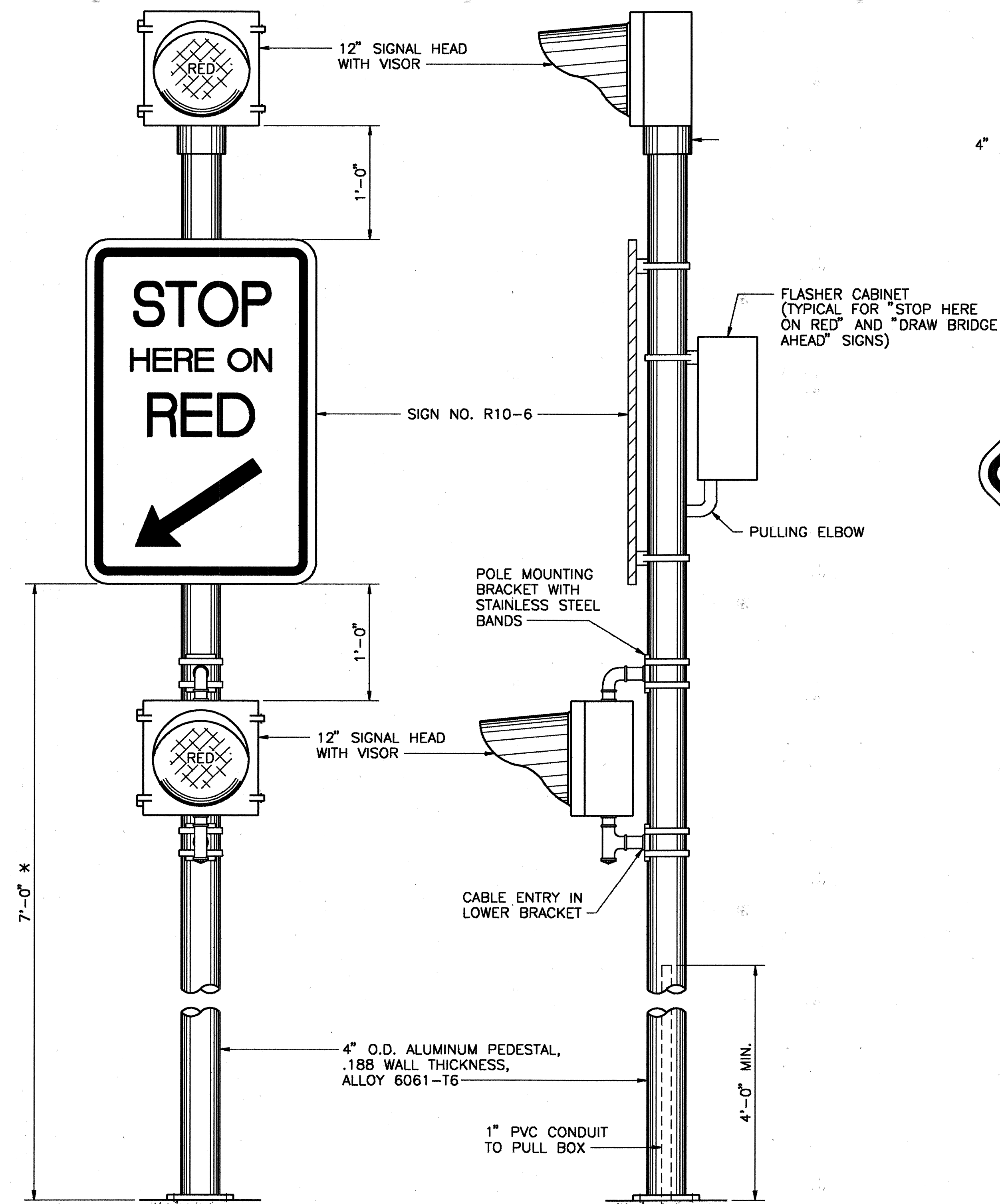
Timothy J. Farrell



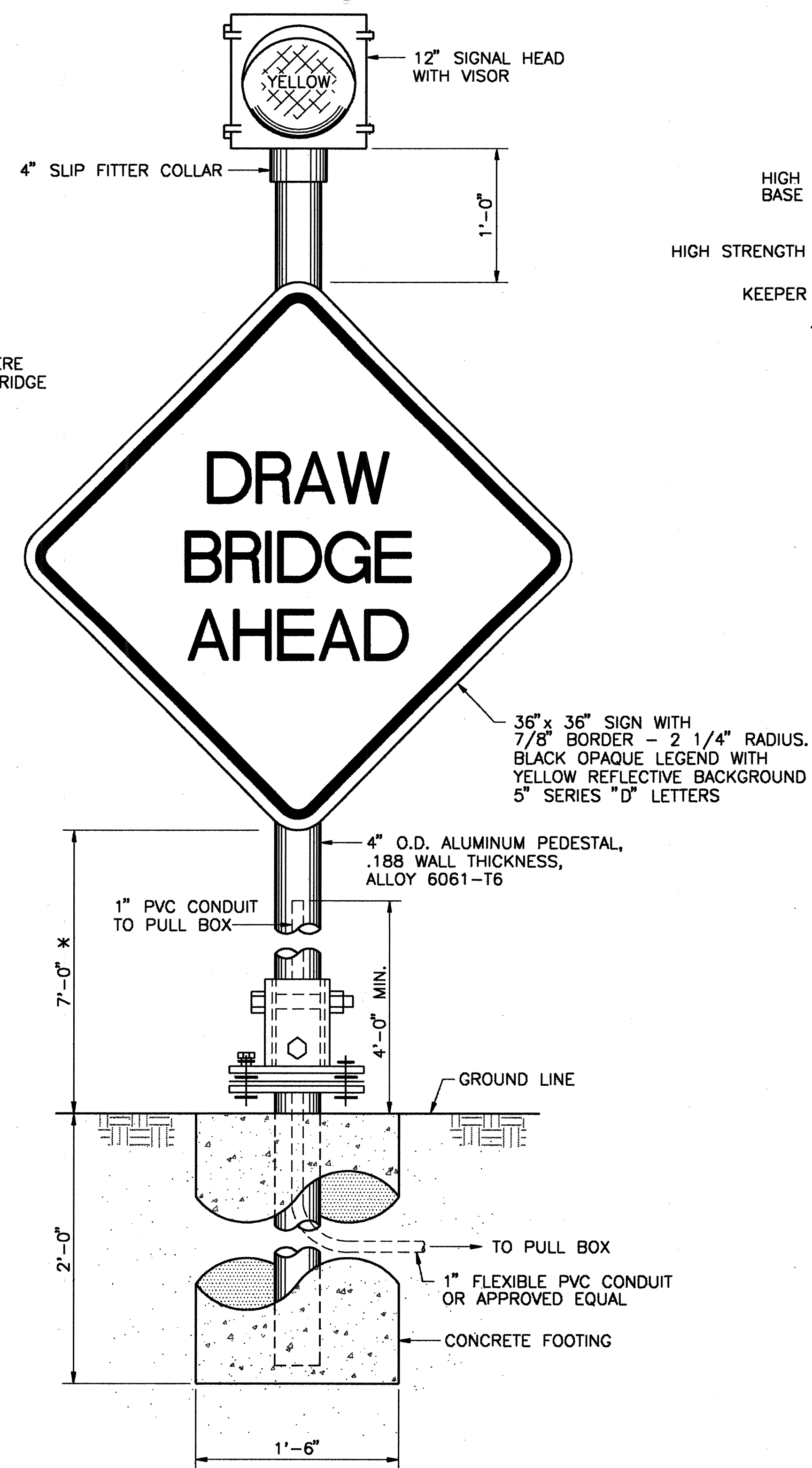
DSA GROUP, INC.
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607



PINELLAS COUNTY
DEPARTMENT OF
PUBLIC WORKS

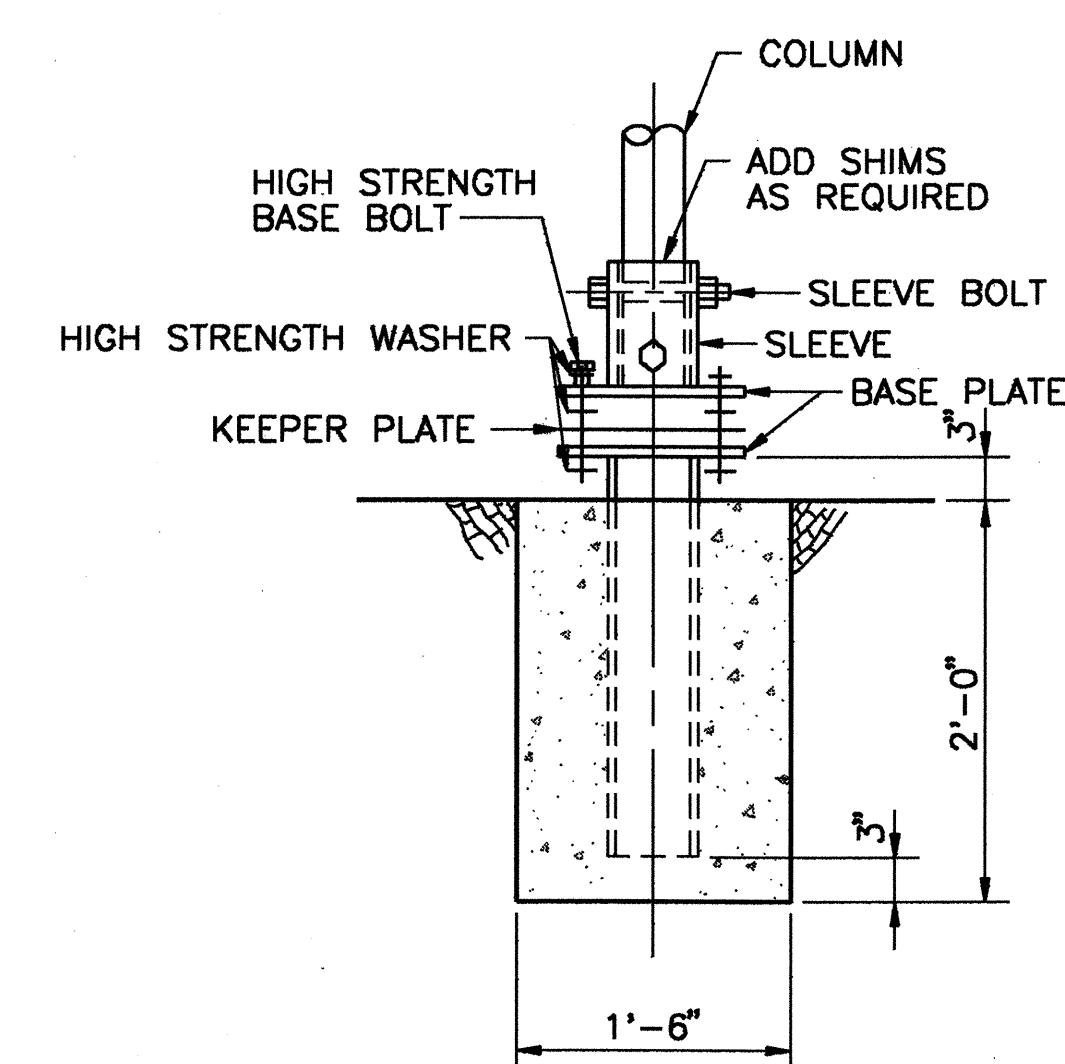


"STOP HERE ON RED" SIGN
(SEE PLANS FOR BRIDGE MOUNTING DETAILS)

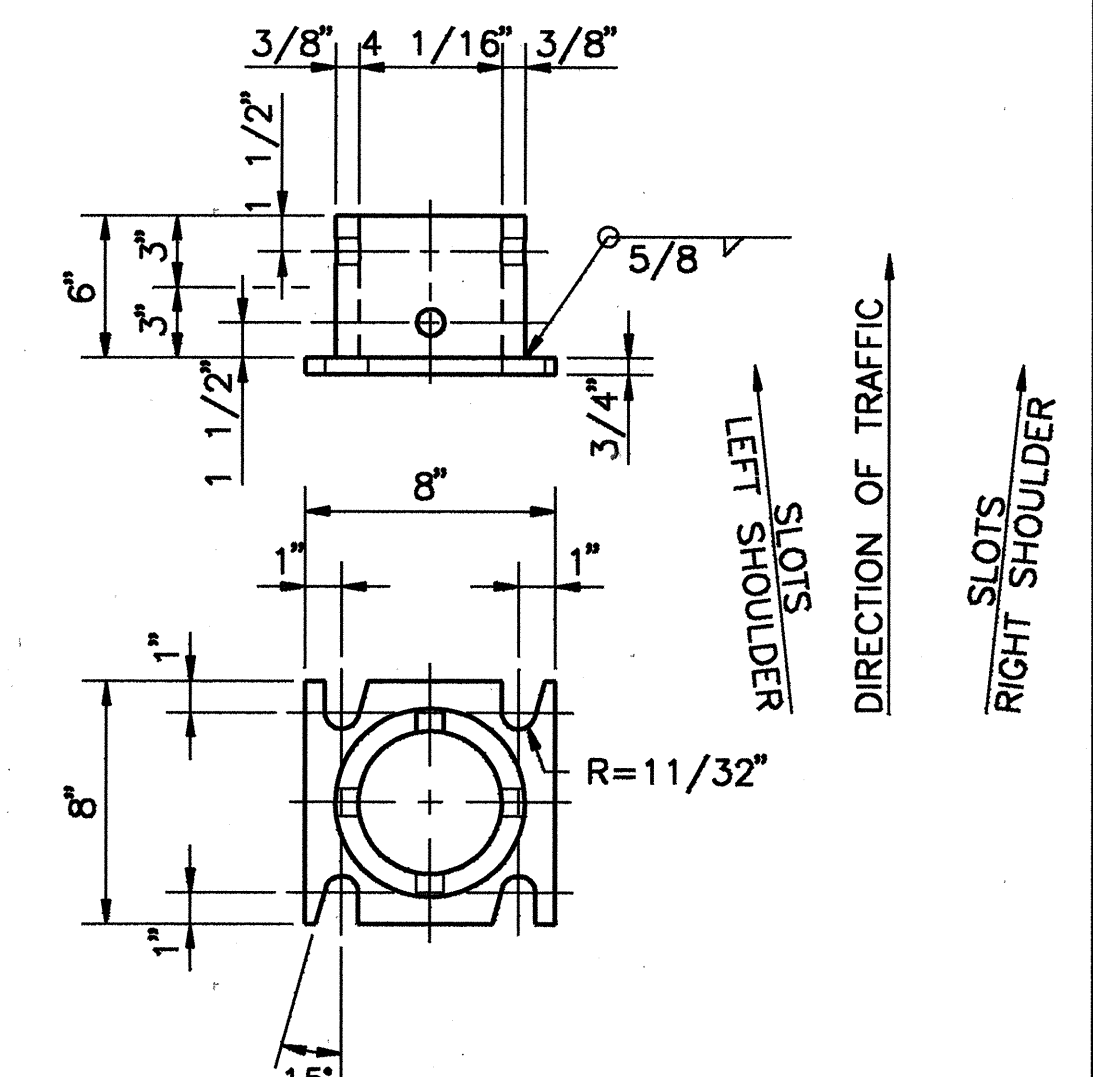


"DRAW BRIDGE AHEAD" SIGN

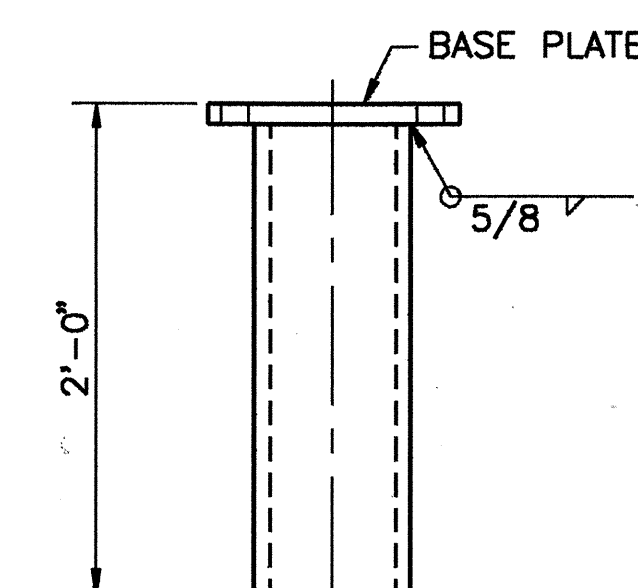
* = MEASURED FROM THE BOTTOM OF THE SIGN TO THE NEAR EDGE OF THE PAVEMENT. HORIZONTAL DISTANCE BETWEEN EDGE OF PAVEMENT AND INSIDE EDGE OF SIGN WILL VARY WITH CONDITION AT JOB SITE.



BASE DETAIL

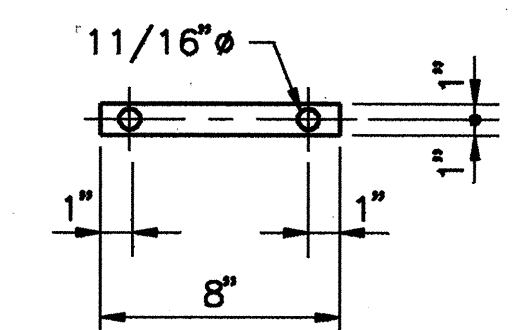


SLEEVE AND BASE PLATE DETAILS



STUB SIZE EQUALS MIN. SLEEVE SIZE OR LONGER

STUB DETAIL



BOLT KEEPER DETAIL

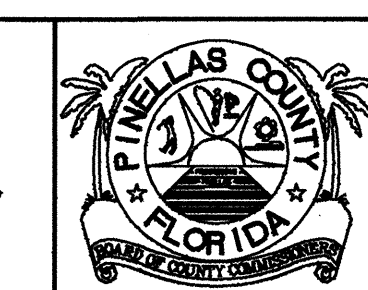
SIGN POST BREAK AWAY DETAILS

RA 04081 CADD/BRIDGE
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REVISIONS			REVISIONS		
Date	By	Description	Date	By	Description

SEAL:	
Drawn by	KTL 5-95
Checked by	MRC 5-95
Designed by	TJF 5-95
Checked by	RMC 5-95
Approved by	T. J. FARRELL

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2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

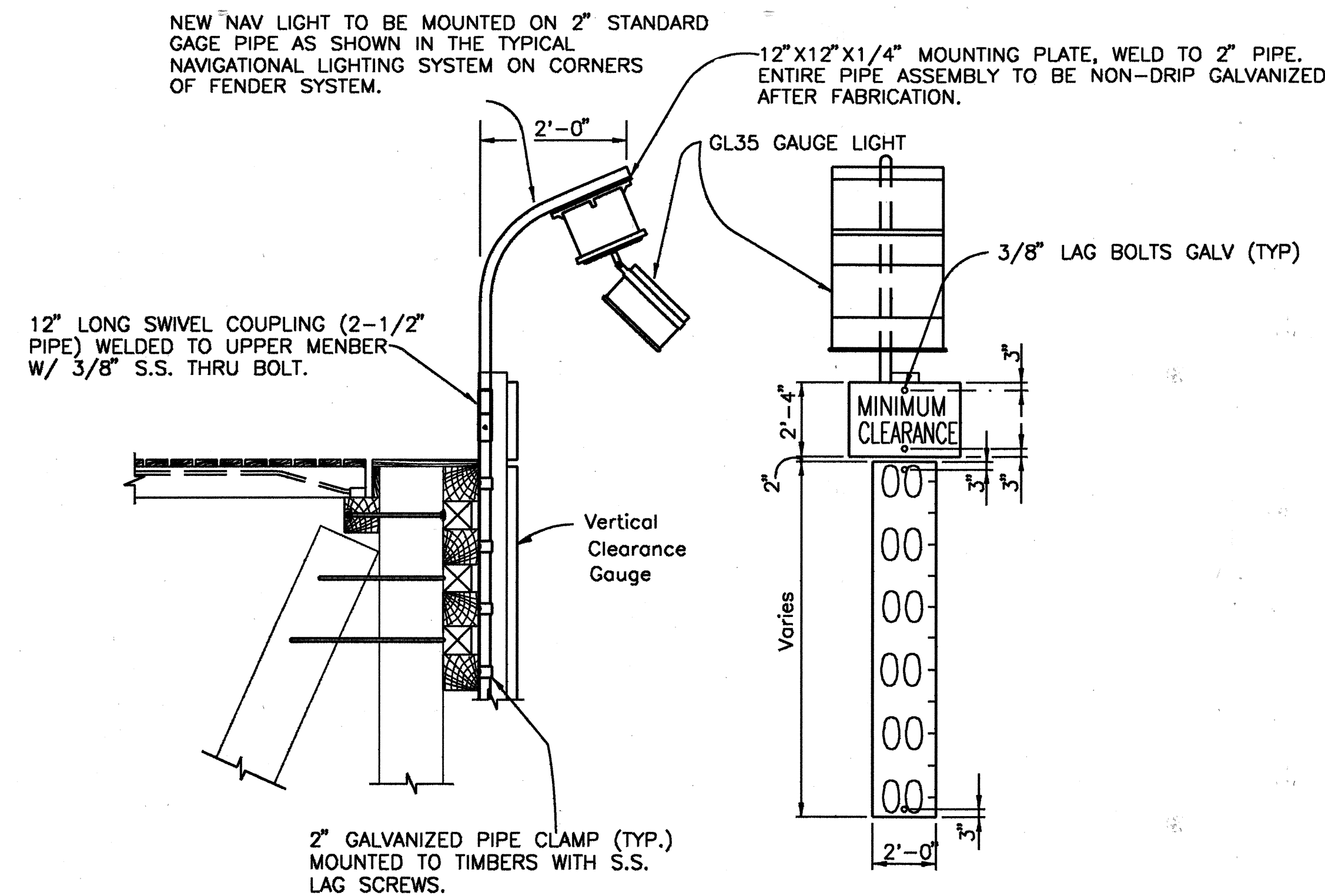


**PINELLAS COUNTY
DEPARTMENT OF
PUBLIC WORKS**

SHEET TITLE:	TRAFFIC CONTROL DEVICES FOR MOVABLE SPAN BRIDGE SIGNALS
PROJECT NAME:	BECKETT BRIDGE REPAIRS

SHEET
A-6

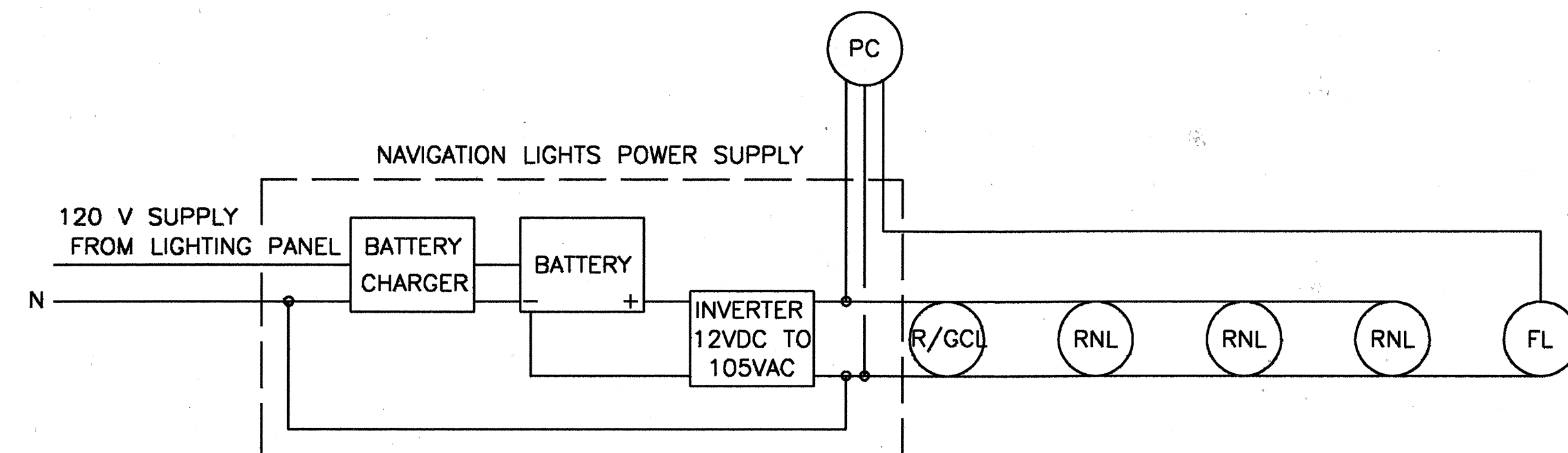
Timothy J. Farrell



GAUGE LIGHT

CLEARANCE GAUGE DETAILS

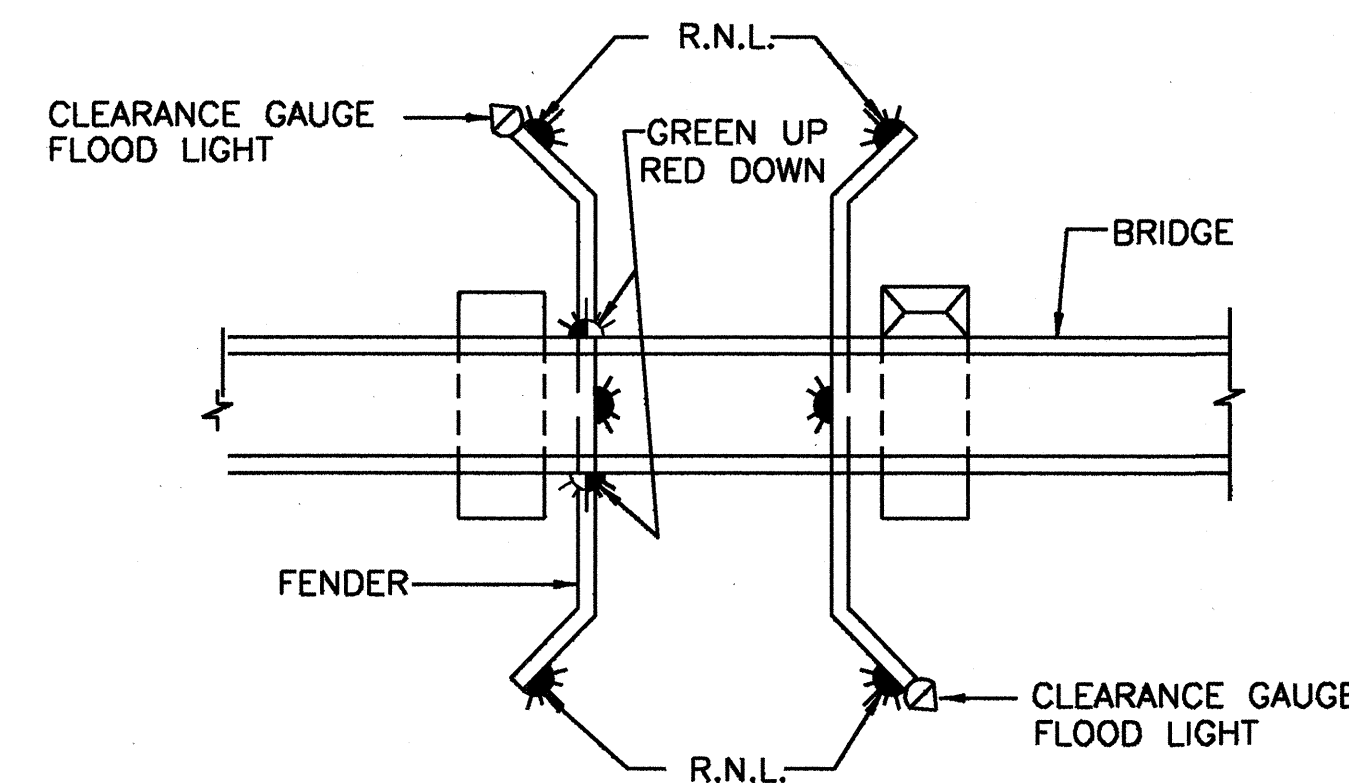
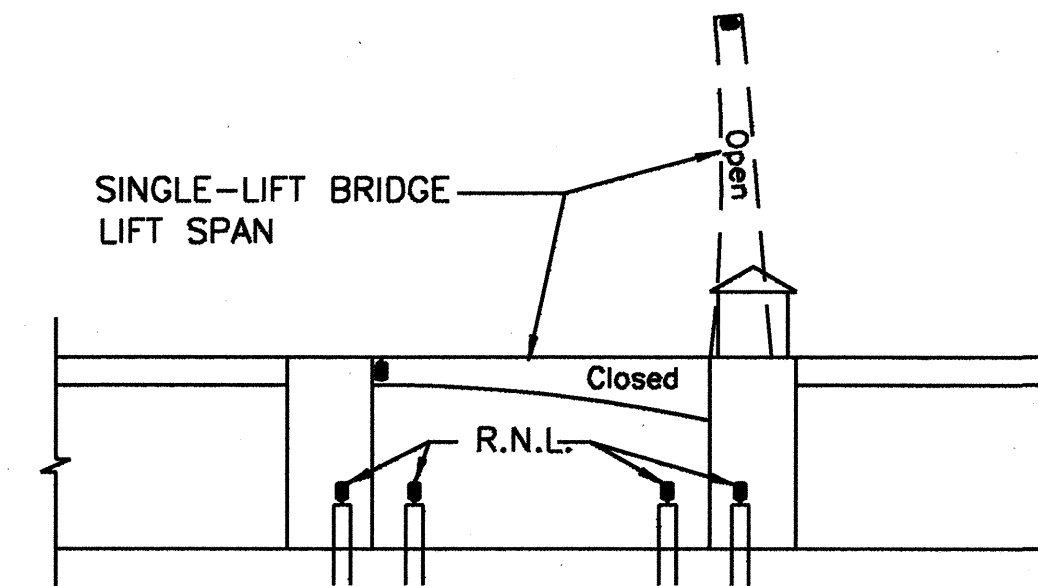
NUMBERED CLEARANCE GAUGE TO BE FURNISHED BY THE CONTRACTOR. CONTRACTOR SHALL VERIFY IN FIELD THAT THE CLEARANCE OF THE BRIDGE AGREES WITH READINGS OF TARGET. IF NOT, THE TARGET WILL BE RESET.



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.

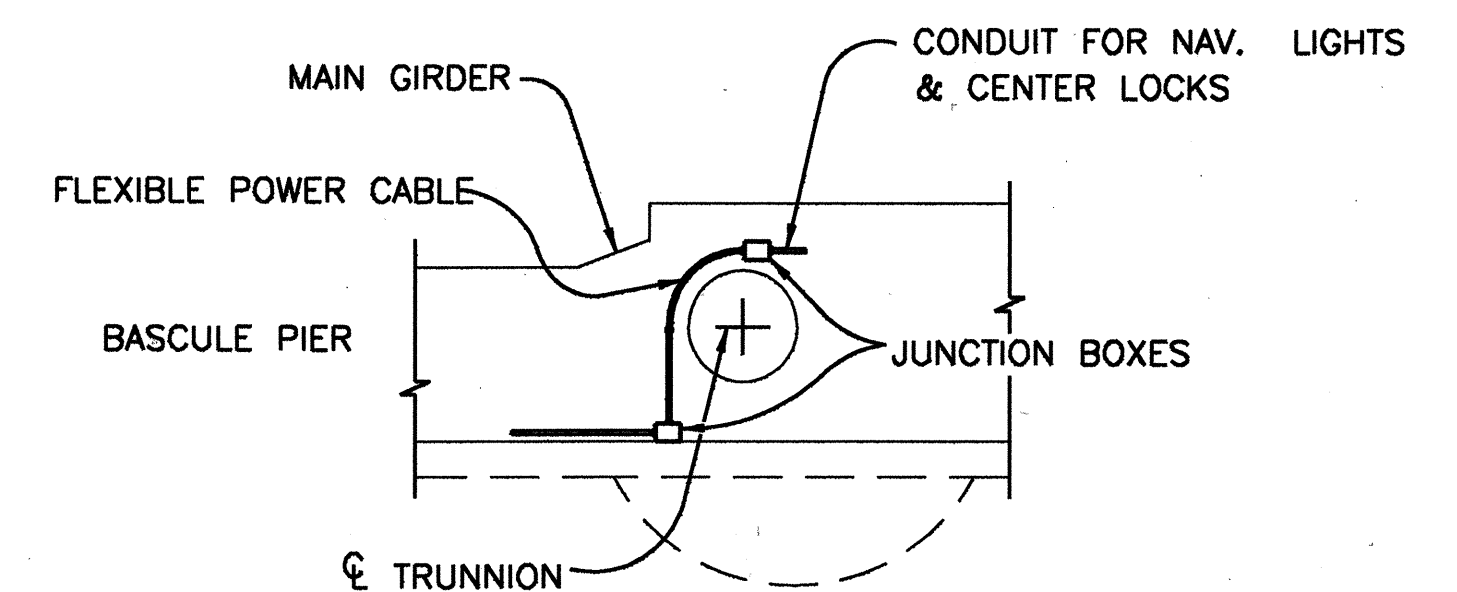
R/GCL - RED/GREEN CHANNEL LIGHT RNL - RED NAVIGATION LIGHT
FL - CLEARANCE GAUGE FLOODLIGHT PC - PHOTOCELL

TYPICAL LAYOUT OF NAVIGATION LIGHTS
FOR BASCULE BRIDGE



TYPICAL BASCULE BRIDGE
NAVIGATION LIGHT SYSTEM
SINGLE LEAF

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



BASCULE BRIDGE FLEXIBLE
CABLE ARRANGEMENT

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:\94065\CADD\BRIDGE
C:\WORK\510 08/07/95 15:03:39 ALC PRODUCED BY DSA CADD SYSTEM

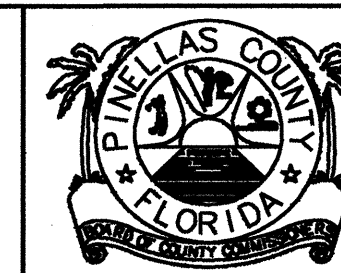
REVISIONS			REVISIONS		
Date	By	Description	Date	By	Description

SEAL:

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



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



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

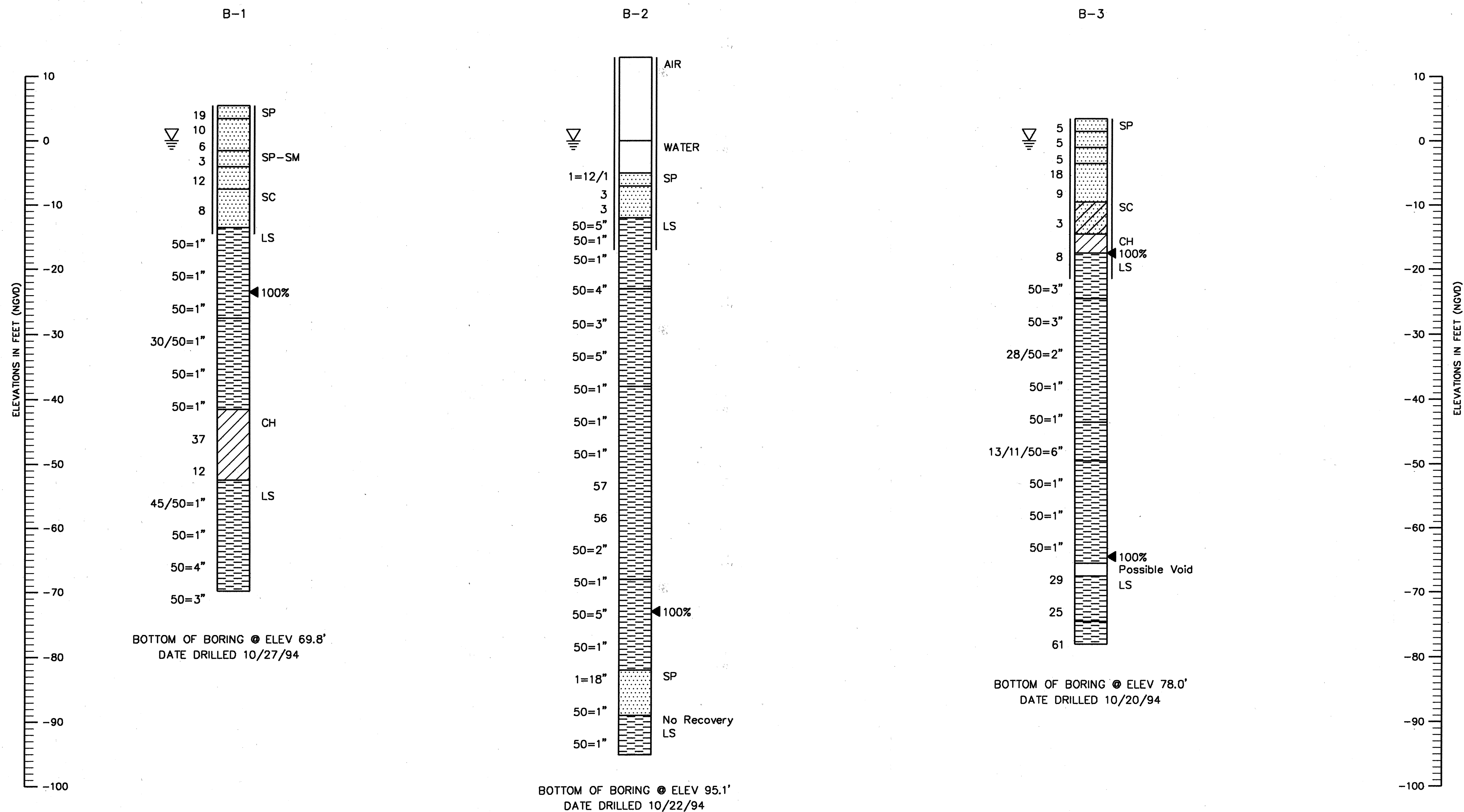
-  = Water Table @ end of drilling
-  = Casing used
-  = Shelby Tube
-  = Percent Loss of Circulation

ENVIRONMENTAL CLASSIFICATION

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

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

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

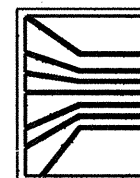


R:\94065\CADD\BRIDG
SOIL BORE

REVISIONS			REVISIONS		
Date	By	Description	Date	By	Description

SEAL:

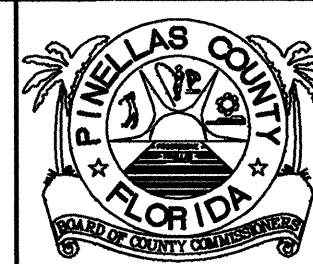
	Names	Dates
Drawn by	TEJ	11-94
Checked by	LDS	11-94
Designed by	LDS	11-94
Checked by	KDB	11-94
Approved by	K. D. BENNETT	



WILLIAMS EARTH SCIENCES, INC.

CORPORATE OFFICE:
10600 Endeavour Way, Largo, FL 34647

Largo:	(813) 541-3444	FAX: (813) 541-1510
Jacksonville:	(904) 262-8852	FAX: (904) 262-8856
Panama City:	(904) 747-9419	FAX: (904) 763-2455



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 1ATHESE 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 2THESE 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.

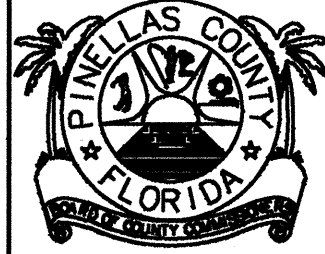
THE BRIDGE IS REQUIRED TO BE OPEN TO ALLOW BOTH VEHICULAR AND PEDESTRIAN TRAFFIC TO CROSS ON JANUARY 6, 1996.

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

ITEM	UNIT	QUANTITY	
		P	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	

BRIDGE NO. 154000

RA#4069 CADD DETOUR
C:\WORK\700NOTES 06/06/95 10:14:15 AEW PRODUCED BY DSA CADD SYSTEM

REVISIONS			REVISIONS			SEAL:	Names	Dates	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
Date	By	Description	Date	By	Description										
							Drawn by	BST	5-95						
							Checked by	AAS	5-95						
							Designed by	BST	5-95						
							Checked by	AAS	5-95						
							Approved by	ALAN SOROORY							

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.

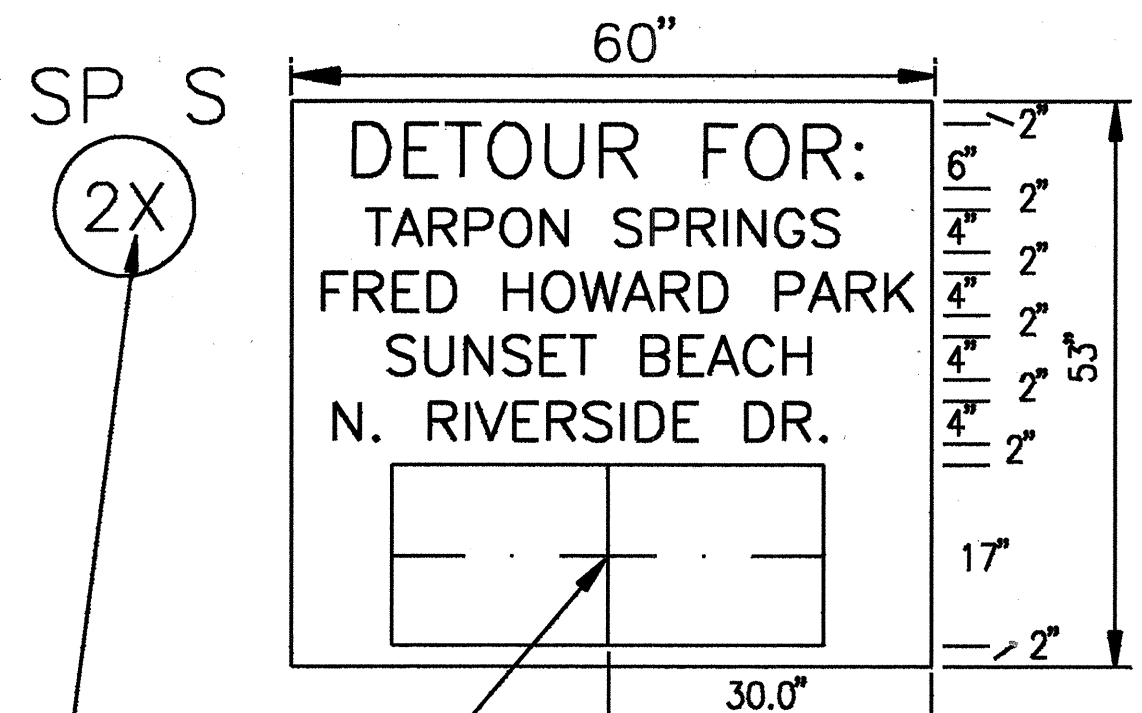
VMS #1 DURING

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

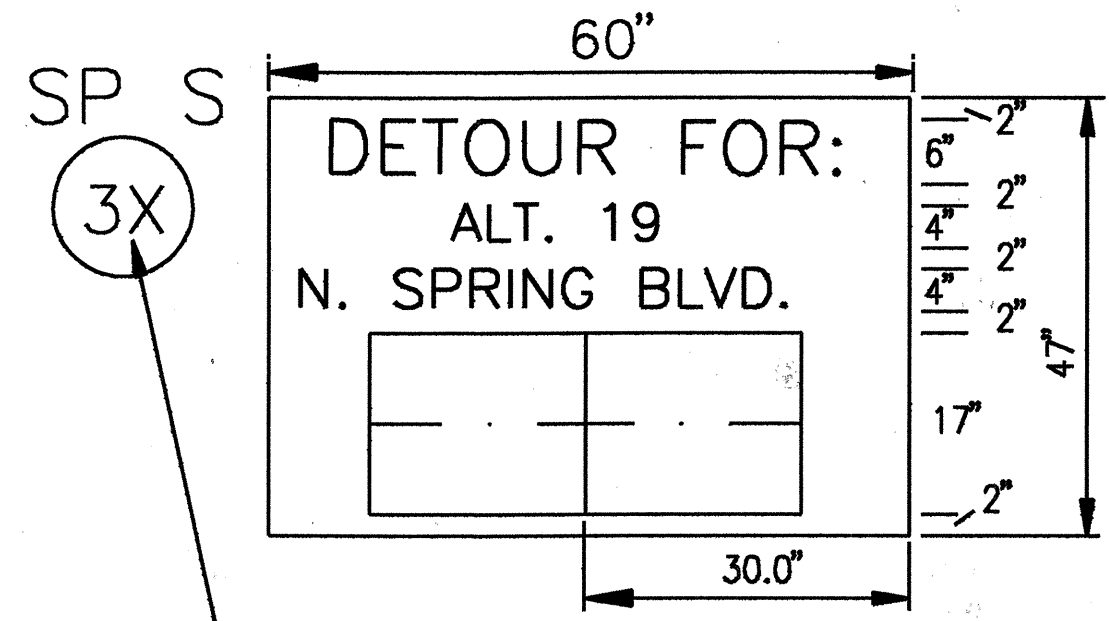
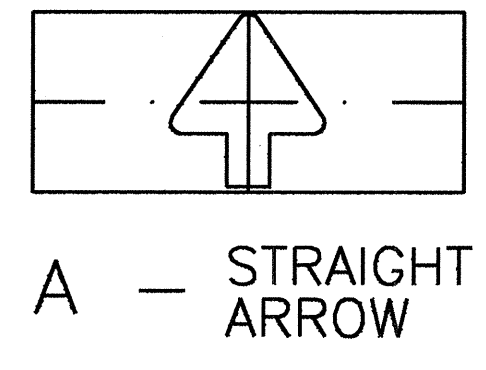
STEP 2
TO BE IN PLACE DURING DETOUR

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.

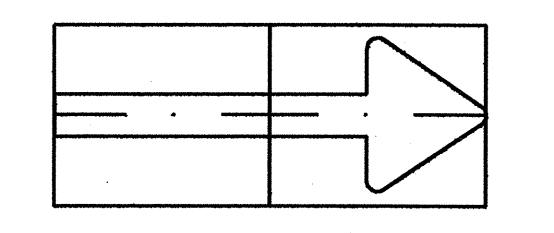


LETTER DENOTES WHICH ARROW
TO BE UTILIZED, SEE ARROW
DETAILS BELOW

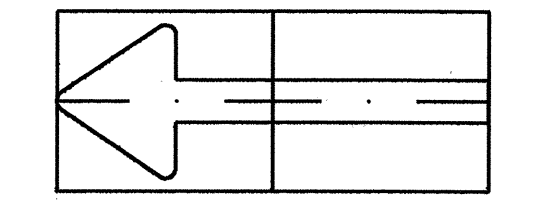


LETTER DENOTES WHICH ARROW
TO BE UTILIZED, SEE ARROW
DETAILS BELOW

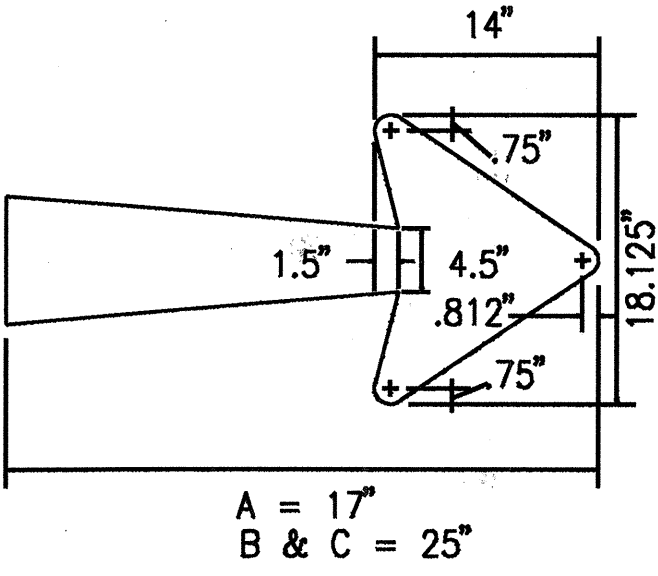
DETAILS



B — RIGHT ARROW



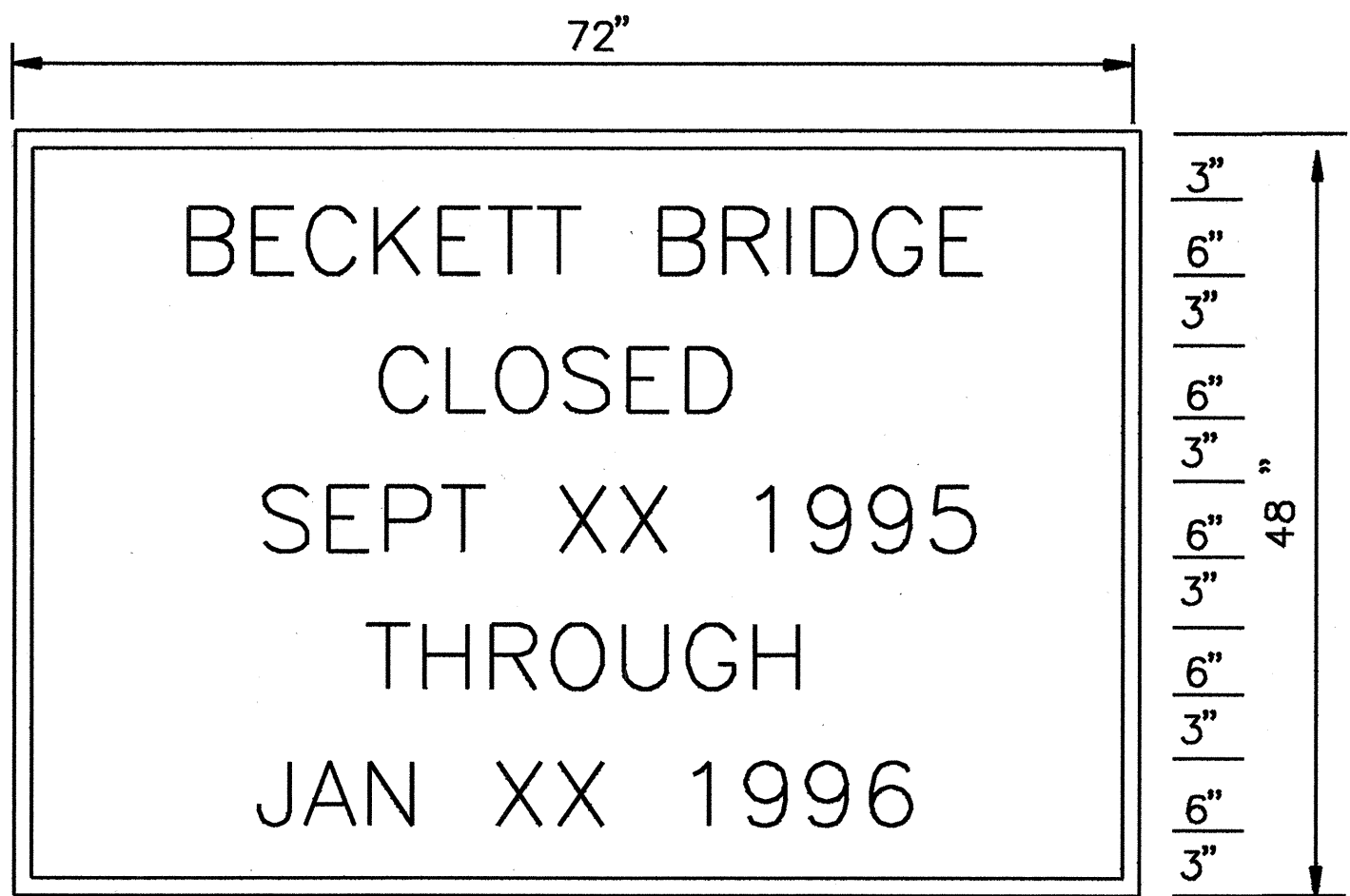
C — LEFT ARROW



A = 17"
B & C = 25"

SPECIAL SIGN DETAIL

SP S
1



6" D SERIES LETTERING

LT MARGIN	LETTERS/DIMENSION	RT MARGIN
2.45"	B E C K E T T B R I D G E	2.45"
21.2"	C L O S E D	21.2"
7.4"	S E P T X X 1 9 9 5	7.4"
17.95"	T H R O U G H	17.95"
9.45"	J A N X X 1 9 9 6	9.45"

6" D SERIES LETTERING

LT MARGIN	LETTERS/DIMENSION	RT MARGIN
2.9"	D E T O U R F O R :	2.9"

4" D SERIES LETTERING

LT MARGIN	LETTERS/DIMENSION	RT MARG
6.8"	T A R P O N S P R I N G S	6.8"
2.3"	F R E D H O W A R D P A R K	2.2"
9.8"	S U N S E T B E A C H	9.8"
8.2"	N R I V E R S I D E D R	8.2"
21.1"	A L T 1 9	21.1"
8.9"	N S P R I N G B L V D	8.9"

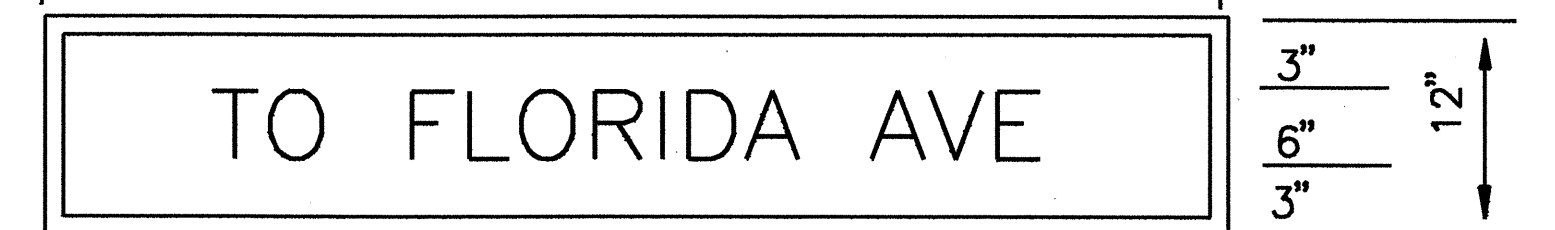
56"



4" D SERIES LETTERING

LT MARGIN	LETTERS/DIMENSION	RT MARGIN
1.9"	T O N S P R I N G B L V D	1.9"

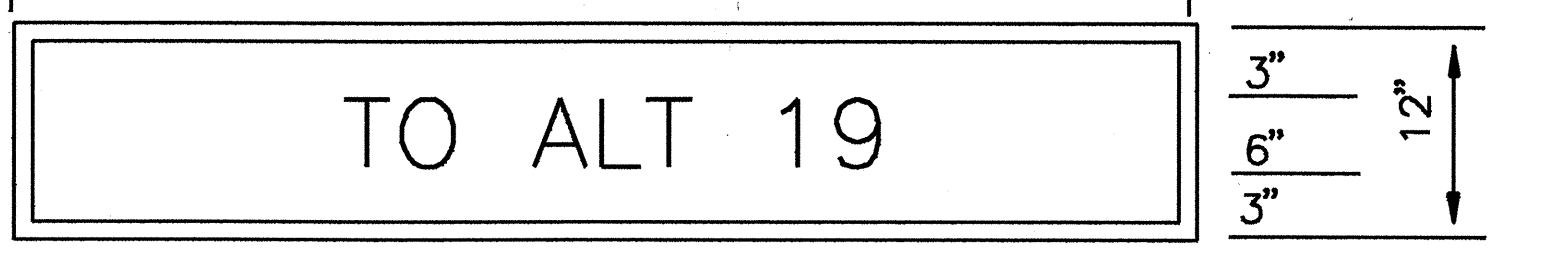
71 "



6" D SERIES LETTERING

LT MARGIN	LETTERS/DIMENSION	RT MARGIN
1.2"	T O F L O R I D A A V E	1.2"

46"



6" D SERIES LETTERING

LT MARGIN	LETTERS/DIMENSION	RT MARGIN
2.15"	T O A L T 1 9	2.15"

47"



4" D SERIES LETTERING

LT MARGIN	LETTERS/DIMENSION	RT MARGIN
1.85"	T O N R I V E R S I D E	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).

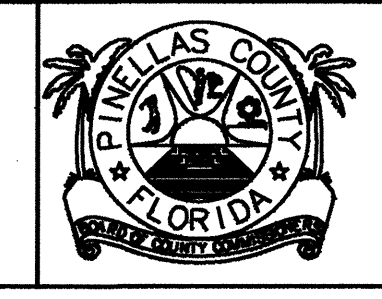
BRIDGE NO. 154000

RA04005/CADD/DETOUR
C:\WORK\7001\08/08/95 09:47:51 AEV PRODUCED BY DSA CADD SYSTEM

REVISIONS		REVISIONS		SEAL:
Date	By	Date	By	

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

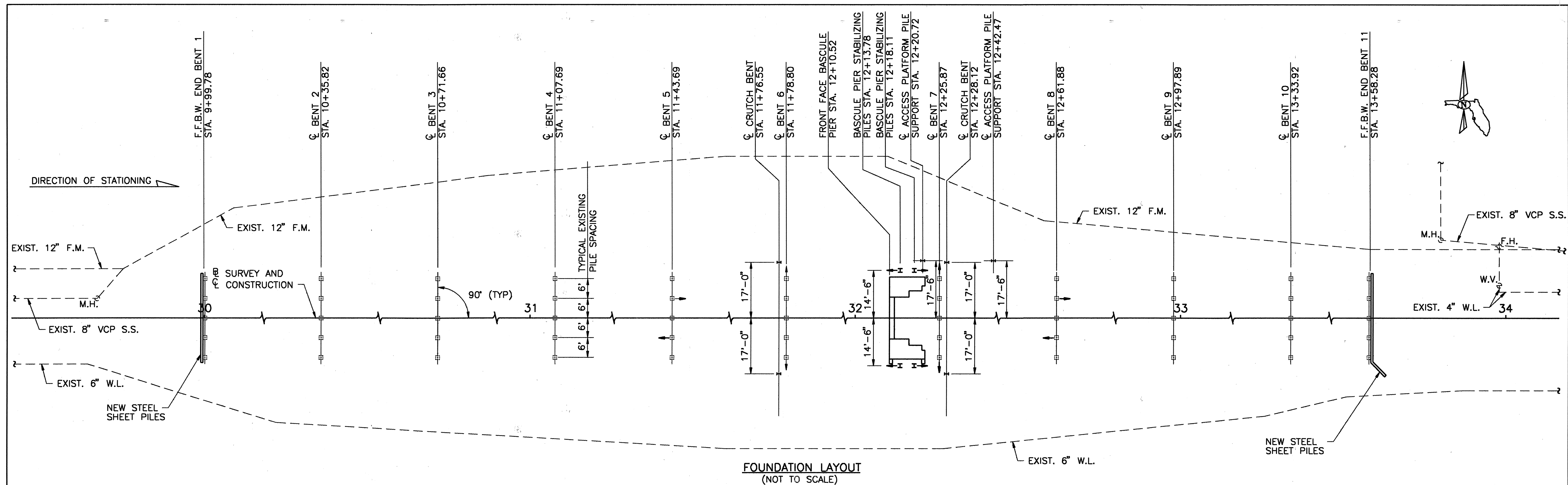
DSA GROUP INC.
DSA GROUP, INC.
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607



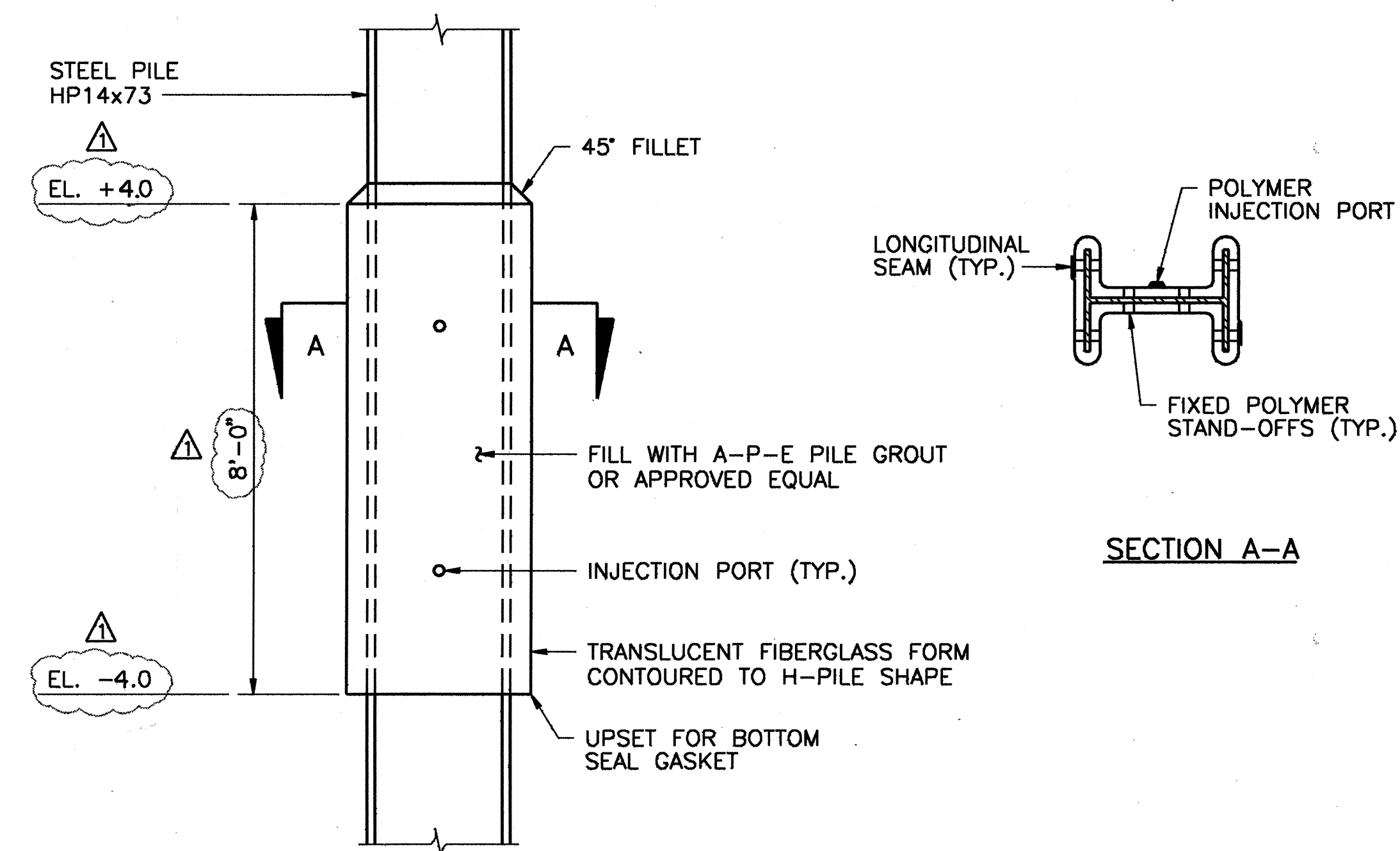
PINELLAS COUNTY
DEPARTMENT OF
PUBLIC WORKS

SHEET TITLE:	TRAFFIC CONTROL PLAN (3)
PROJECT NAME:	BECKETT BRIDGE REPAIRS

Drawing No.
A-11



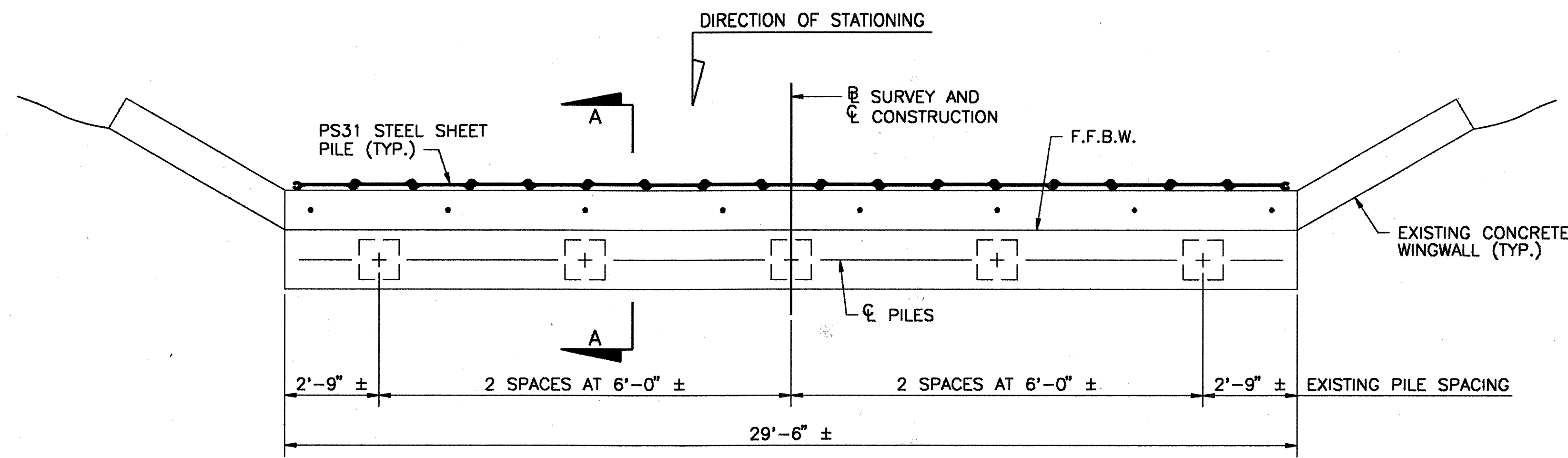
PILE INSTALLATION TABLE				
LOCATION	STATION	PILE SIZE (IN.)	DESIGN LOAD (TONS)	MIN. TIP EL. (FT.)
CRUTCH BENT-BENT 6	11+76.55	HP14x73	70	-35.0
BASCULE PIER STABILIZING	12+13.78	HP14x73	70	-35.0
BASCULE PIER STABILIZING	12+18.11	HP14x73	70	-35.0
ACCESS PLATFORM	12+20.72	HP14x73	70	-35.0
ACCESS PLATFORM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



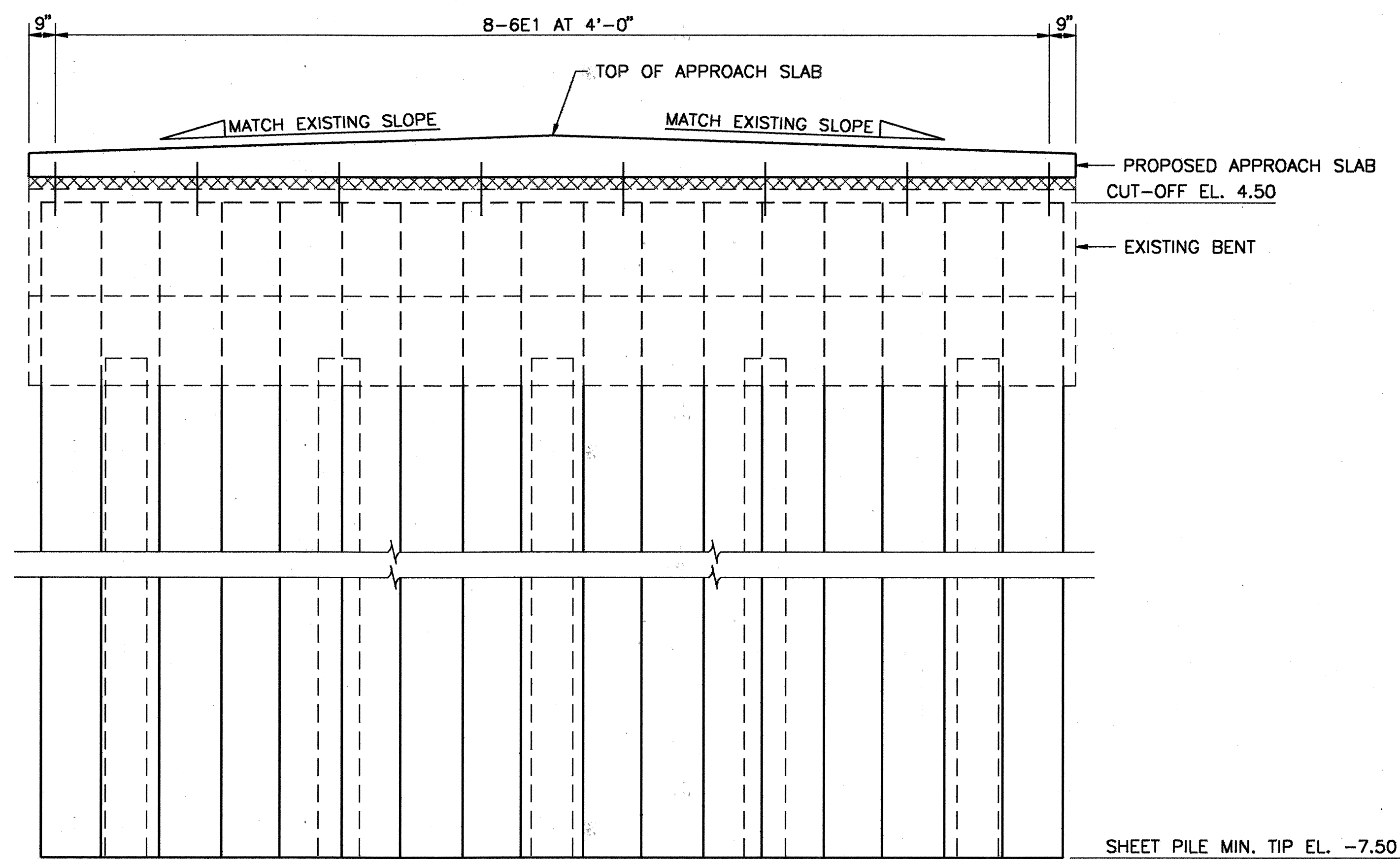
STEEL PILE JACKET DETAILS

- NOTES:
1. [Symbol] = EXISTING 14\"/>

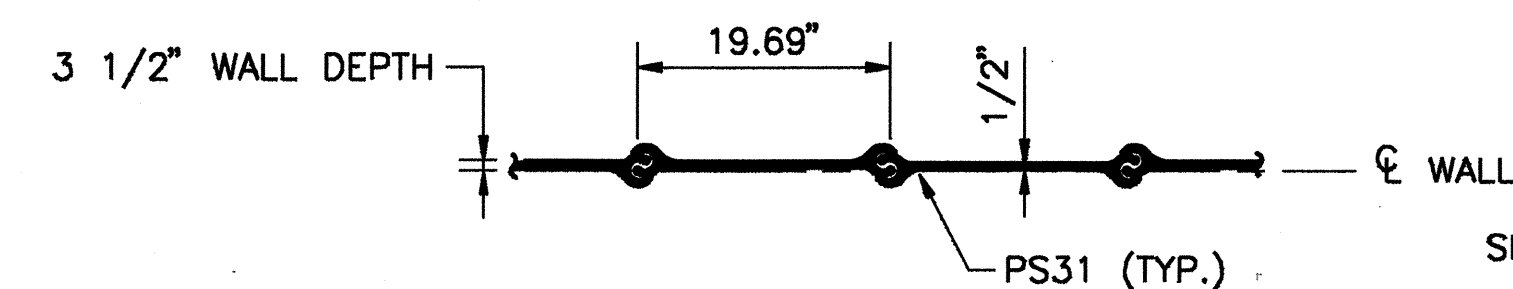
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REVISIONS						SEAL:		Names		Dates		DSAGROUP INC.		DSAGROUP, INC. 2005 PAN AM CIRCLE TAMPA, FLORIDA 33607		PINELLAS COUNTY DEPARTMENT OF PUBLIC WORKS		SHEET TITLE: FOUNDATION LAYOUT AND PILE JACKET DETAILS		SHEET S-1	
Date		By		Description		Date		By		Description		Drawn by		TJL		5-95		PROJECT NAME: BECKETT BRIDGE REPAIRS			
2/12/96		RMC		PILE JACKET DIMENSION INCREASED ADDENDUM NO. 2								Checked by		TJF		5-95					
												Designed by		MRC		5-95					
												Checked by		BCW		5-95					
												Approved by		T. J. FARRELL							



PLAN



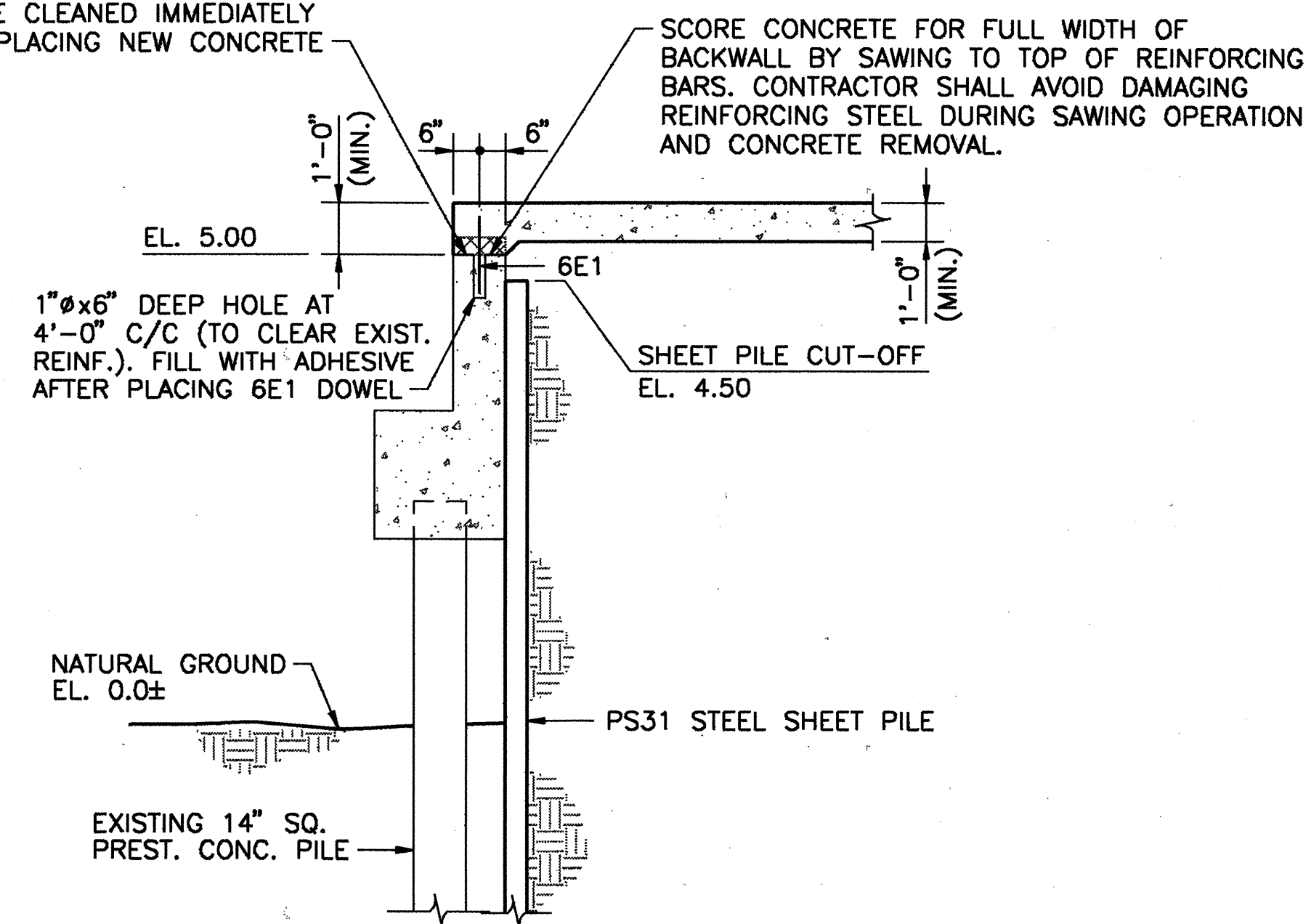
ELEVATION



SHEET PILE PROPERTIES:
 $A = 14.96 \text{ in.}^2$
 $S = 3.30 \text{ in.}^3$
 $I = 5.30 \text{ in.}^4$

STEEL SHEET PILE DETAILS

ALL CONTACTING SURFACES BETWEEN OLD AND NEW CONCRETE SHALL BE CLEANED IMMEDIATELY BEFORE PLACING NEW CONCRETE



SECTION A-A

ESTIMATED QUANTITIES		
ITEM	UNIT	QUANTITY
SHEET PILING STEEL	SF	335

NOTES:

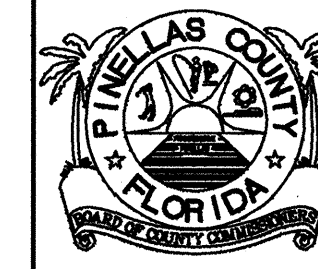
1. DENOTES EXISTING CONCRETE TO BE REMOVED.
2. TOP OF APPROACH SLAB SHALL MATCH TOP OF CONCRETE DECK AT FFBW.
3. COST OF CONCRETE REMOVAL SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR APPROACH SLABS CONCRETE, ITEM NO. 360-1.
4. FOR APPROACH SLAB DETAILS, SEE SHEET S-16.

R:\4080\CAO\BRODGE\WORK\1504\10/16/95 11:51:38 KTL PRODUCED BY DSA CADD SYSTEM

REVISIONS			REVISIONS			SEAL:	DESIGNED BY			DRAWN BY	CHECKED BY	DESIGNED BY	CHECKED BY	APPROVED BY	DATE	PROJECT NAME	SHEET TITLE	SHEET
Date	By	Description	Date	By	Description		Drawn by	Checked by	Designed by									
							KTL	MRC	MRC	TJF	T.J. FARRELL							

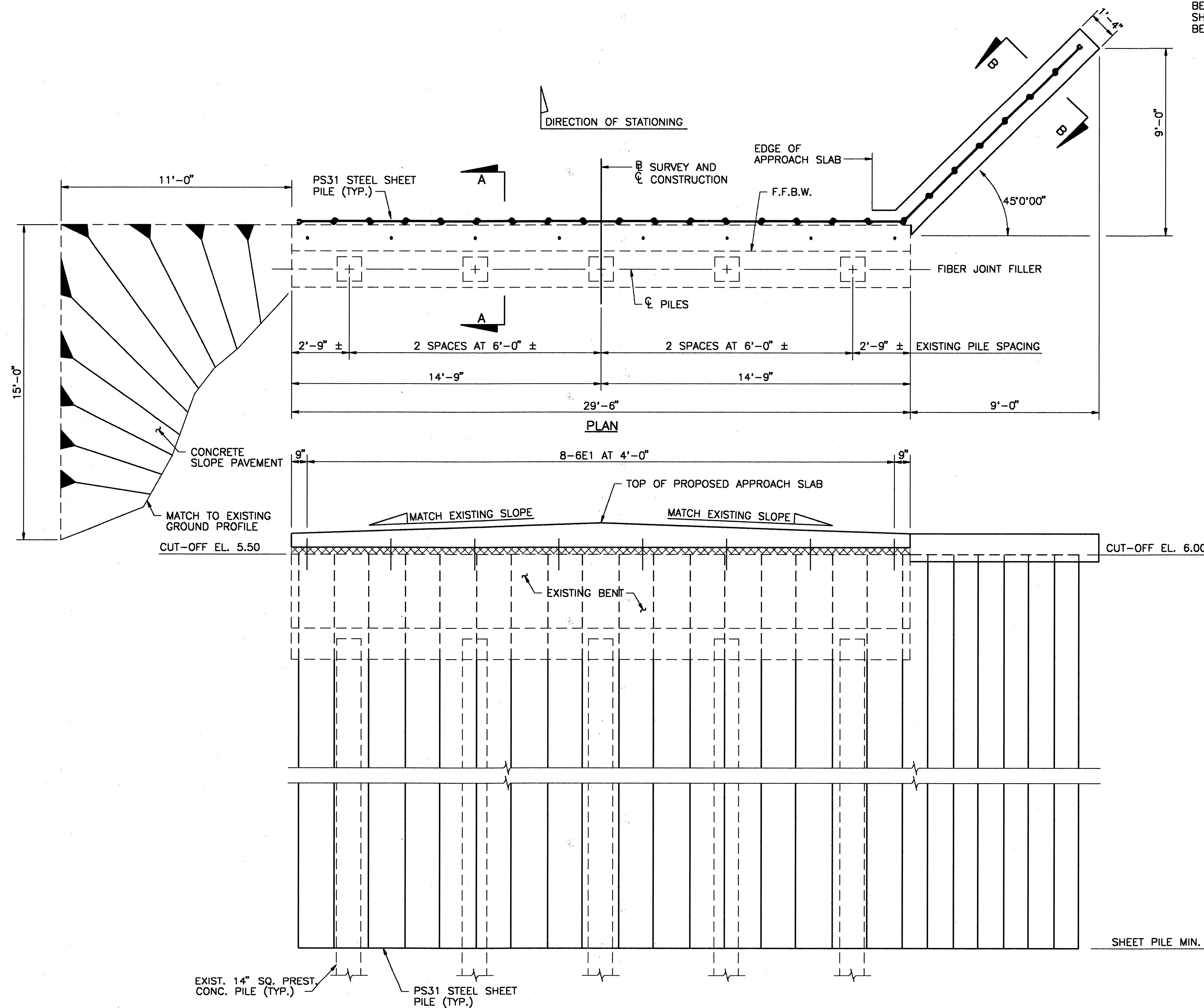


DSA GROUP, INC.
 2005 PAN AM CIRCLE
 TAMPA, FLORIDA 33607



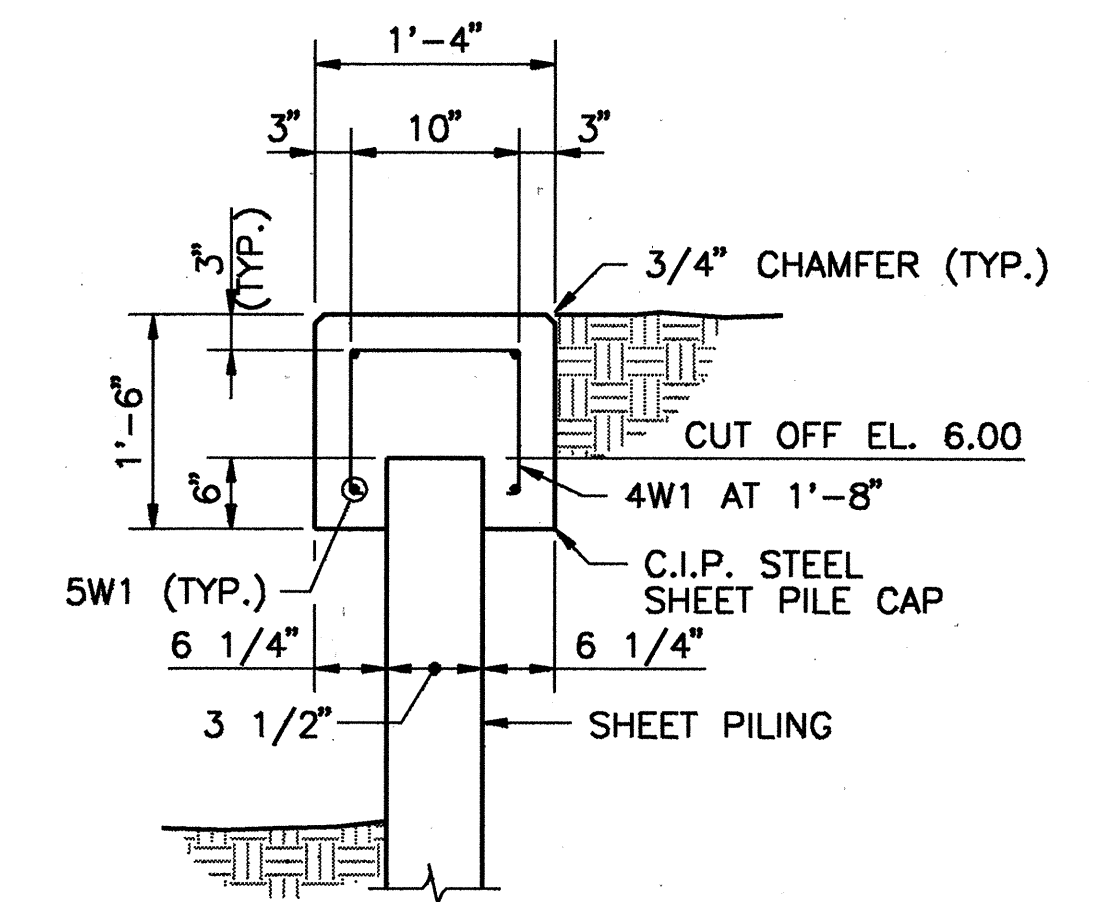
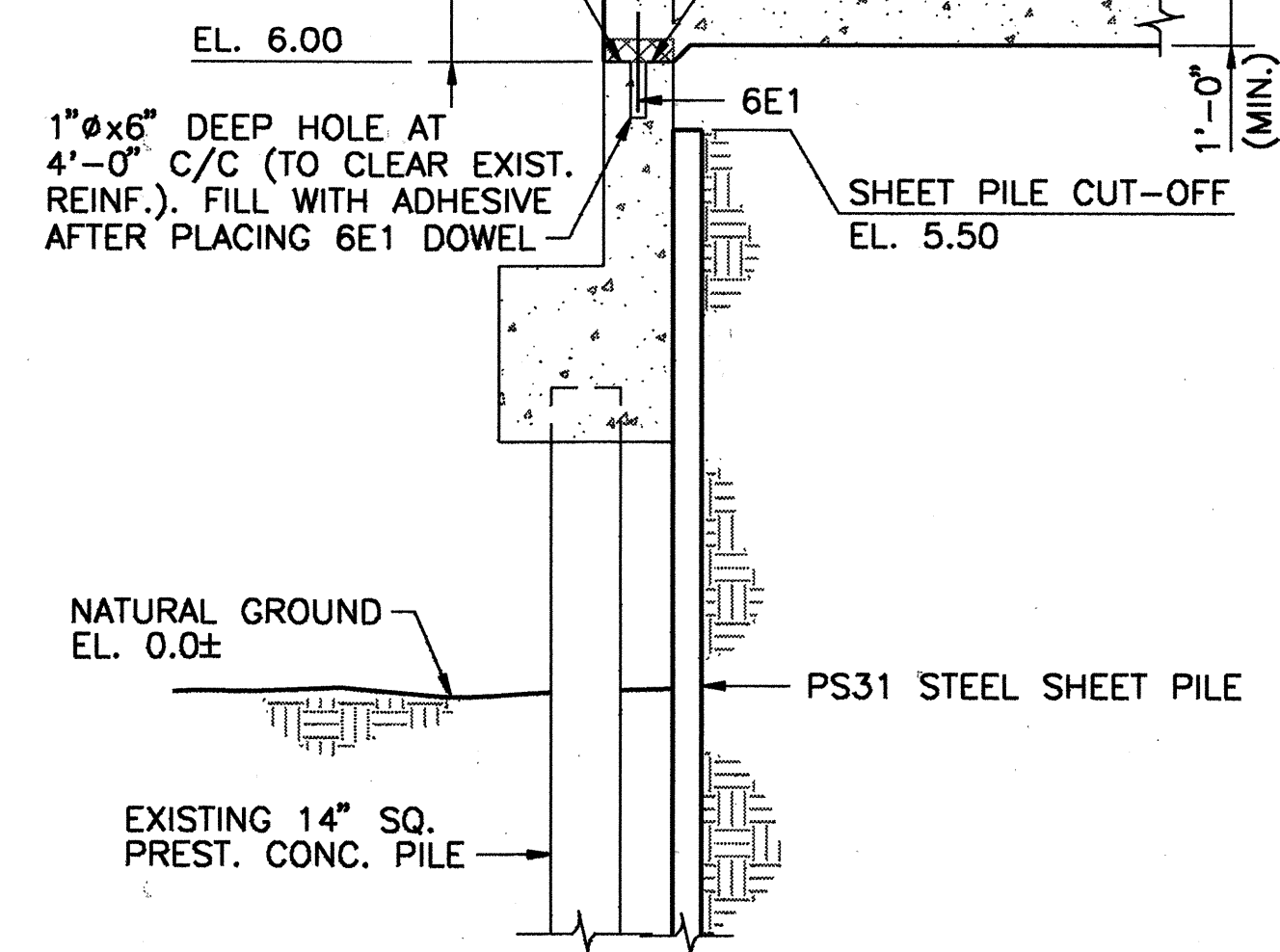
PINELLAS COUNTY
 DEPARTMENT OF
 PUBLIC WORKS

SHEET TITLE:	BULKHEAD DETAILS END BENT 1	S-2
PROJECT NAME:	BECKETT BRIDGE REPAIRS	



ALL CONTACTING SURFACES BETWEEN OLD AND NEW CONCRETE SHALL BE CLEANED IMMEDIATELY BEFORE PLACING NEW CONCRETE

SCORE CONCRETE FOR FULL WIDTH OF BACKWALL BY SAWING TO TOP OF REINFORCING BARS. CONTRACTOR SHALL AVOID DAMAGING REINFORCING STEEL DURING SAWING OPERATION AND CONCRETE REMOVAL.



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

- NOTES:
- FOR STEEL SHEET PILE DETAILS SEE SHEET S-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.
 - COST OF CONCRETE REMOVAL SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR APPROACH SLABS CONCRETE, ITEM NO. 360-1.

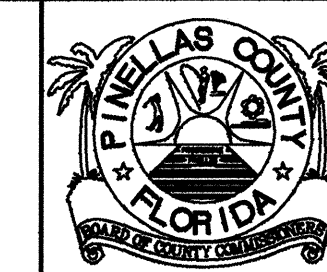
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REVISIONS			REVISIONS			SEAL:
Date	By	Description	Date	By	Description	

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



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



PINELLAS COUNTY
DEPARTMENT OF
PUBLIC WORKS

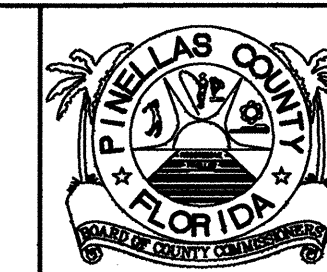
SHEET TITLE:	BULKHEAD DETAILS END BENT 11	SHEET S-3
PROJECT NAME:	BECKETT BRIDGE REPAIRS	



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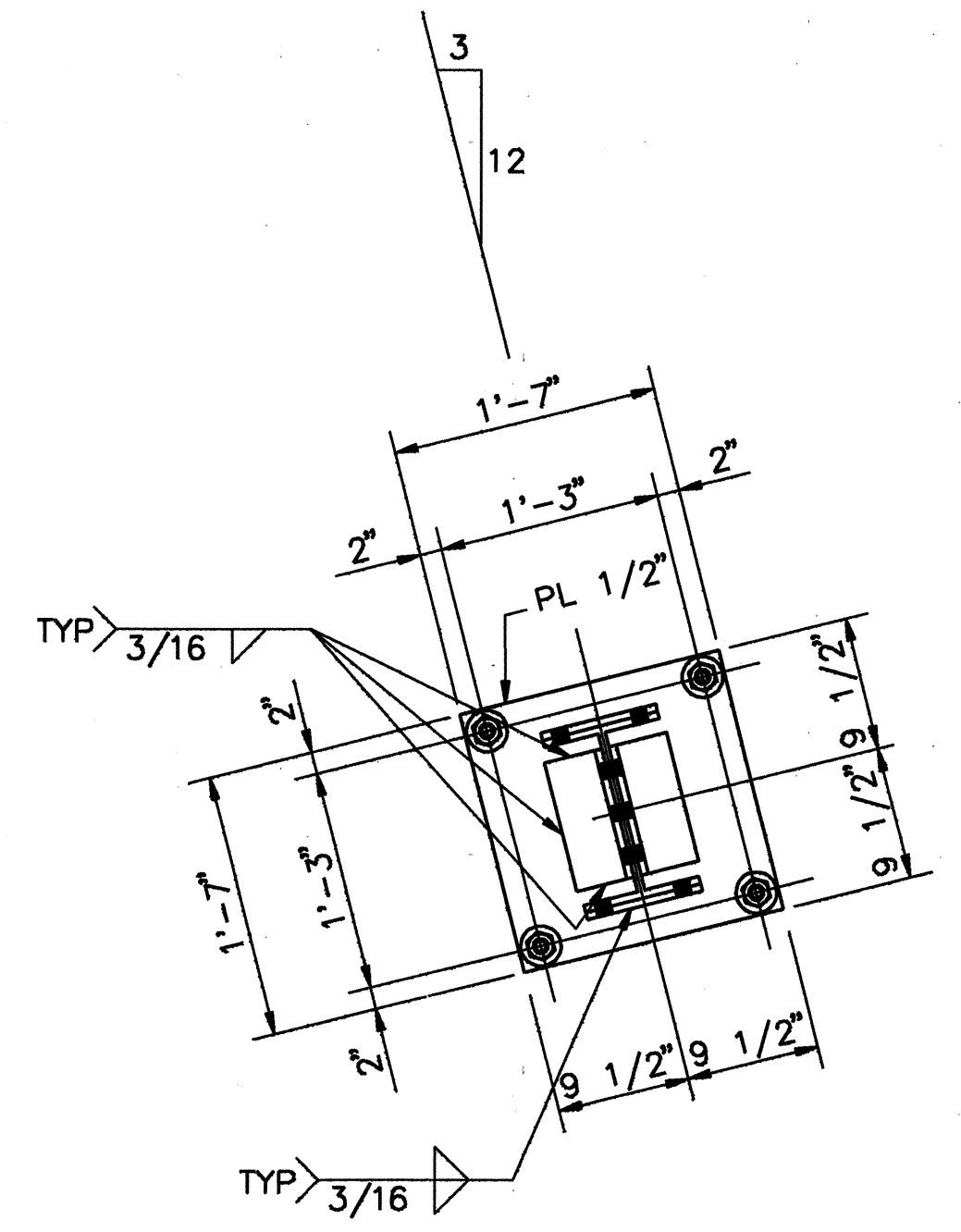
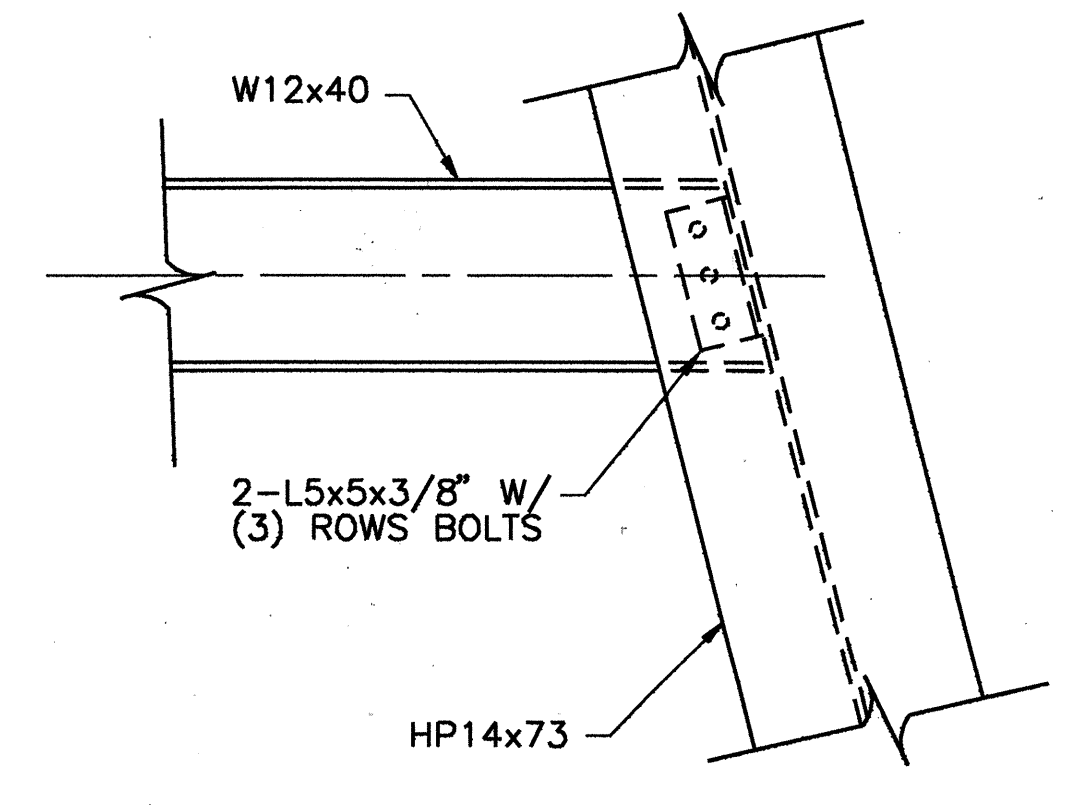
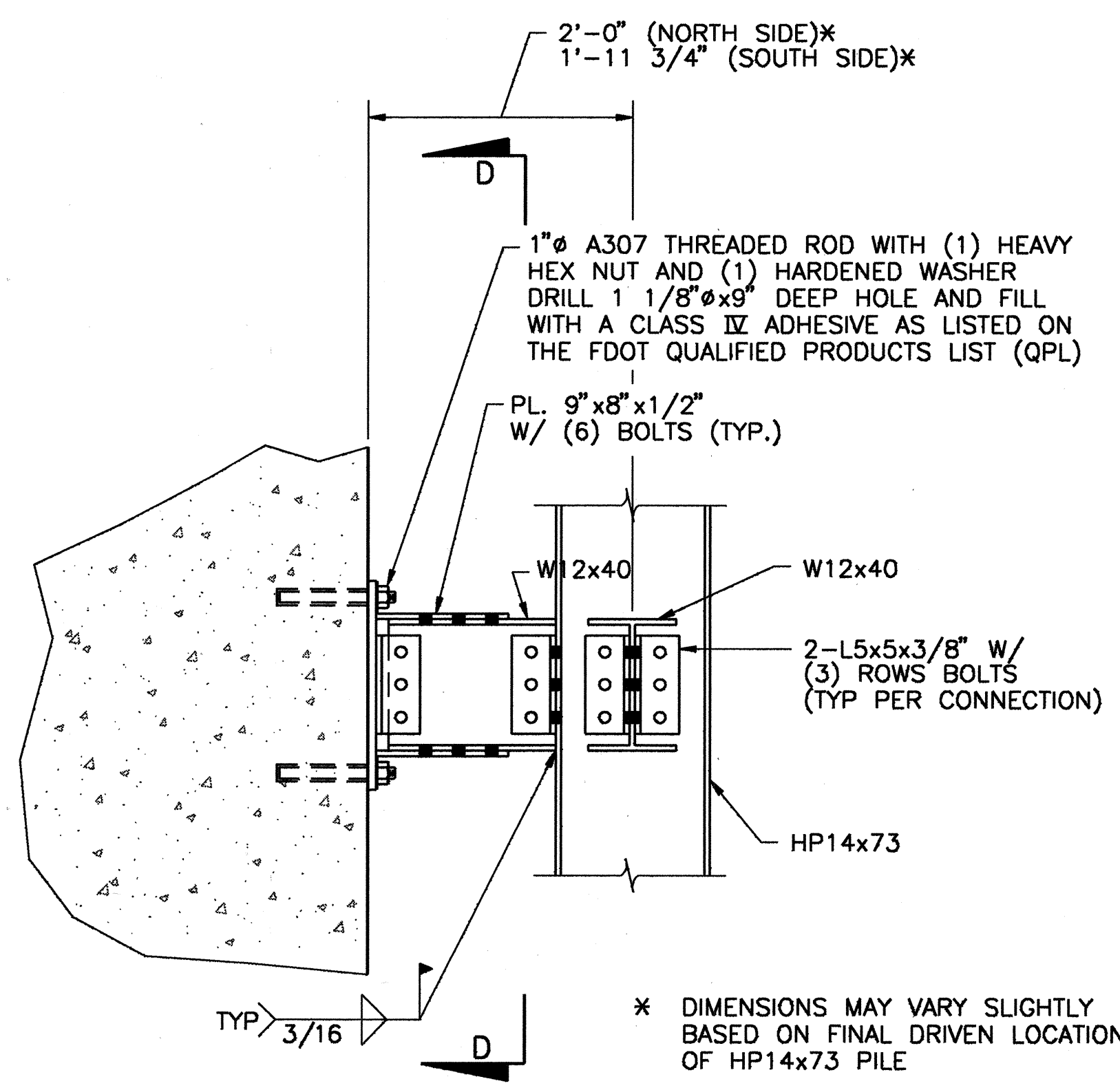
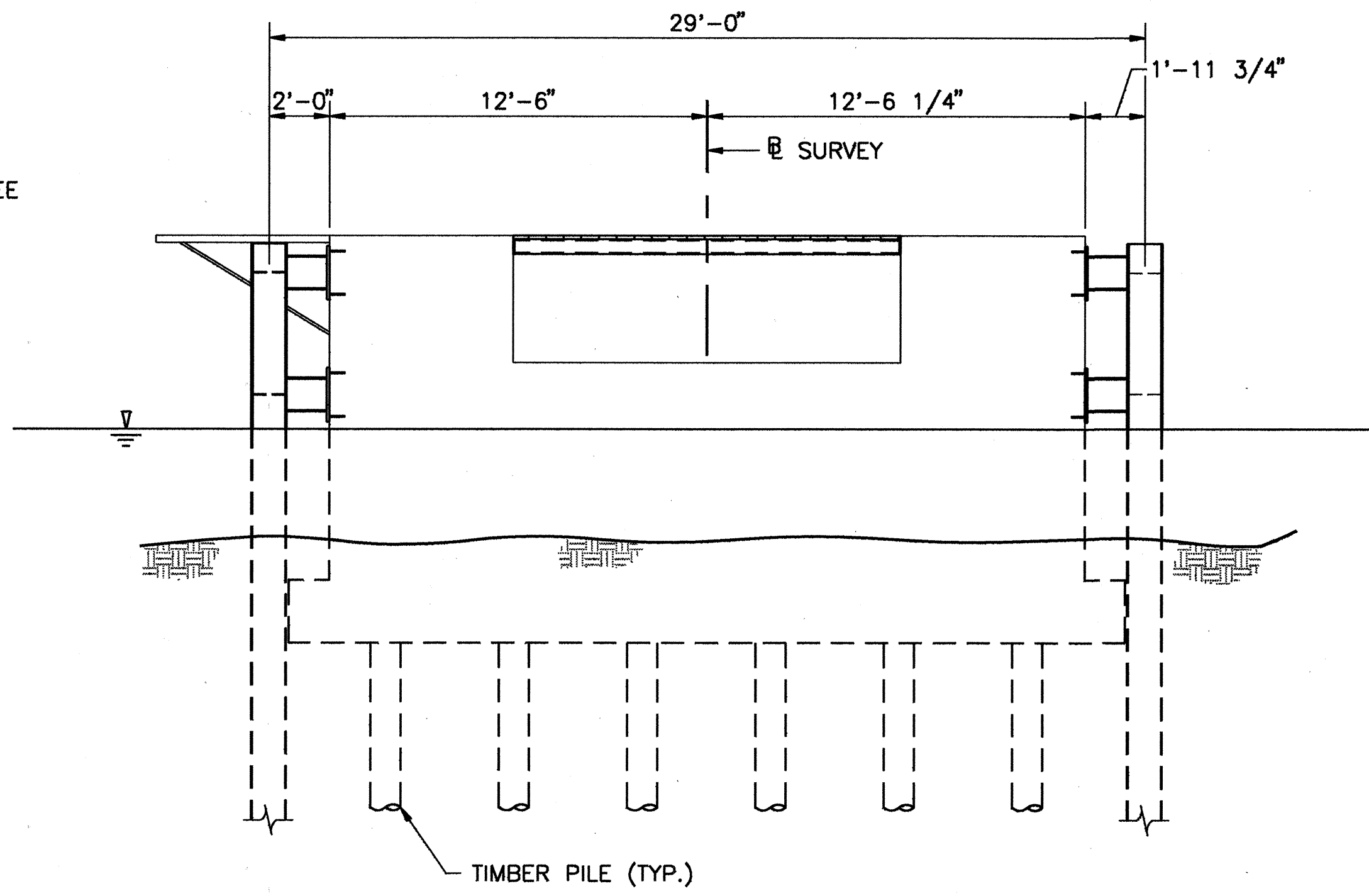
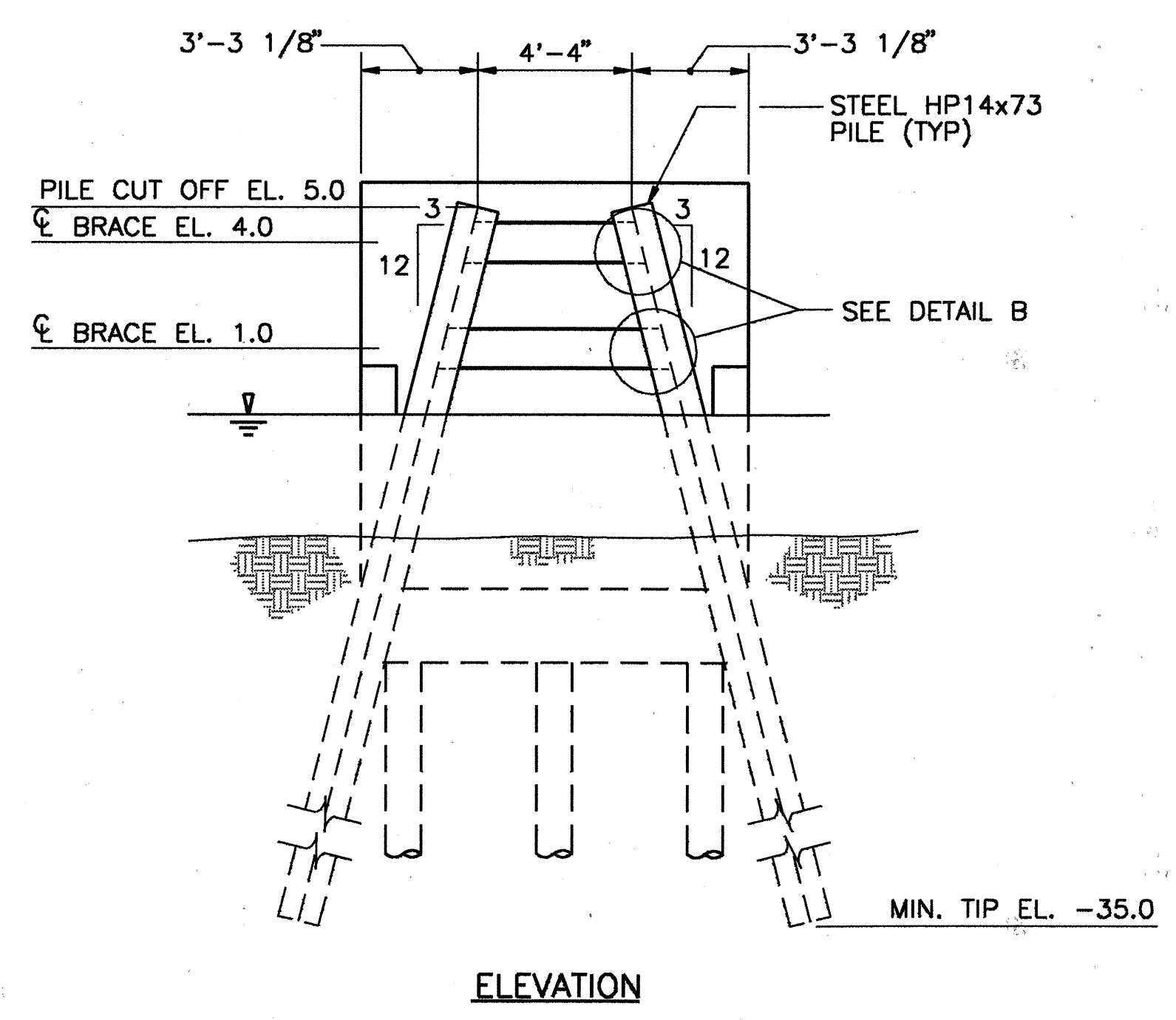
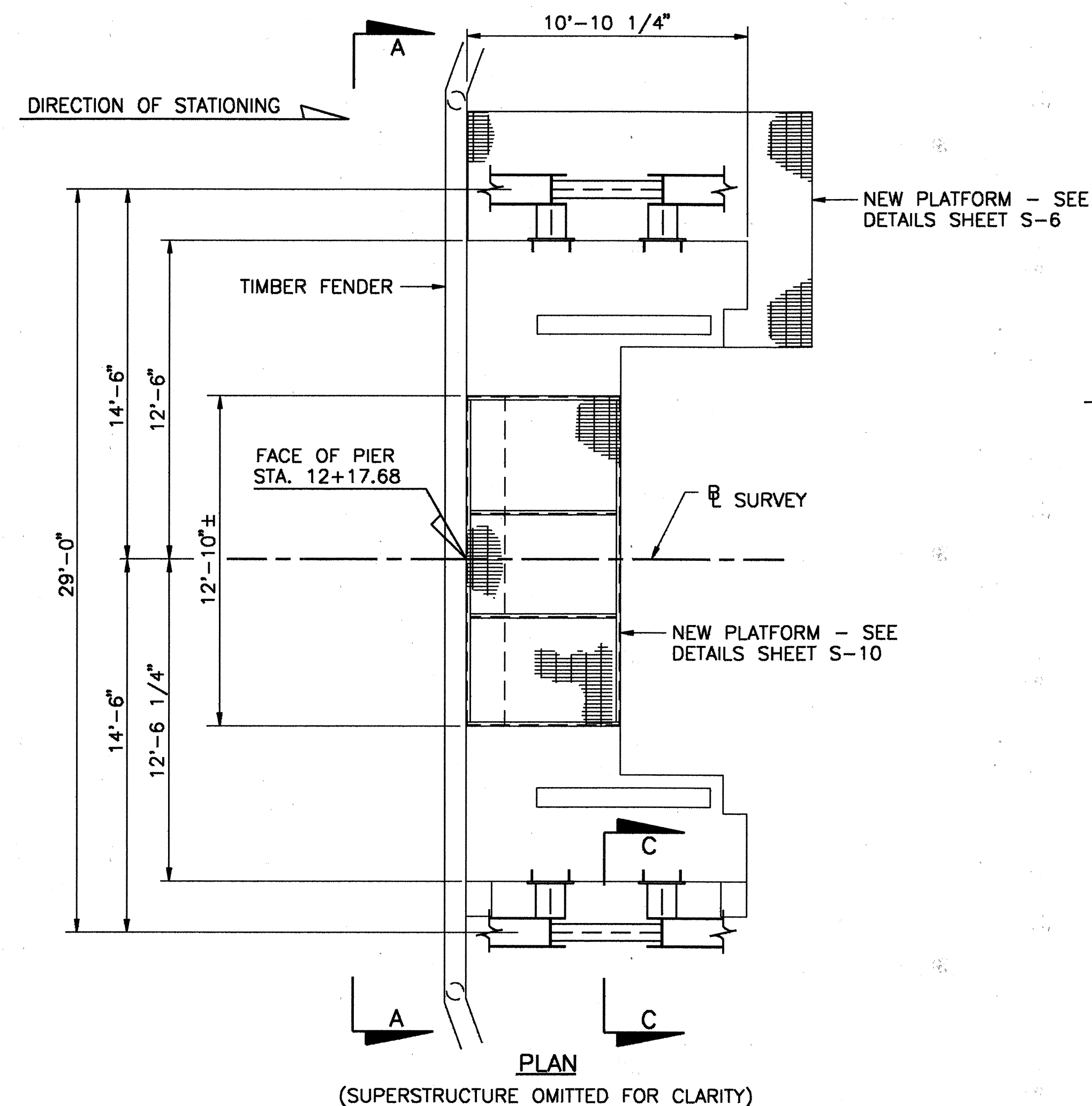
SEAL:

Timothy J. Farrell



SHEET TITLE: CRUTCH BENT DETAILS		SHEET S-4
PROJECT NAME: BECKETT BRIDGE REPAIRS		

S-4



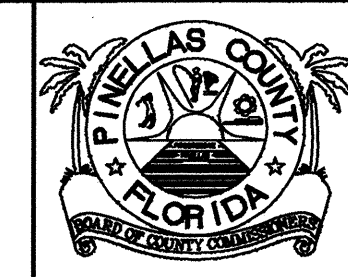
NOTE:
1. PAYMENT FOR BASCULE PIER STABILIZER BRACING AND CONNECTIONS SHALL BE PAID FOR UNDER PAY ITEM NO. 460-2-5 "STRUCTURAL STEEL (BASCULE LEAVES)".

R:\94055\CADD\BRIDGE
G:\WORK\18CRUTCH 07/28/95 14:28:50 ASV PRODUCED BY DSA CADD SYSTEM

REVISIONS			REVISIONS		
Date	By	Description	Date	By	Description

SEAL:		
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	

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

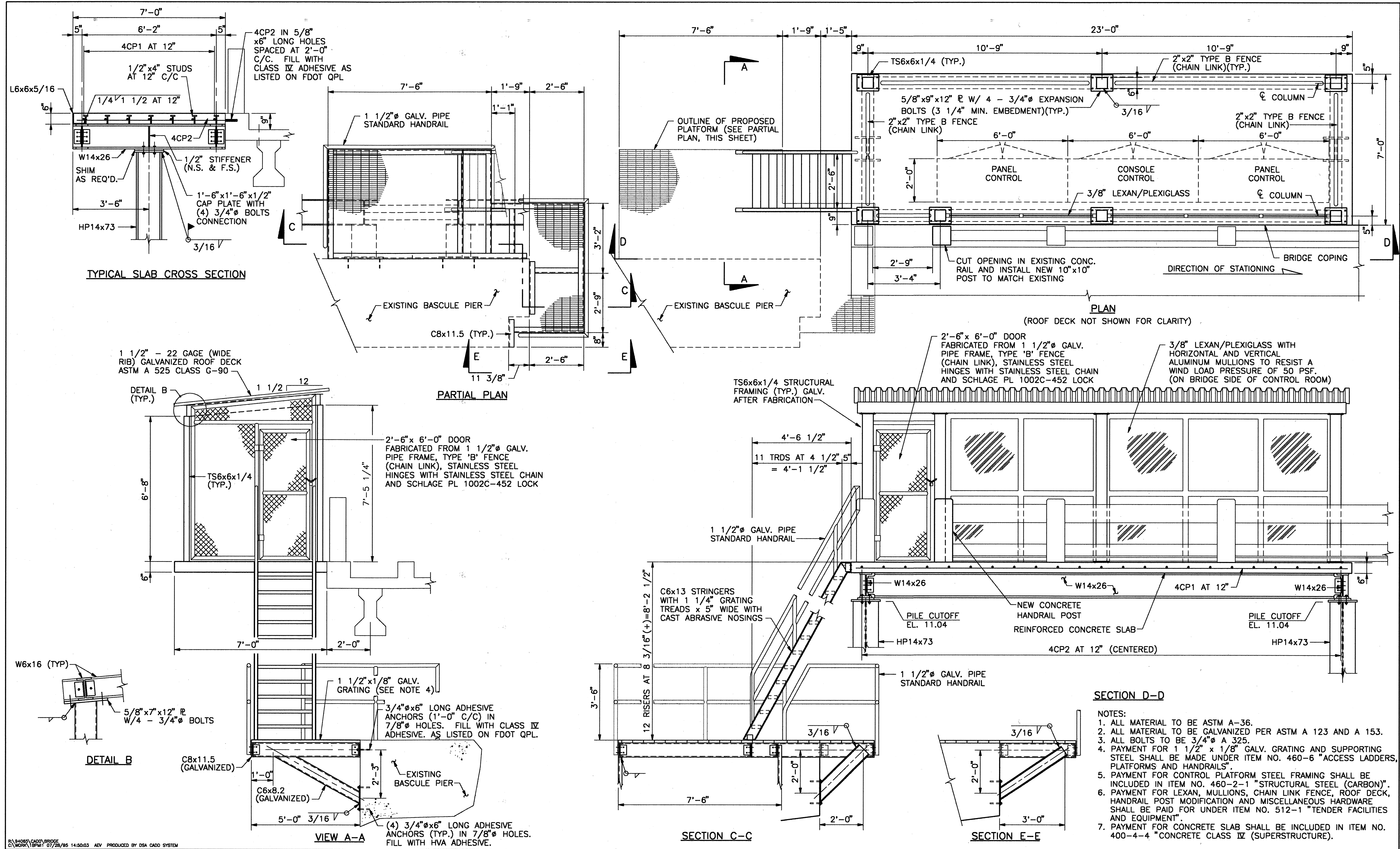


PINELLAS COUNTY
DEPARTMENT OF
PUBLIC WORKS

SHEET TITLE:	BASCULE PIER STABILIZING DETAILS
PROJECT NAME:	BECKETT BRIDGE REPAIRS

SHEET
S-5

Timothy J. Farrell



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" 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)".

Date	By	Description

Date	By	Description

Date	By	Description

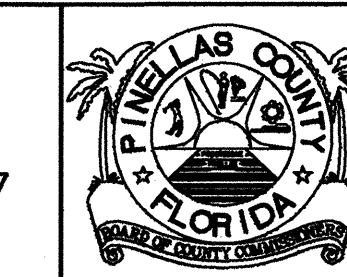
Date	By	Description

Date	By	Description

Date	By	Description



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



PINELLAS COUNTY
DEPARTMENT OF
PUBLIC WORKS

Date	By	Description

S-6

REPAIR NOTES

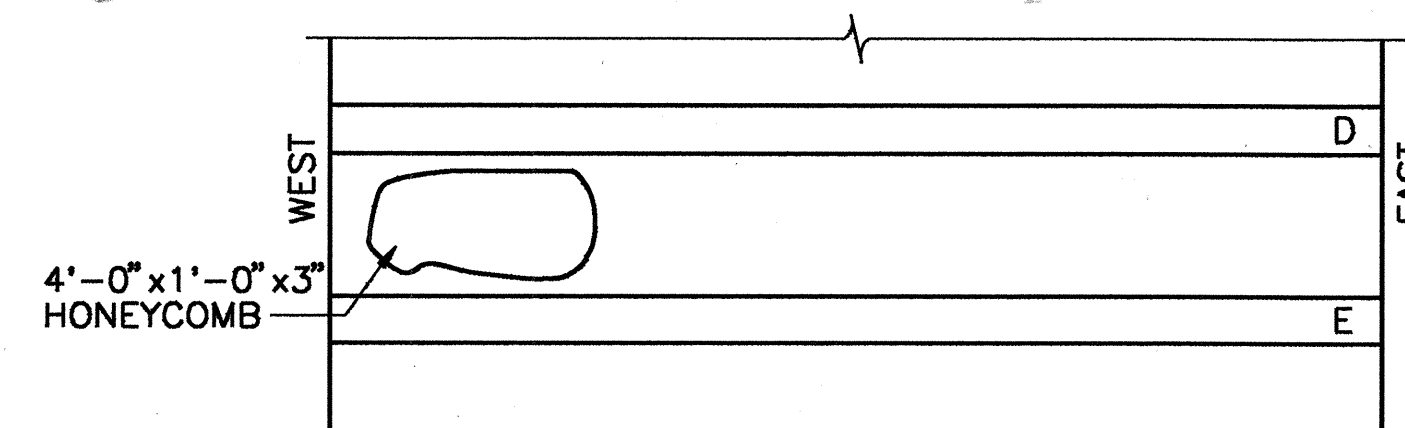
PATCHING OF CONCRETE SPALLS:

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:

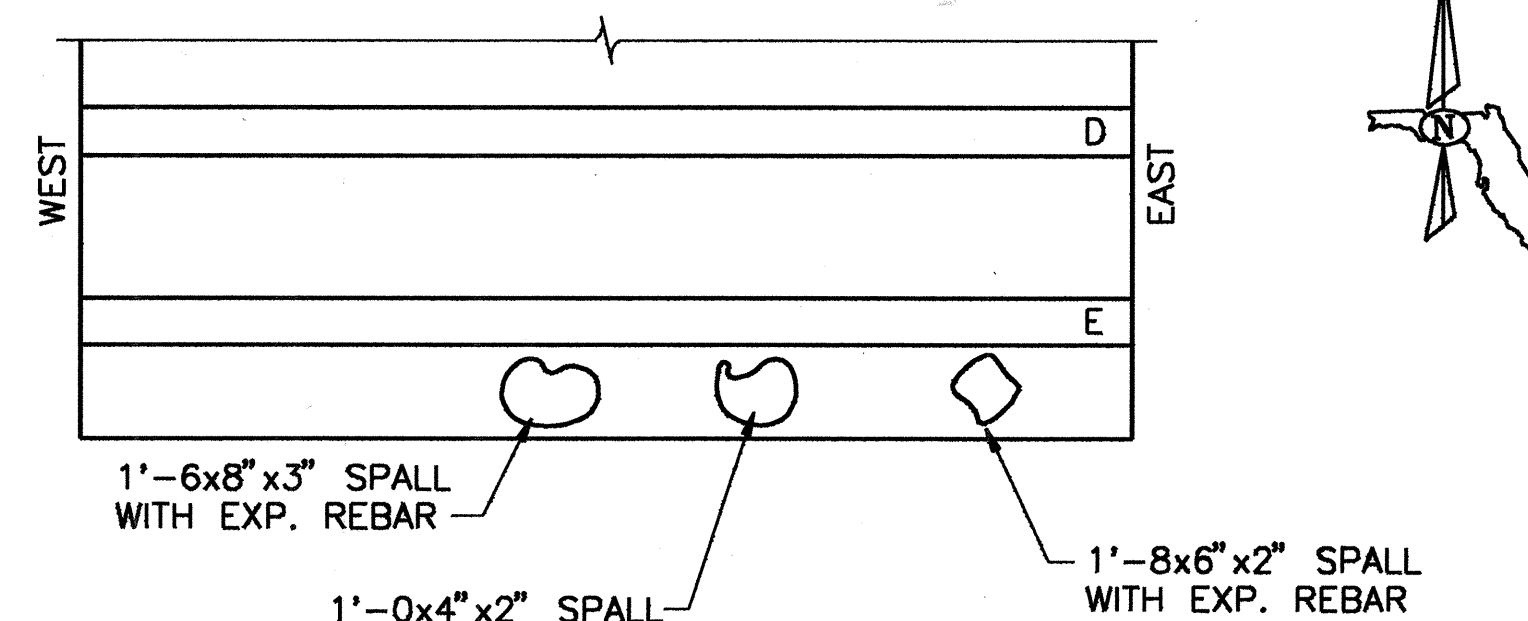
- REMOVE UNSOUND CONCRETE FROM SPALLED AREA. POWER CHIPPING TOOLS MAY BE USED, BUT NOT TO EXCEED 30 POUNDS.
- CLEAN CONCRETE SURFACES OF ALL LOOSE CONCRETE, DUST, AND ANY OTHER FOREIGN MATERIAL. BE SURE REPAIR AREA IS NOT LESS THAN 1/2 IN. IN DEPTH. PREPARE AREA TO OBTAIN AN AGGREGATE FRACTURED SURFACE WITH A MINIMUM SURFACE PROFILE OF $\pm 1/16$ IN.
- 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.
- 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:

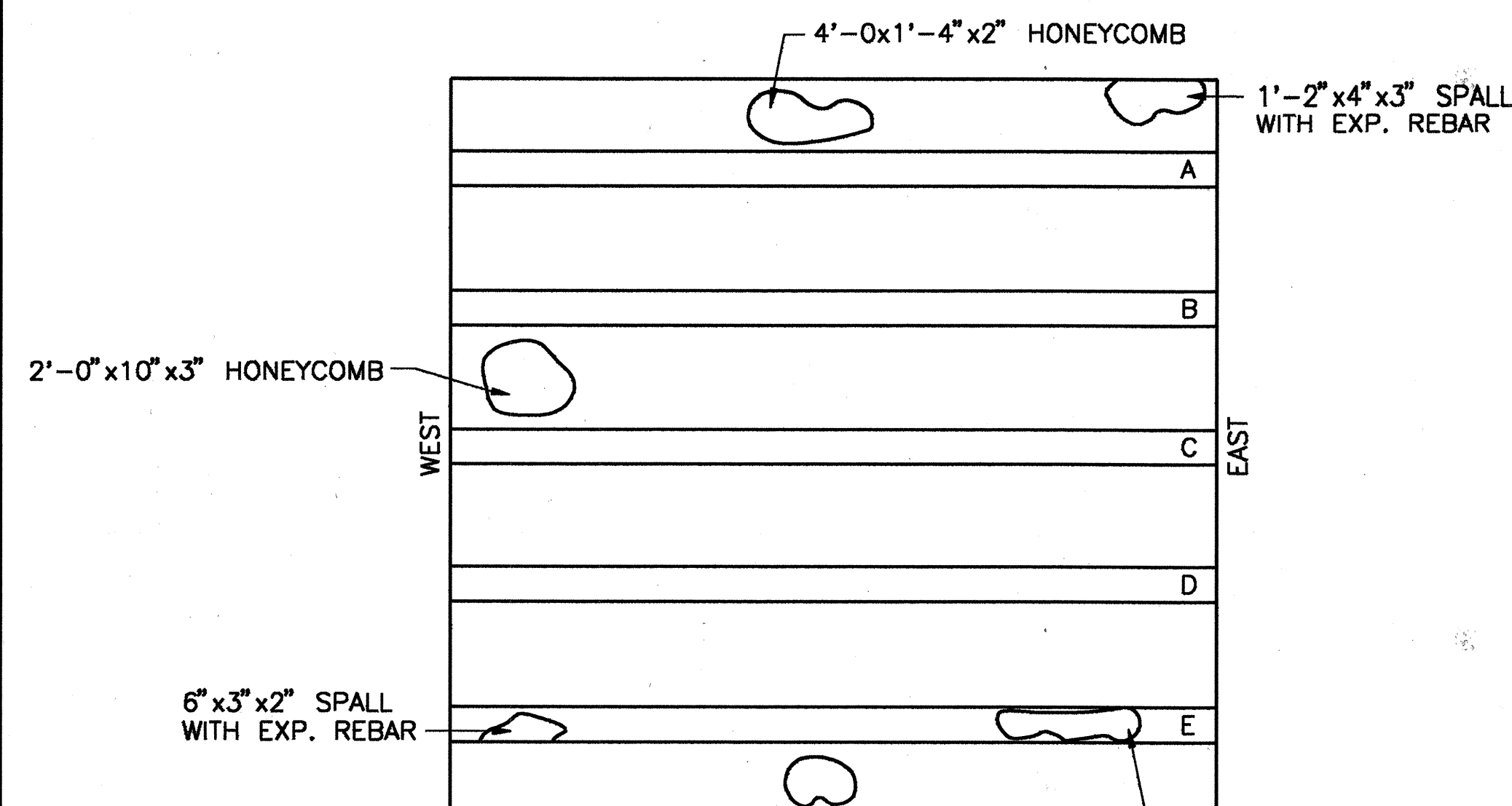
- REMOVE UNSOUND CONCRETE FROM SPALLED AREA. PNEUMATIC TOOLS SHALL NOT BE PLACED IN DIRECT CONTACT WITH THE REINFORCING STEEL. EXTREME CARE SHALL BE TAKEN AS NOT TO DAMAGE THE STEEL OR ITS BOND IN THE SURROUNDING SOUND CONCRETE.
- THE REMOVAL SHALL CONTINUE UNTIL AT LEAST 3/4 OF THE BAR'S CIRCUMFERENCE 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.
- CLEAN CONCRETE SURFACE AND EXPOSED REINFORCING STEEL OF ALL LOOSE CONCRETE, DUST, AND ANY FOREIGN MATERIAL. RUST SCALE SHALL BE REMOVED BY HYDROBLASTING.
- 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.
- 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.



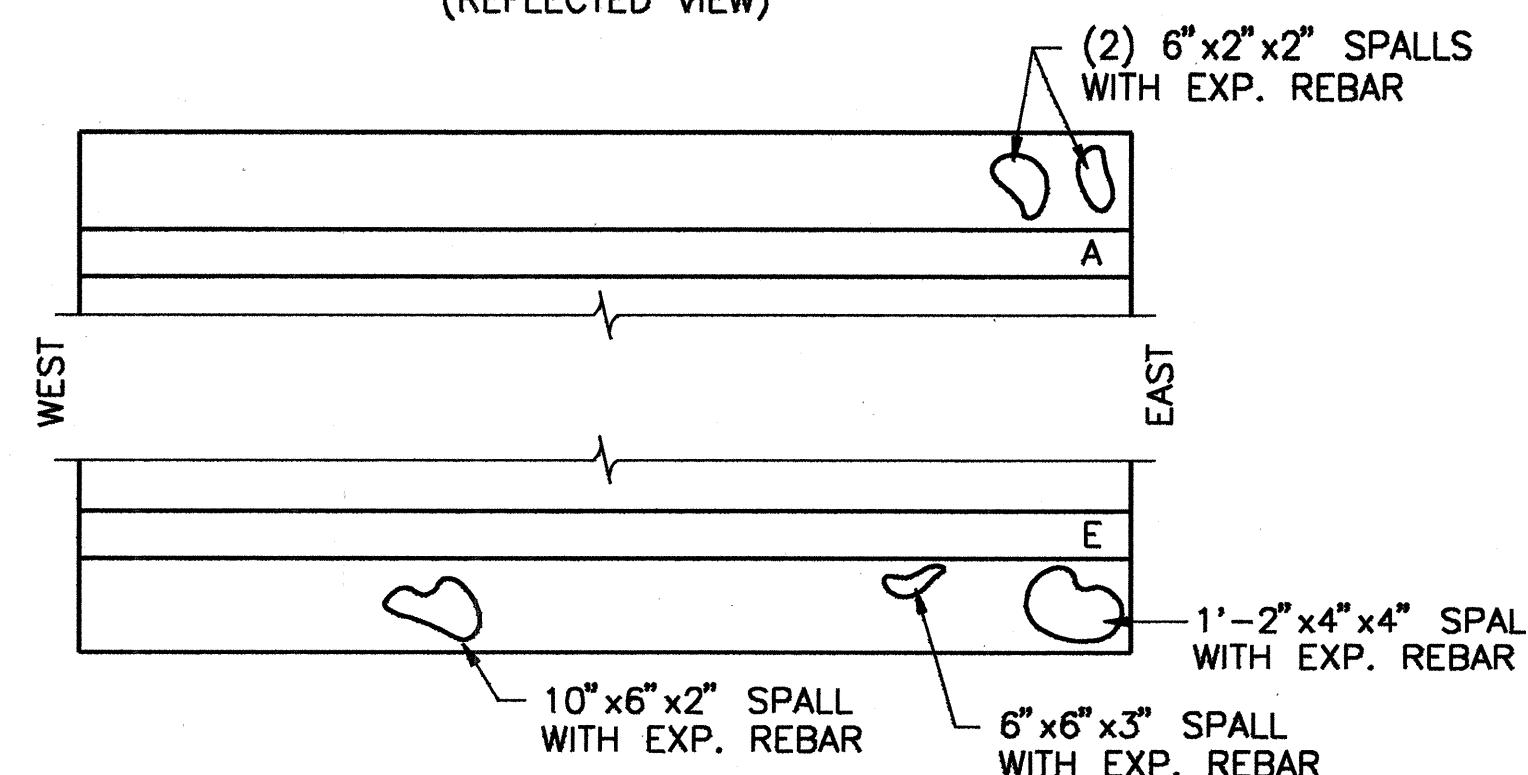
BOTTOM OF DECK-SPAN 2
(REFLECTED VIEW)



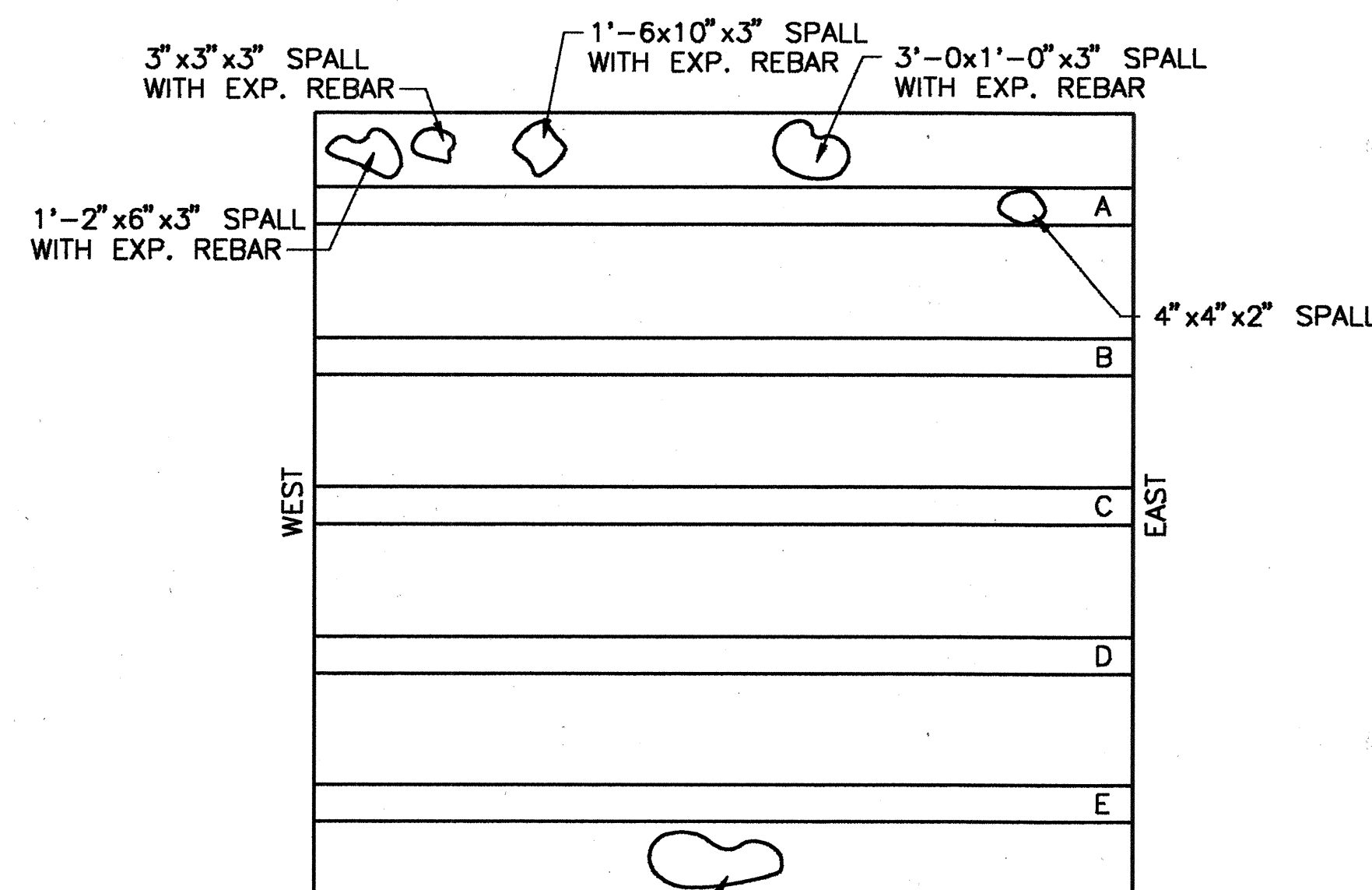
BOTTOM OF DECK-SPAN 5
(REFLECTED VIEW)



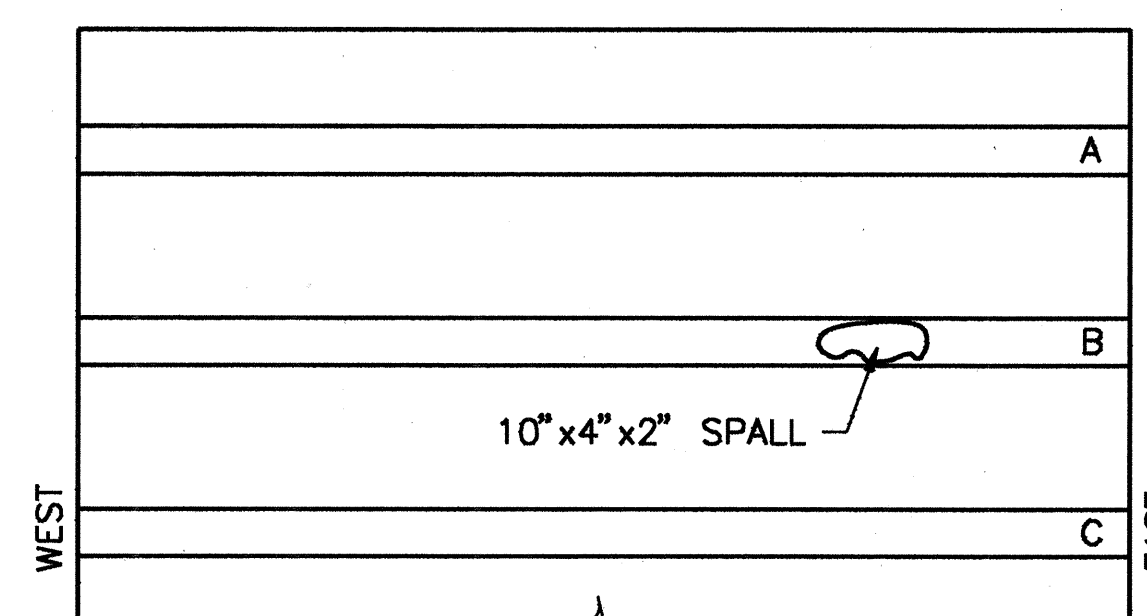
BOTTOM OF DECK-SPAN 3
(REFLECTED VIEW)



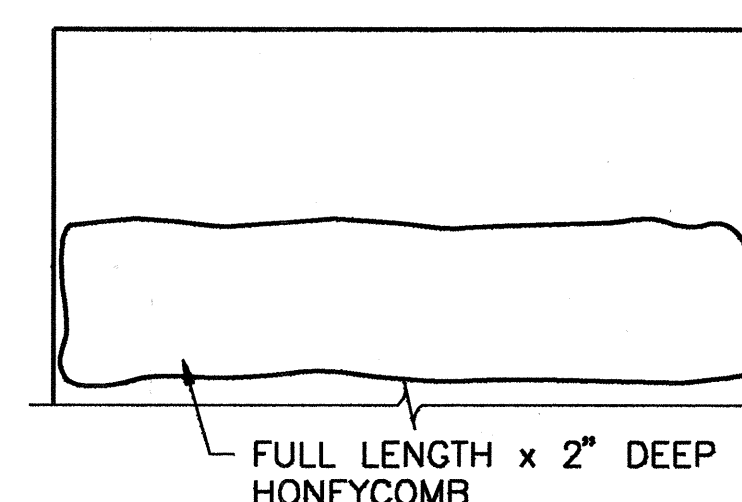
BOTTOM OF DECK-SPAN 8
(REFLECTED VIEW)



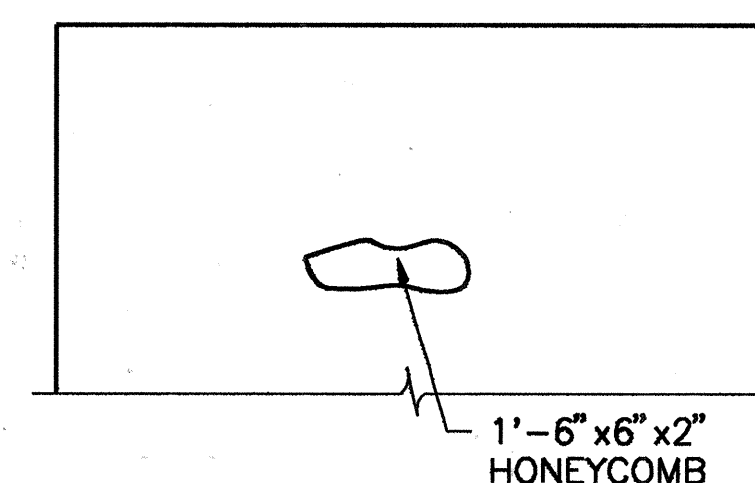
BOTTOM OF DECK-SPAN 4
(REFLECTED VIEW)



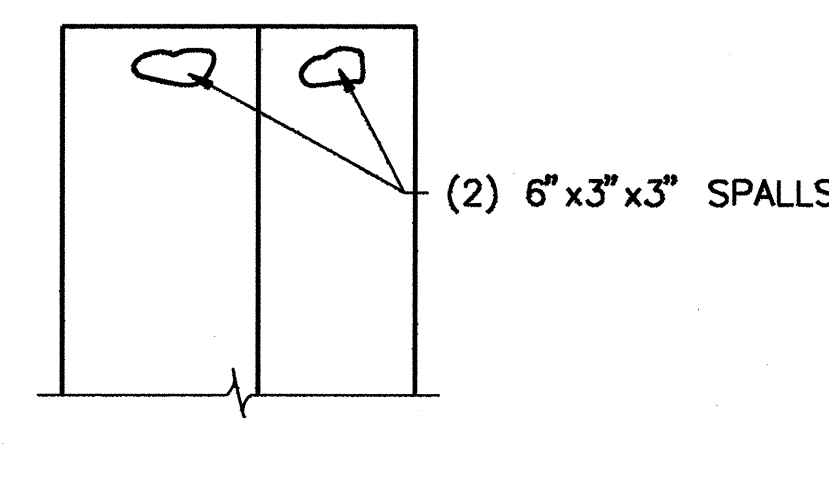
BOTTOM OF DECK-SPAN 10
(REFLECTED VIEW)



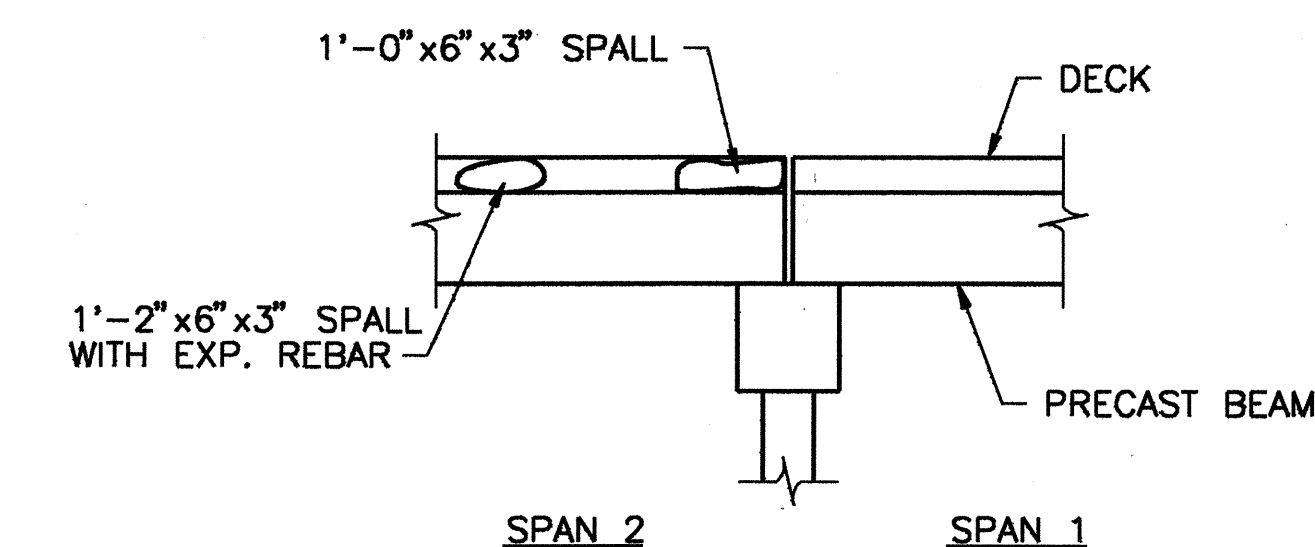
NORTH BASCULE PIER - NORTH FACE



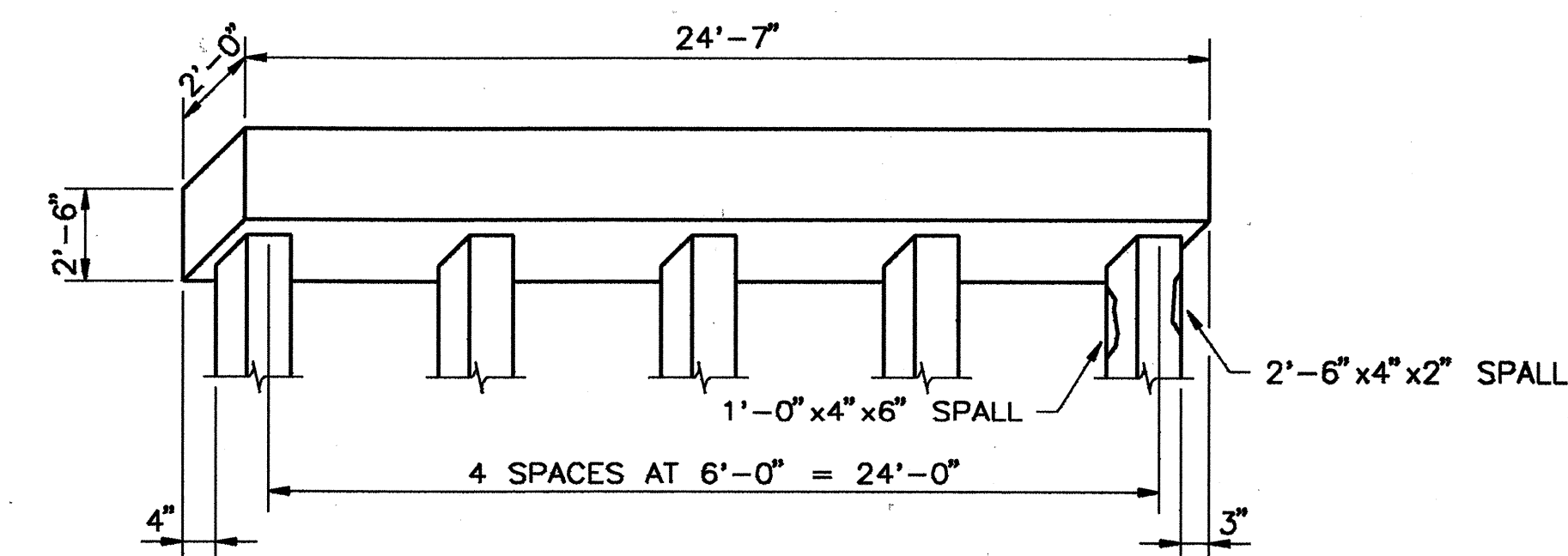
SOUTH BASCULE PIER - SOUTH FACE



SOUTH BASCULE PIER - WEST FACE





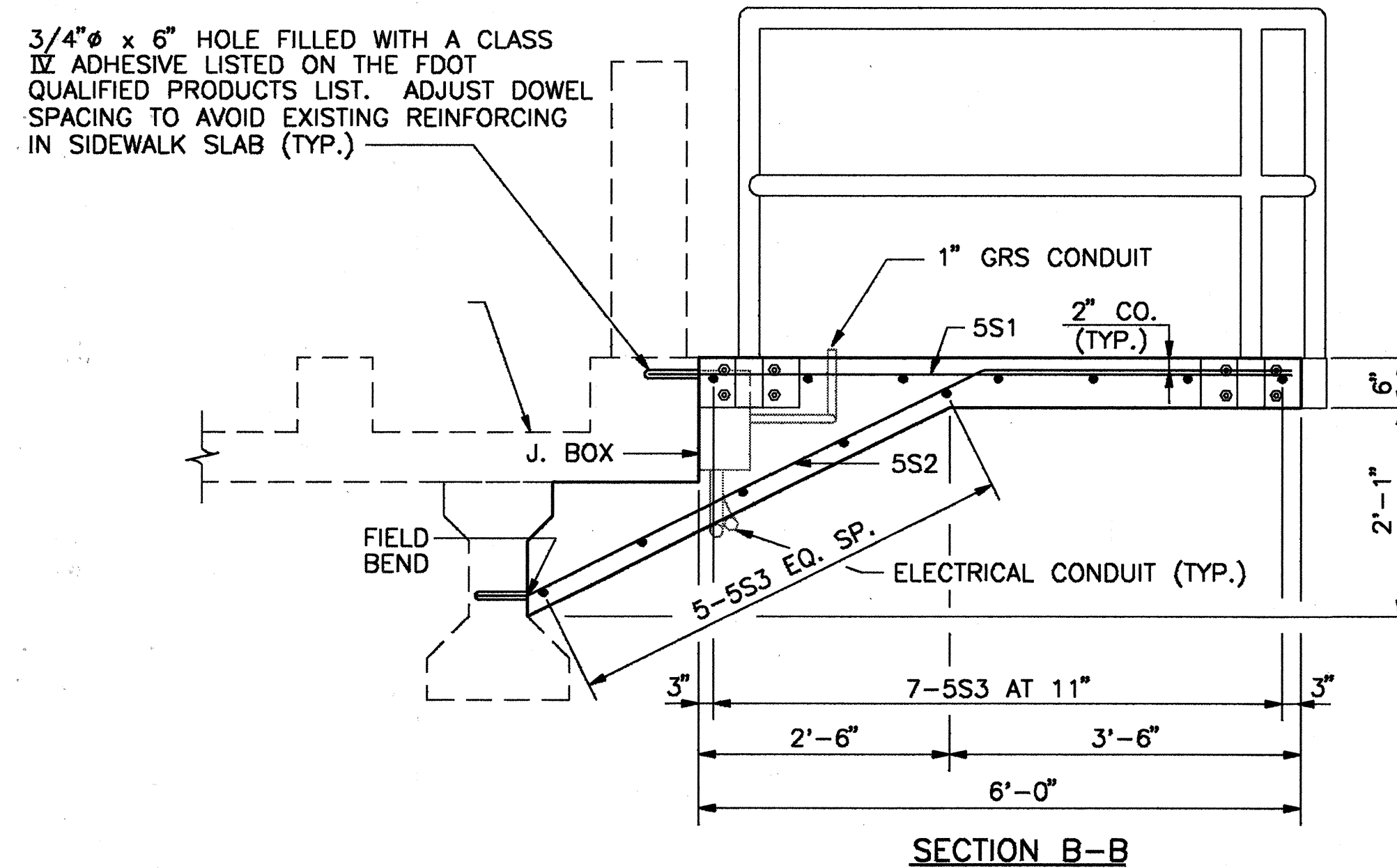
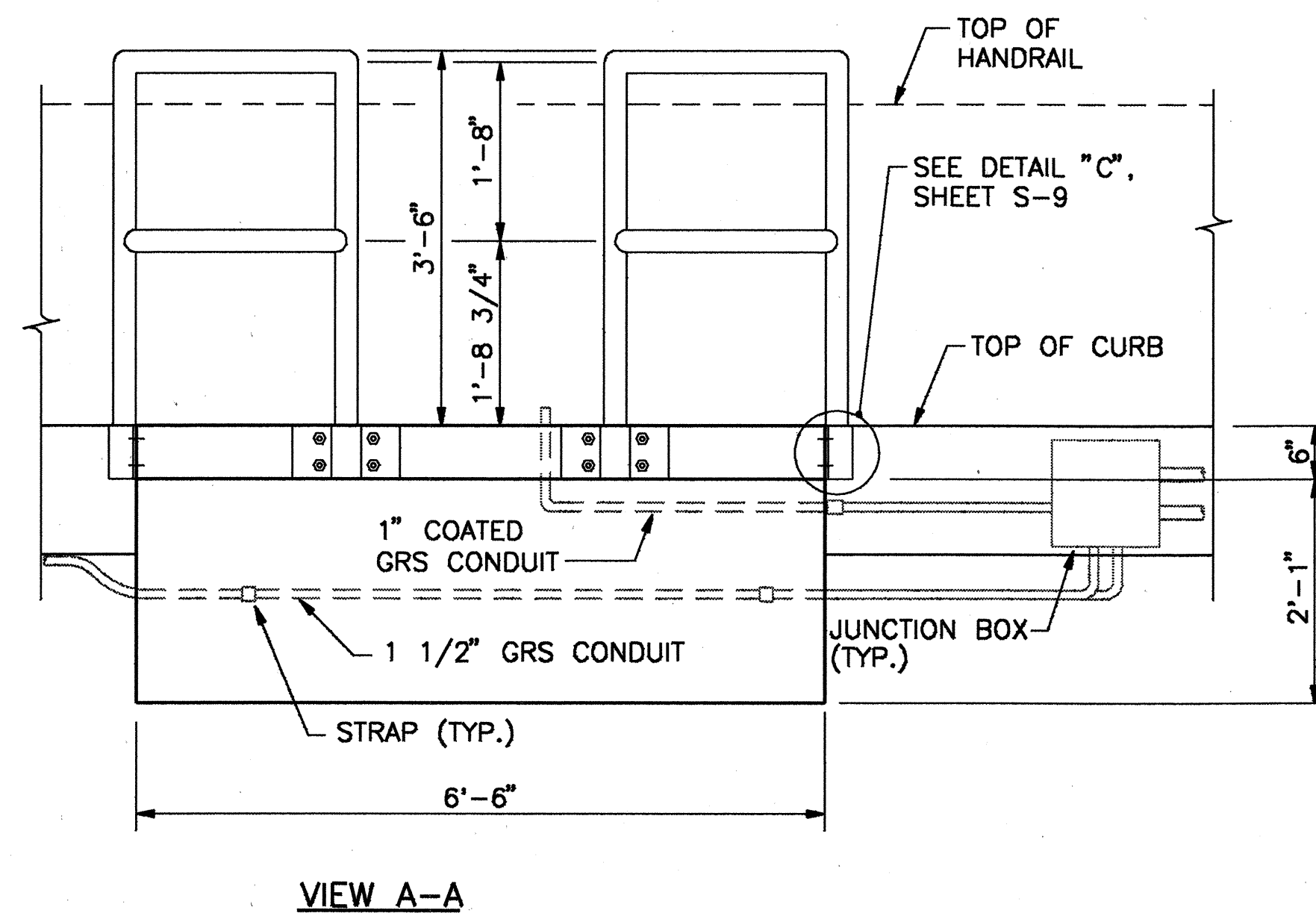
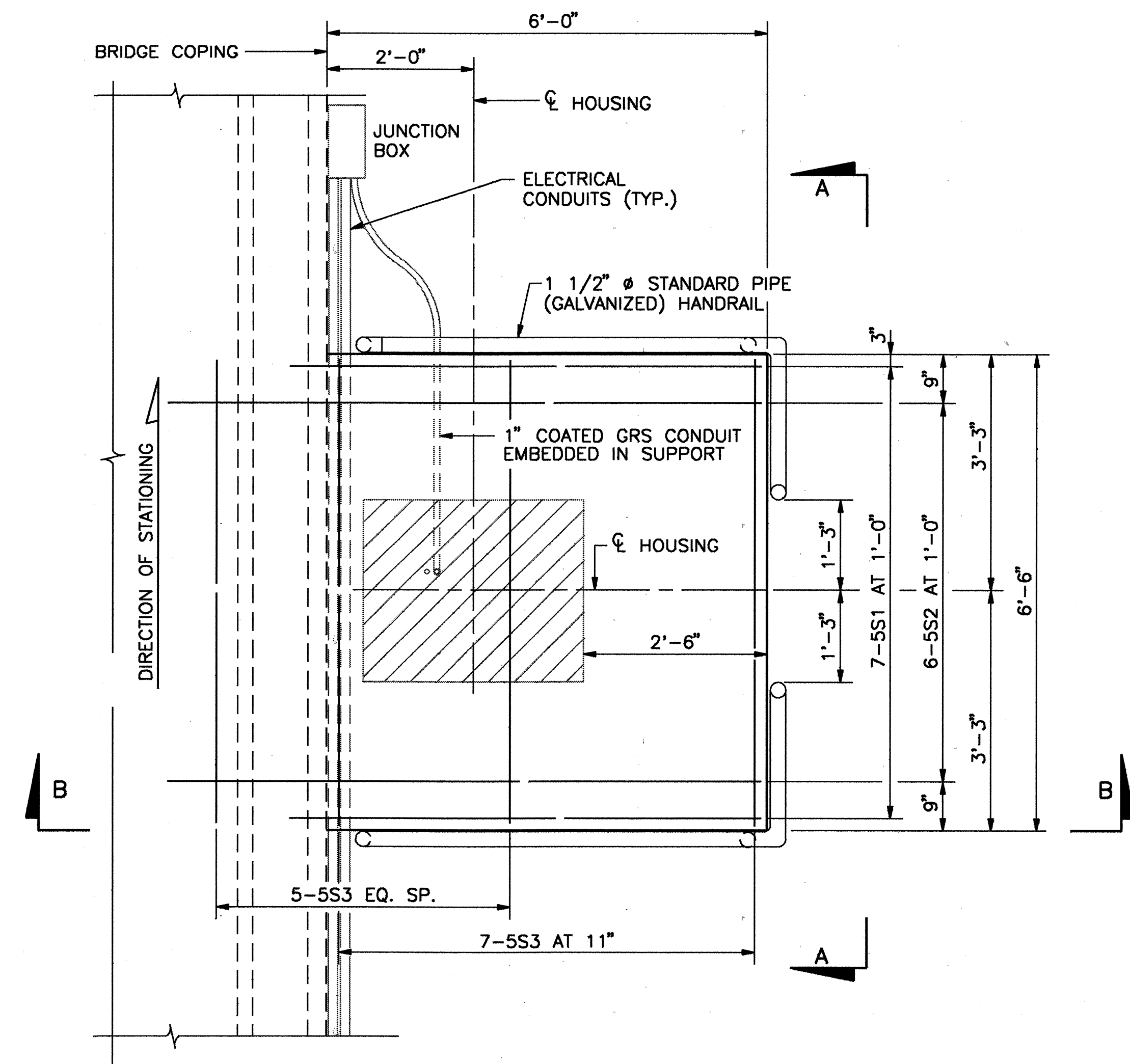
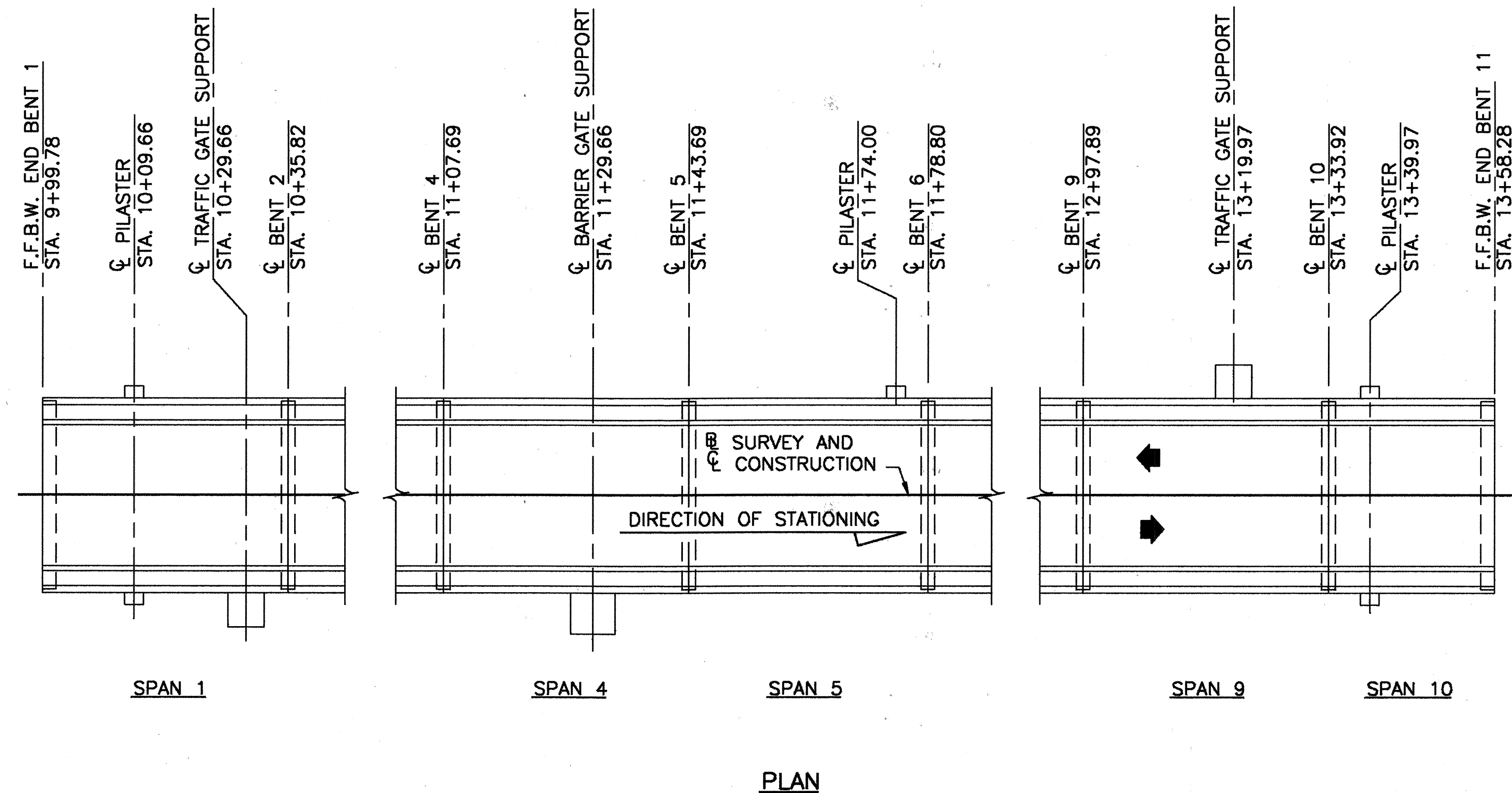
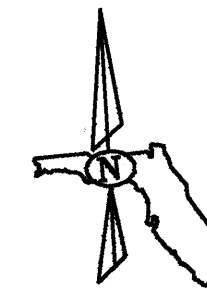
BENT NO. 2
(NORTH FASCIA)



BENT NO. 10 (VIEW LOOKING EAST)

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REVISIONS			REVISIONS			SEAL:	Names		Dates			PINELLAS COUNTY DEPARTMENT OF PUBLIC WORKS	SHEET TITLE:	SHEET	
Date	By	Description	Date	By	Description		Drawn by	Checked by	Designed by				Checked by	PROJECT NAME:	CONCRETE REPAIR DETAILS
							CLM	MRC	MRC	5-95					



* 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:
- FOR HANDRAIL NOTES, LIGHT POLE PILASTER DETAILS AND DETAIL 'C', SEE SHEET S-9.
 - FOR REINFORCING BAR LIST, SEE SHEET S-16.
 - 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.

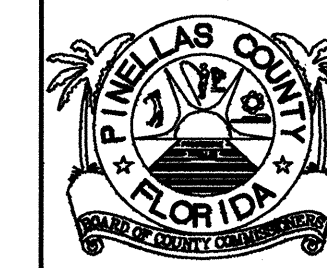
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REVISIONS			REVISIONS		
Date	By	Description	Date	By	Description

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	



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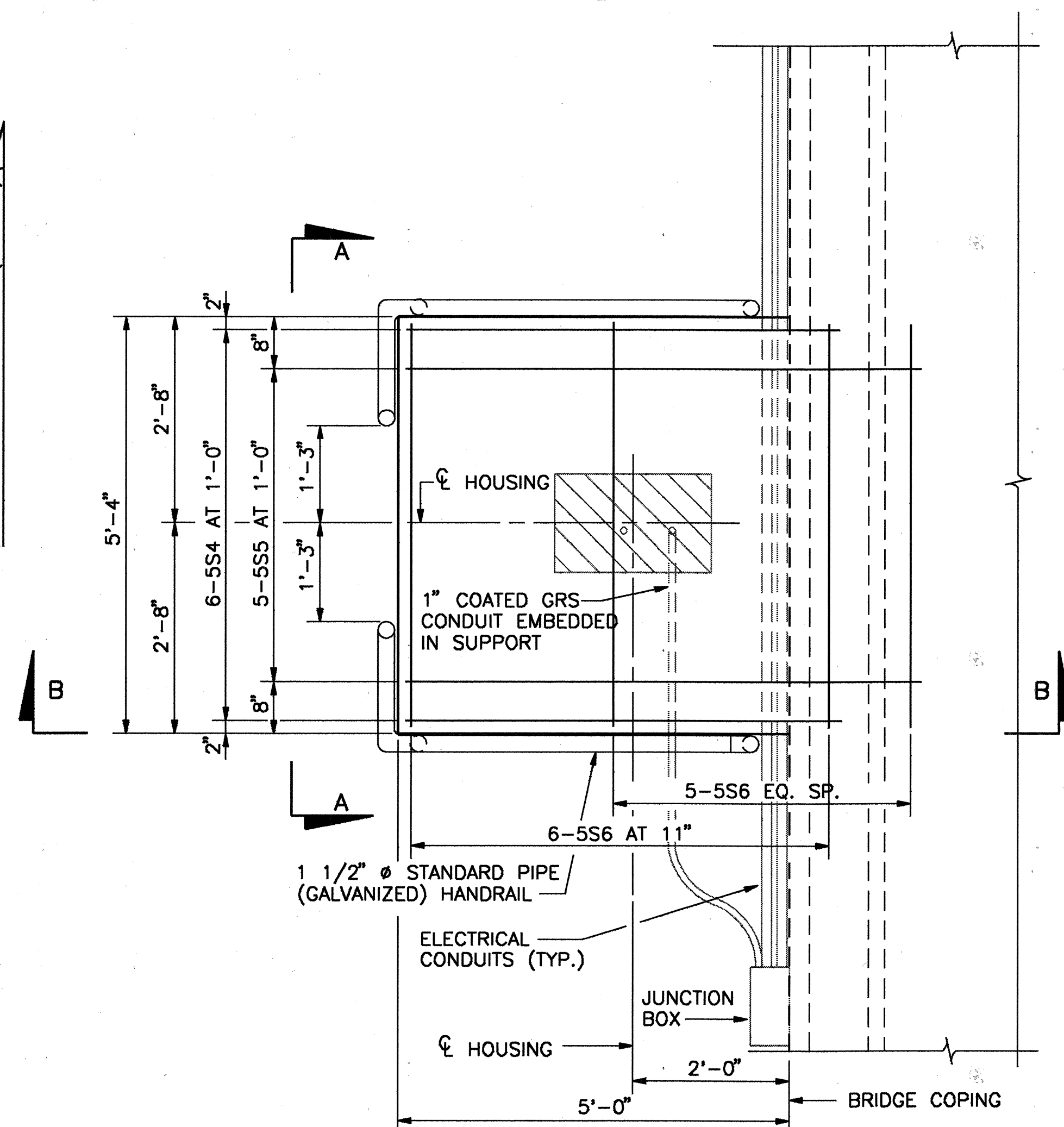


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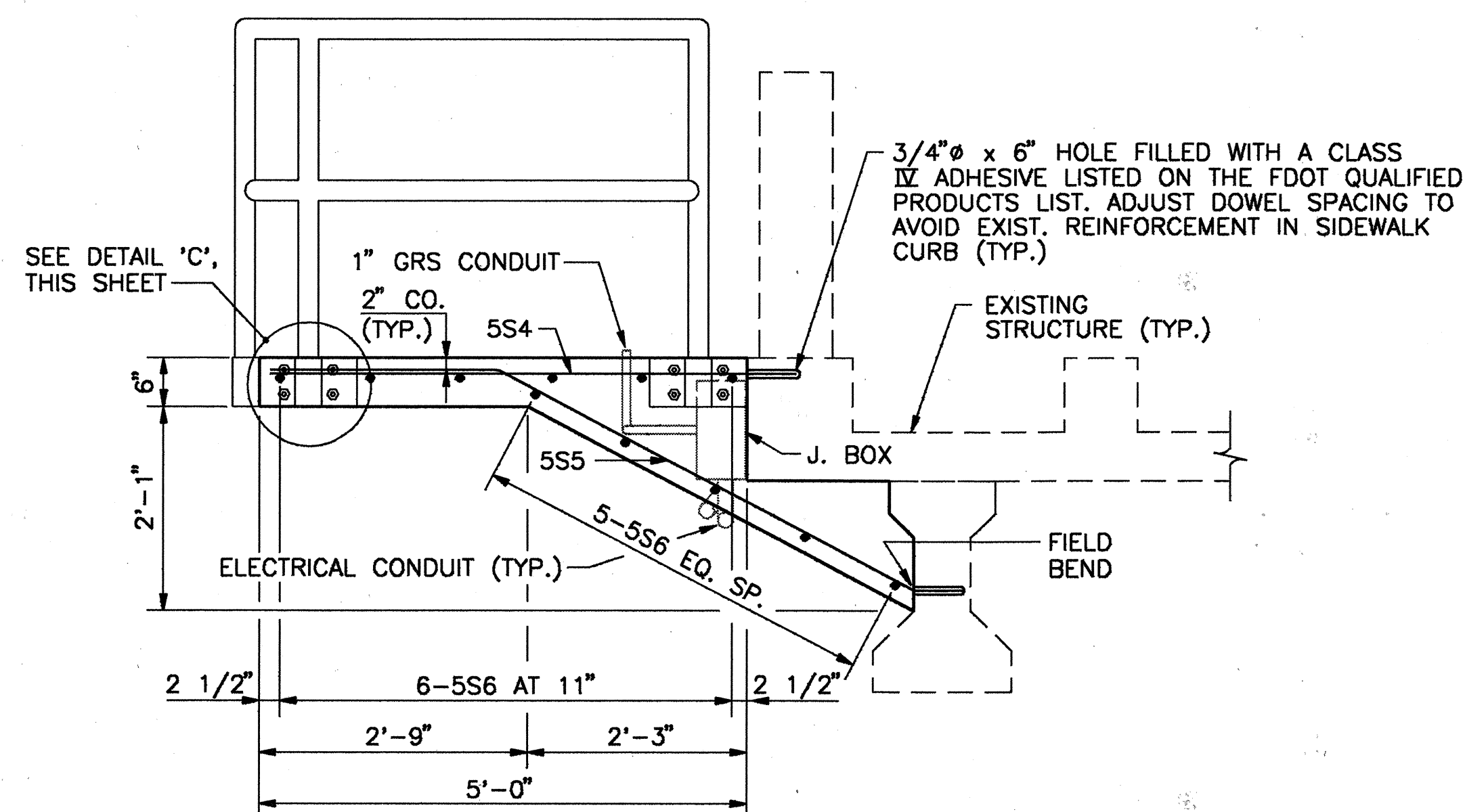
SHEET TITLE:	SHEET
BARRIER GATE SUPPORT DETAILS	S-8
PROJECT NAME:	
BECKETT BRIDGE REPAIRS	

Timothy J. Farrell

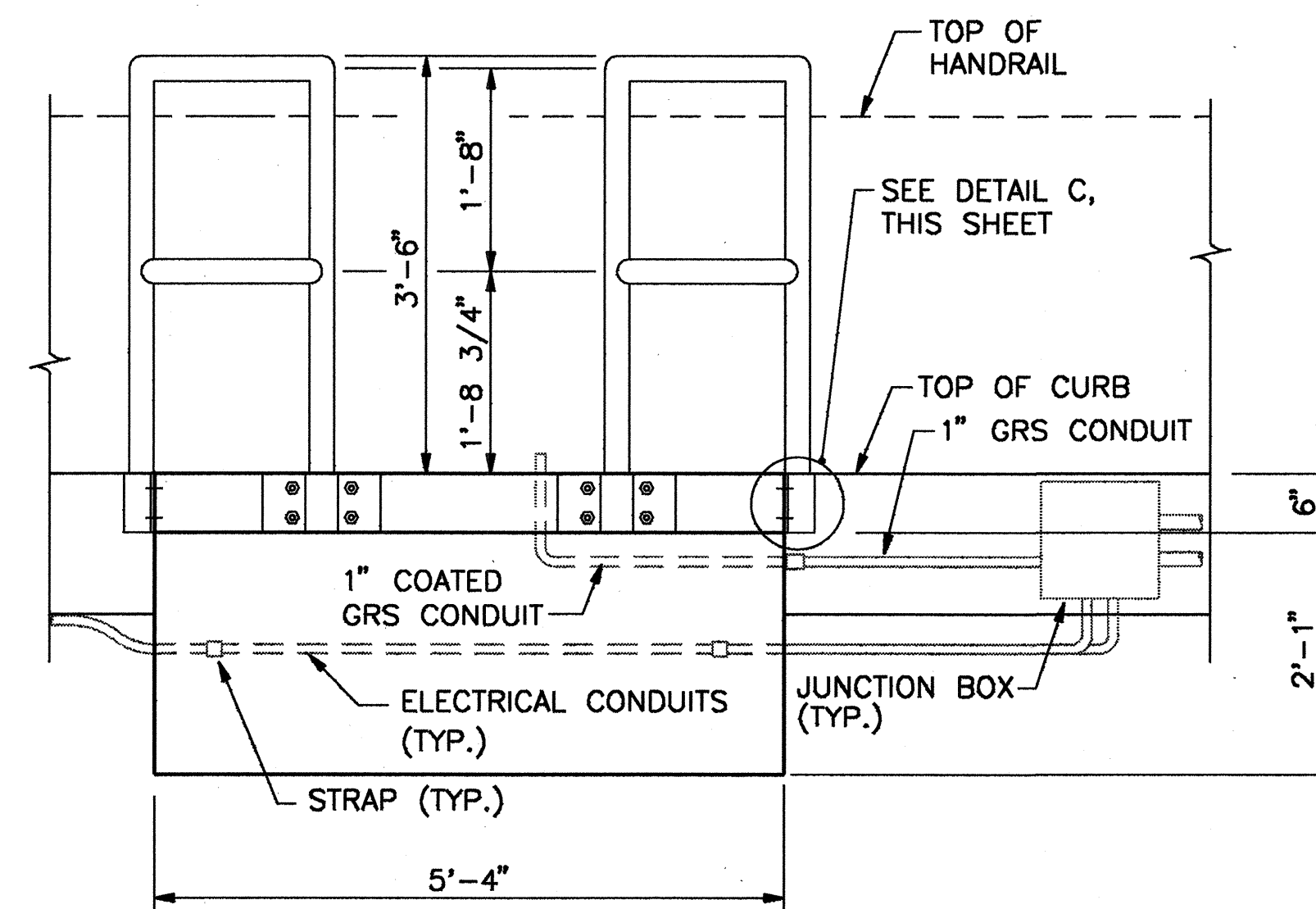
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DIRECTION OF STATIONING (SPAN 9)



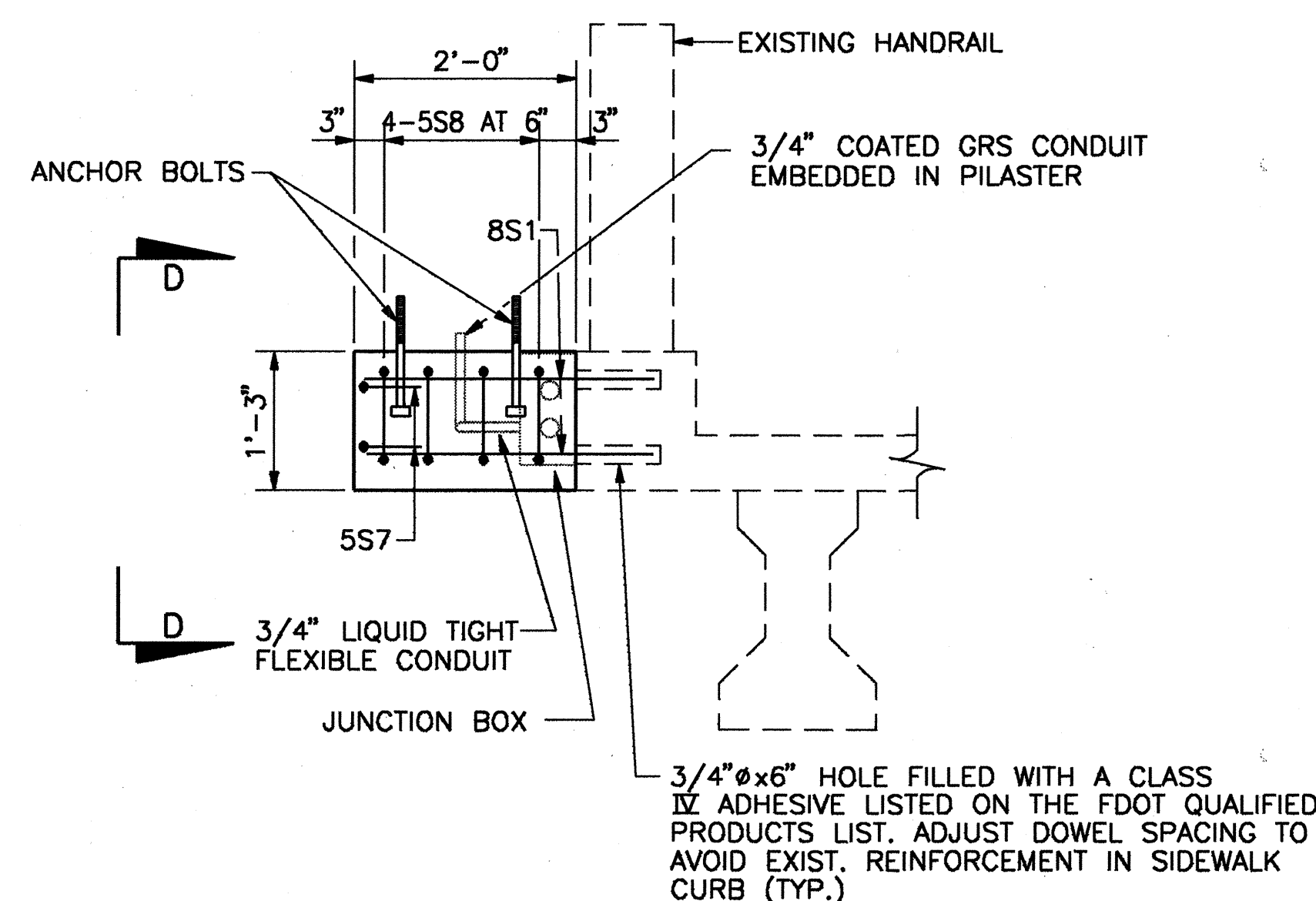
PLAN - TRAFFIC GATE SUPPORT



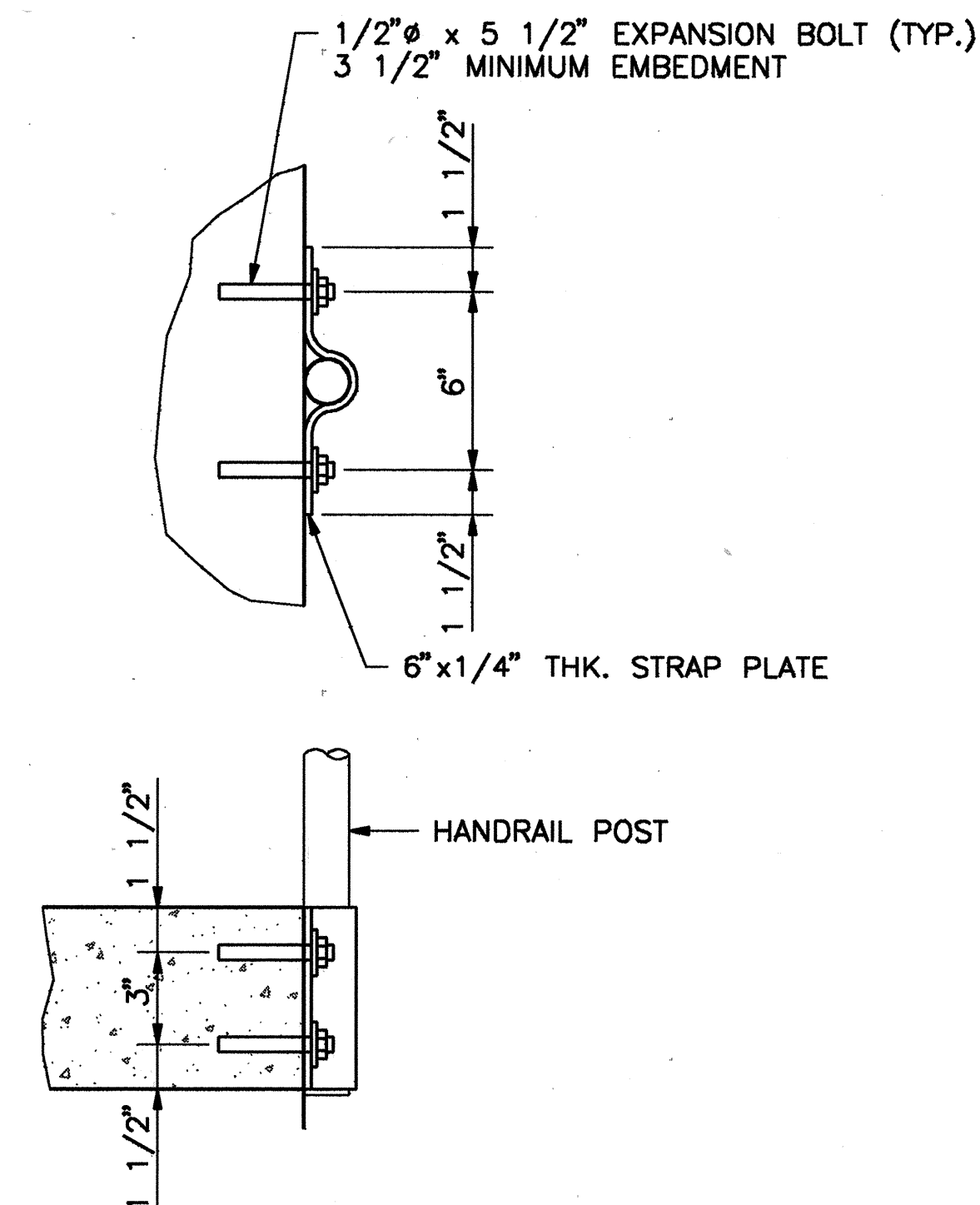
SECTION B-B



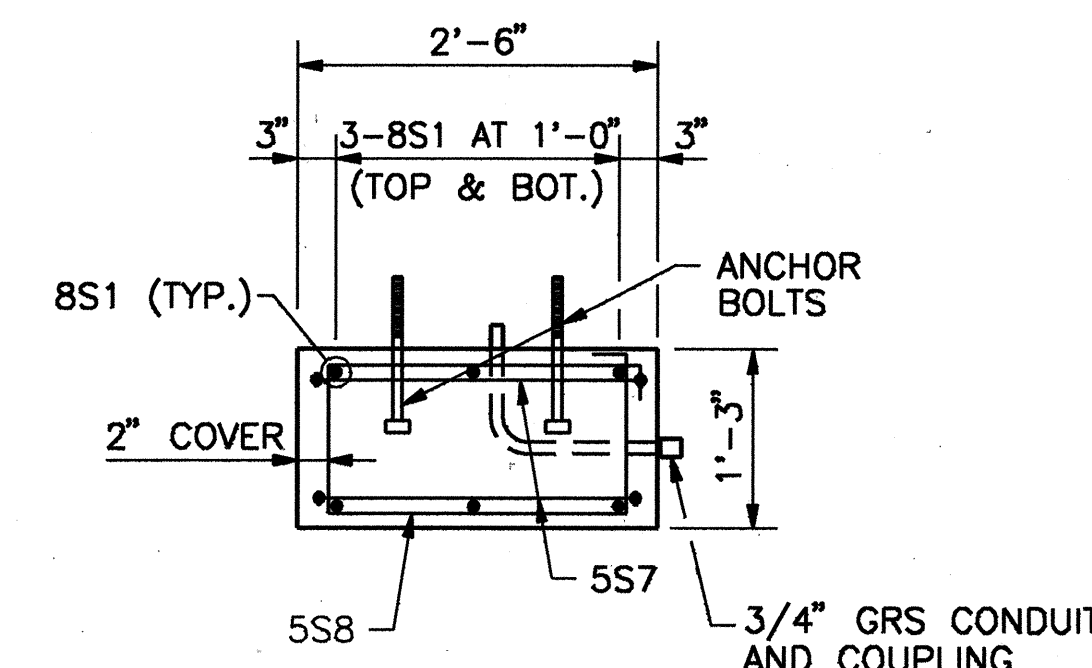
VIEW A-A



TYPICAL PILASTER SECTION



DETAIL C



VIEW D-D

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.

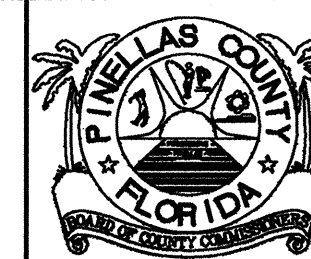
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	Approved by	T. J. FARRELL	

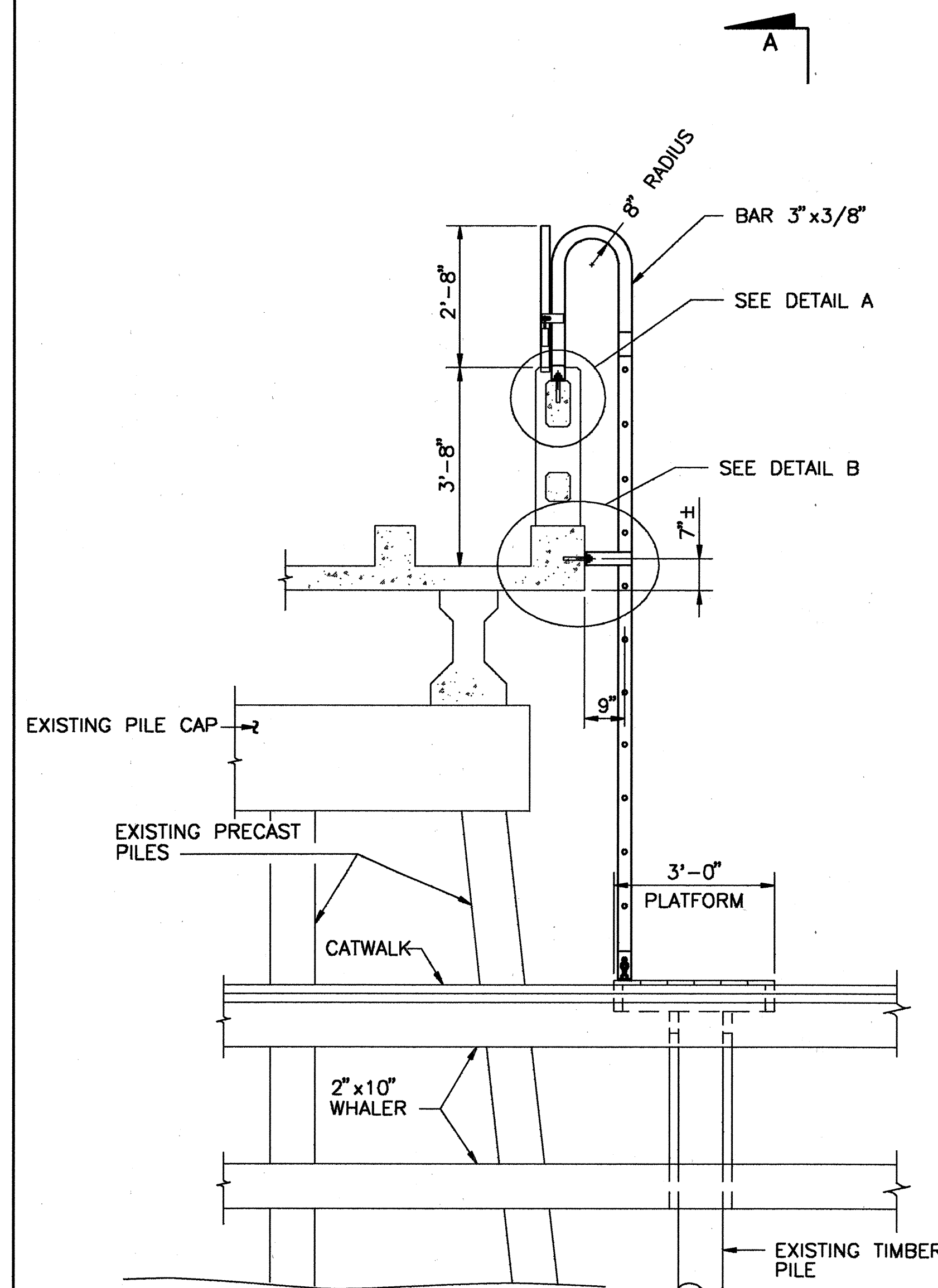


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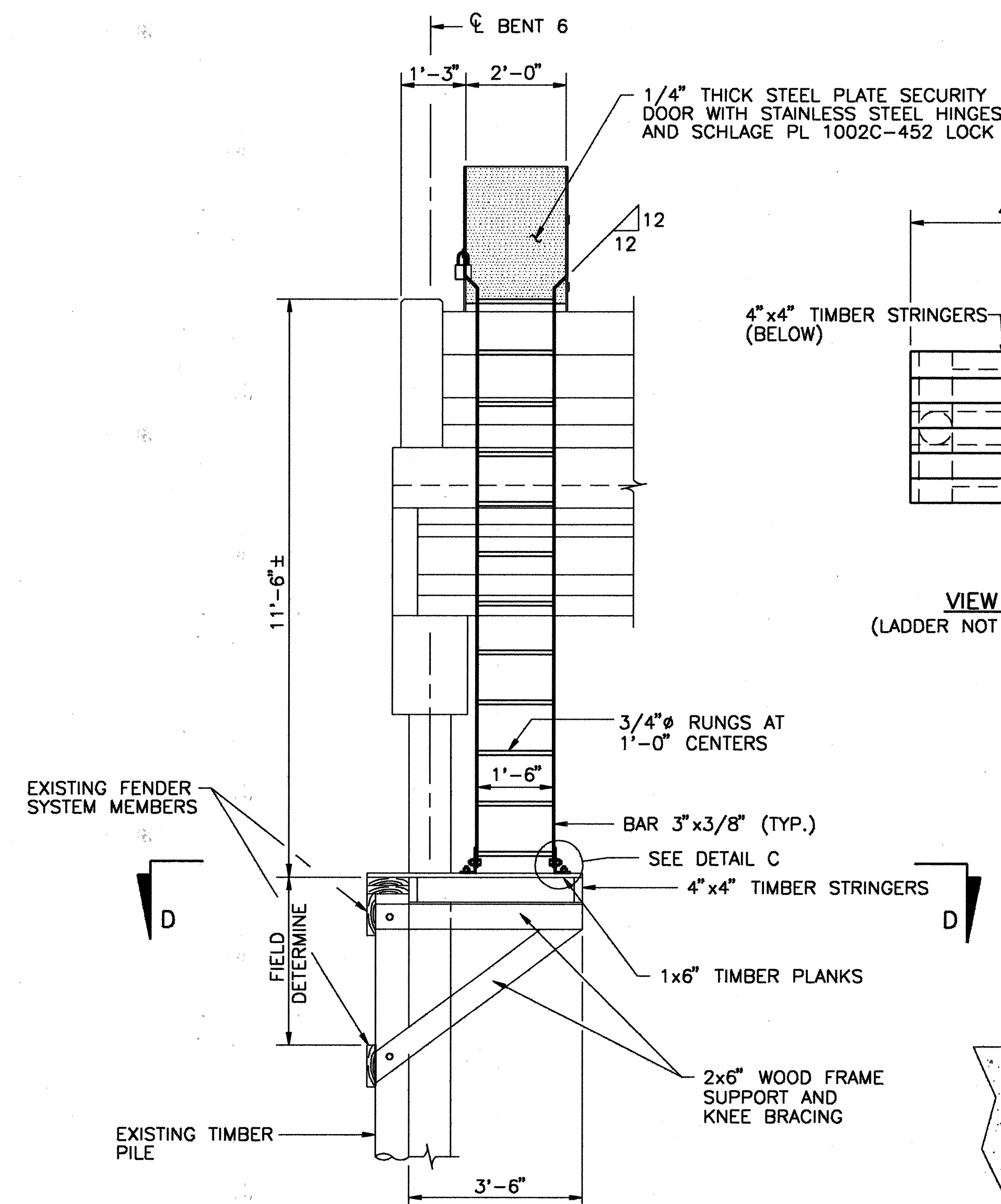


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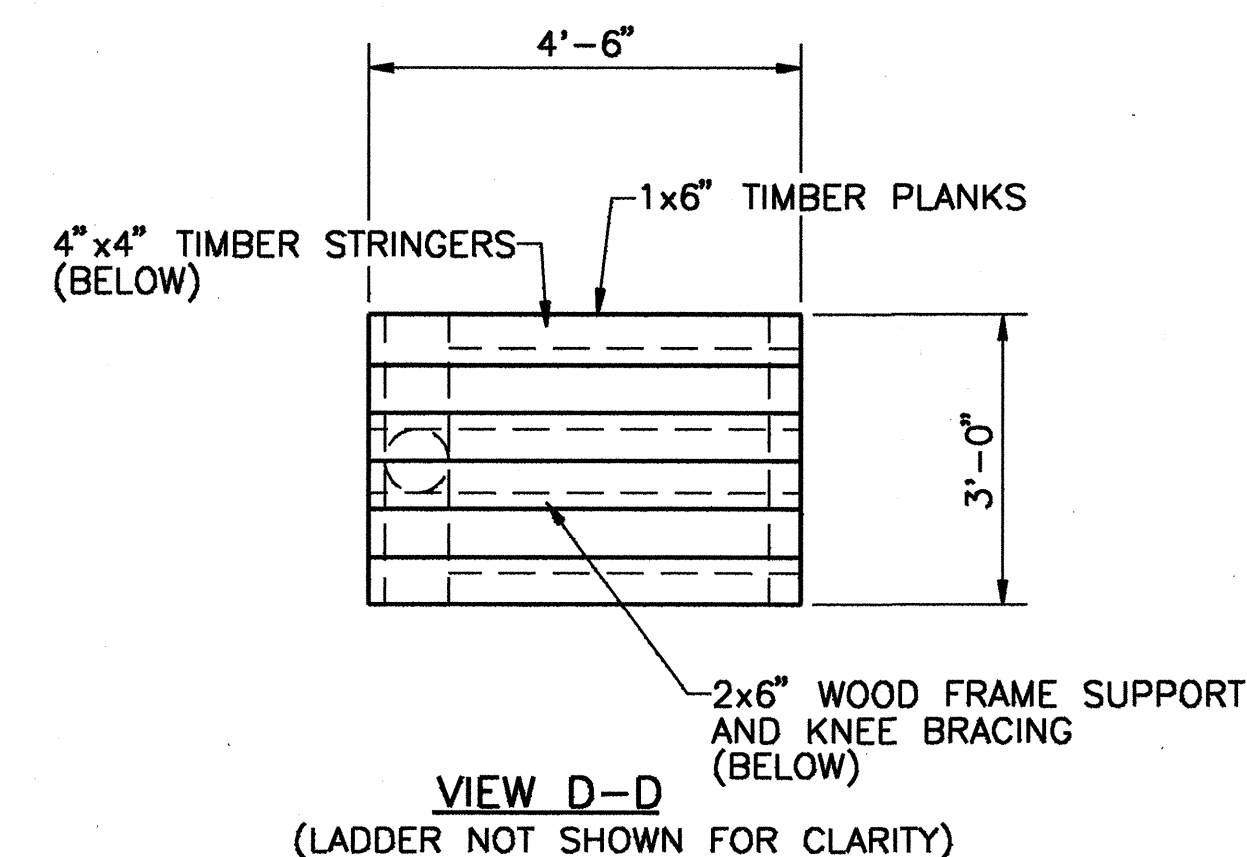
SHEET TITLE:	TRAFFIC GATE SUPPORT AND PILASTER DETAILS	SHEET
PROJECT NAME:	BECKETT BRIDGE REPAIRS	S-9



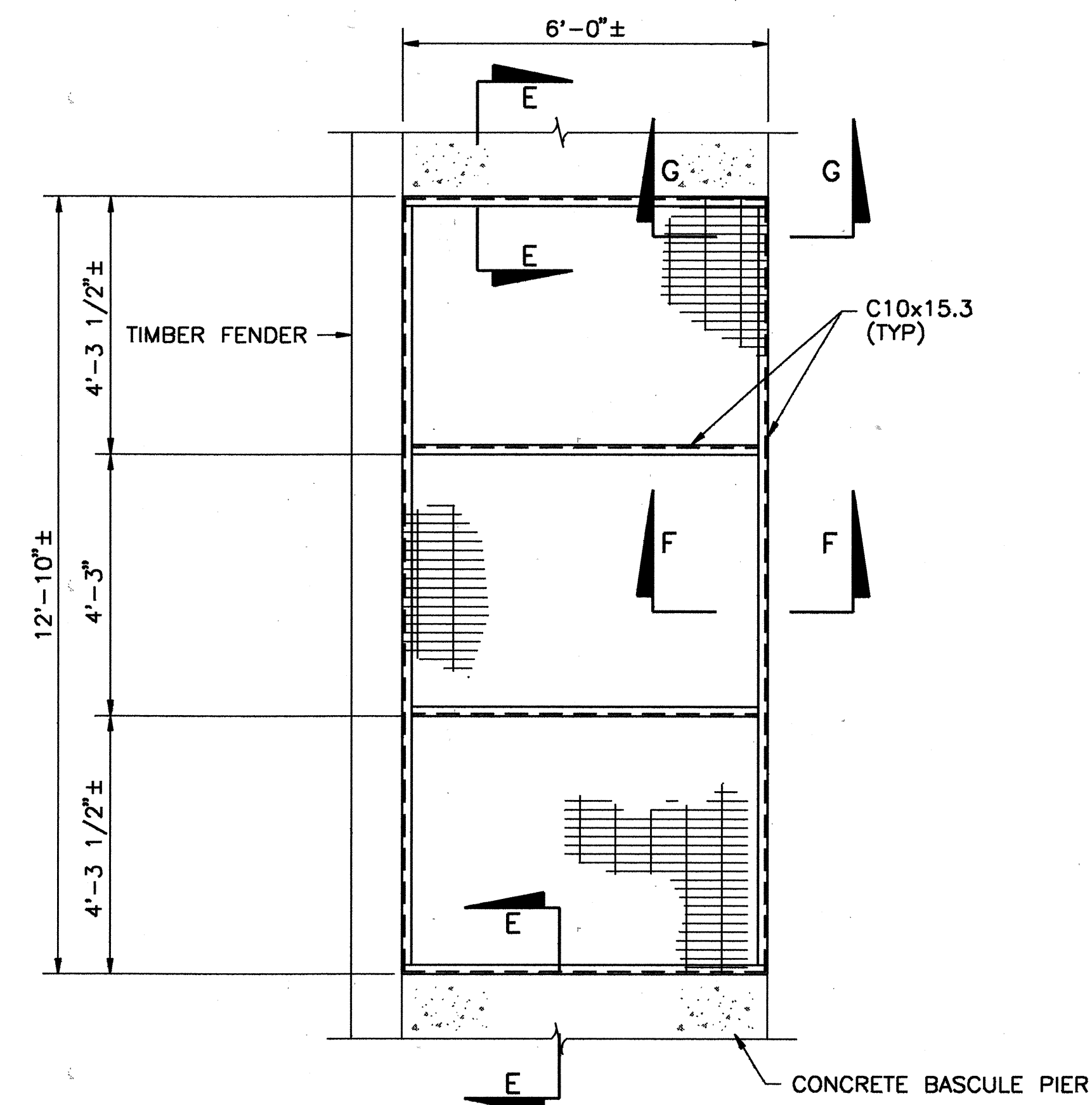
FENDER ACCESS LADDER DETAIL



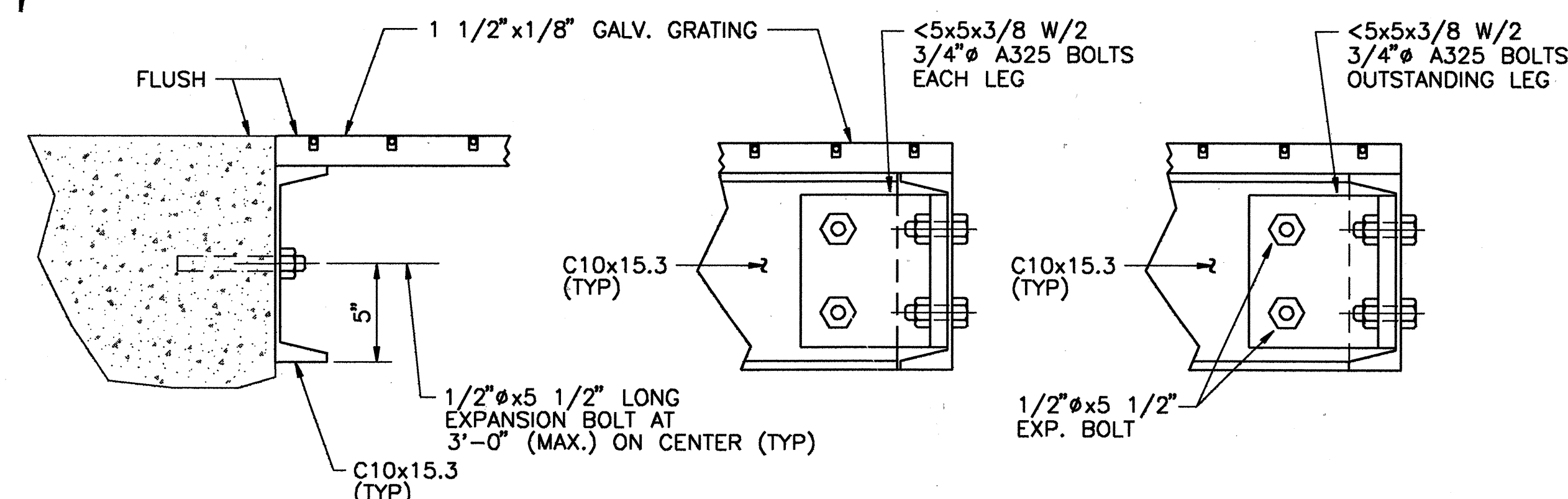
VIEW A-A



VIEW D-D
(LADDER NOT SHOWN FOR CLARITY)



BAScule PIER PLATFORM DETAIL



SECTION E-E

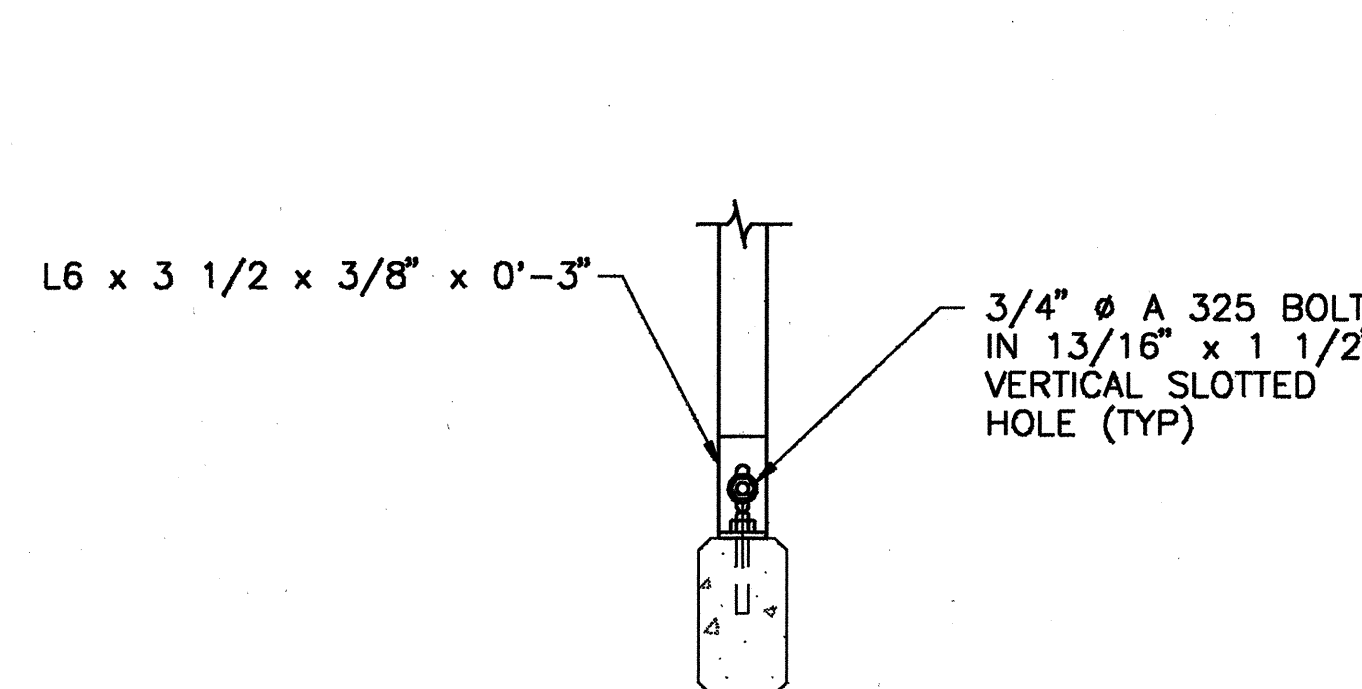
SECTION F-F

SECTION G-G

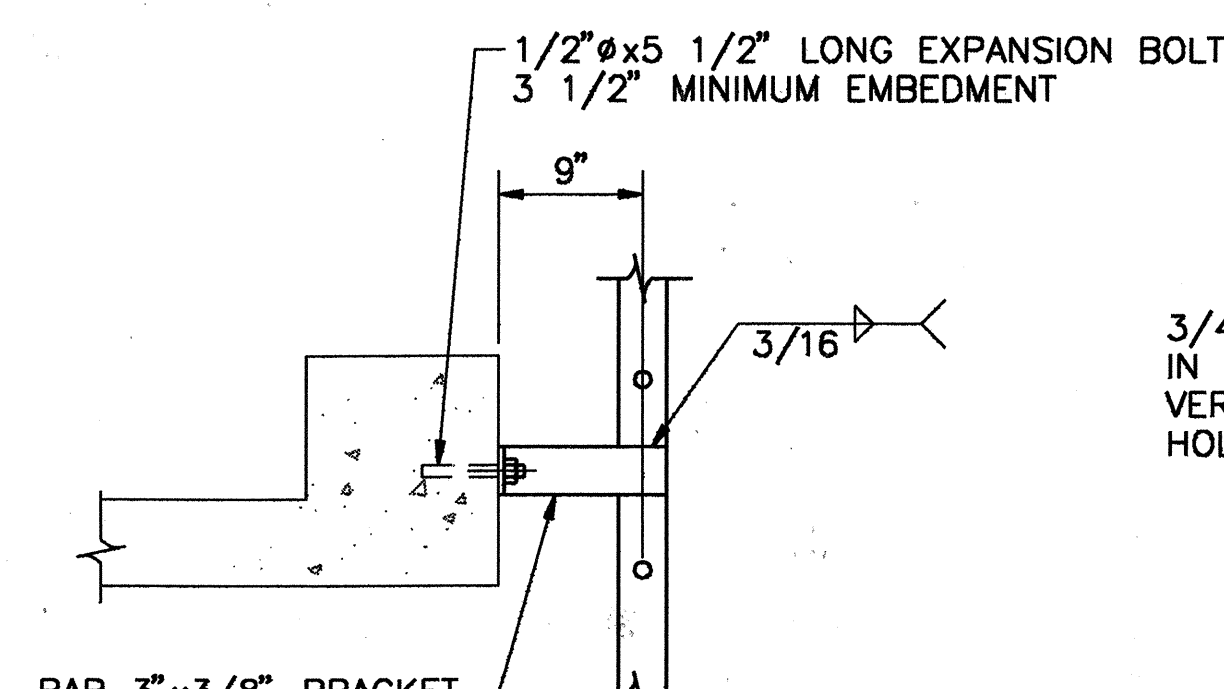
NOTES:

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.

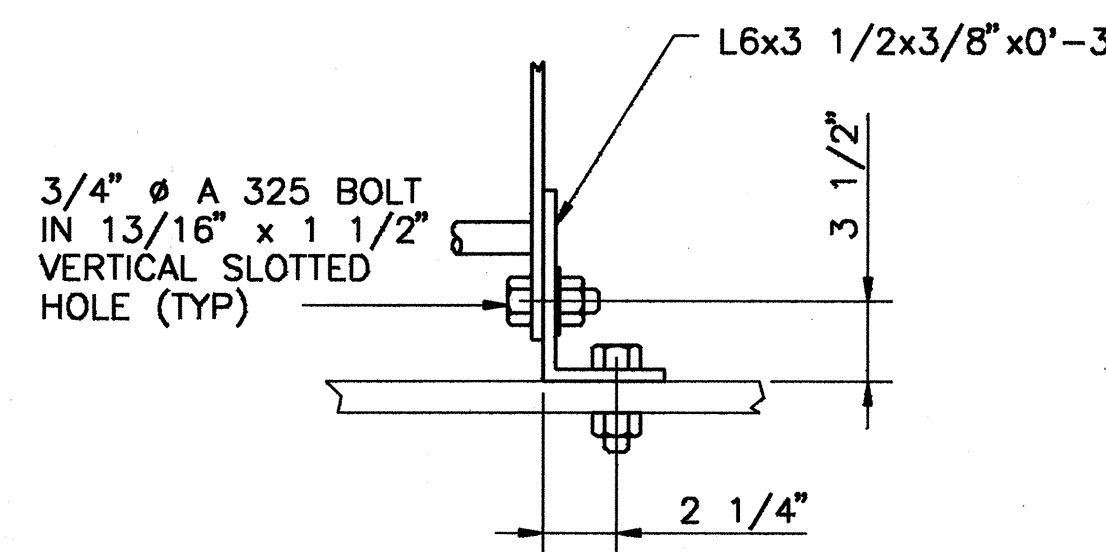
6. ALL HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH A.S.T.M. A153.
7. DOMEHEAD BOLTS SHALL BE PROVIDED WITH FINS OR SQUARE SHANKS TO PREVENT UNWANTED TURNING.
8. DOMEHEAD BOLTS AND DRIVE SPIKES SHALL HAVE SLOTS OR HOLES ON HEADS FOR 6d NAILS. DRIVE SPIKES SHALL BE 7/8".
9. NO SEPARATE PAYMENT SHALL 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".



DETAIL A



DETAIL B



DETAIL C

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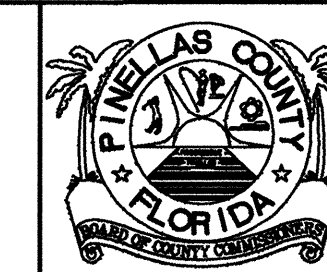
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Date	By	Description	Date	By	Description

SEAL:

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



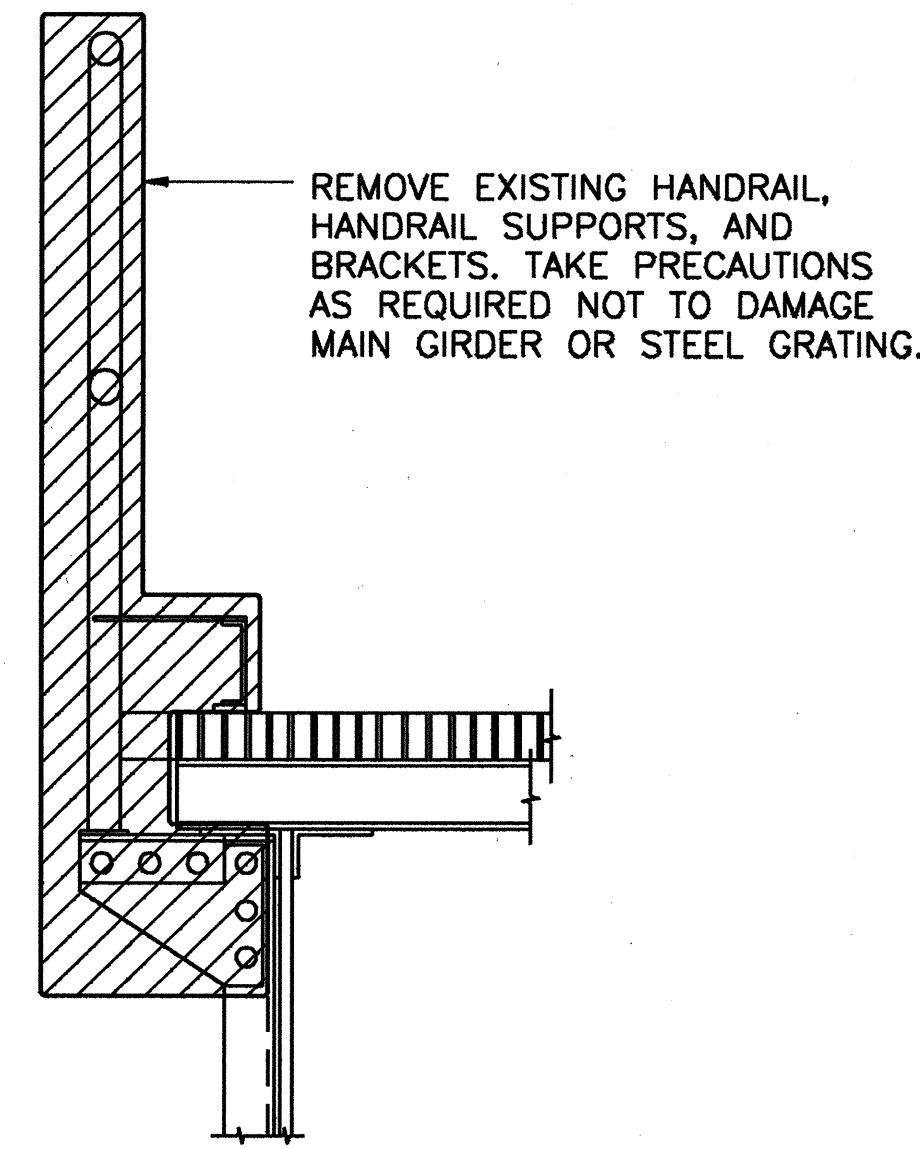
DSA GROUP, INC.
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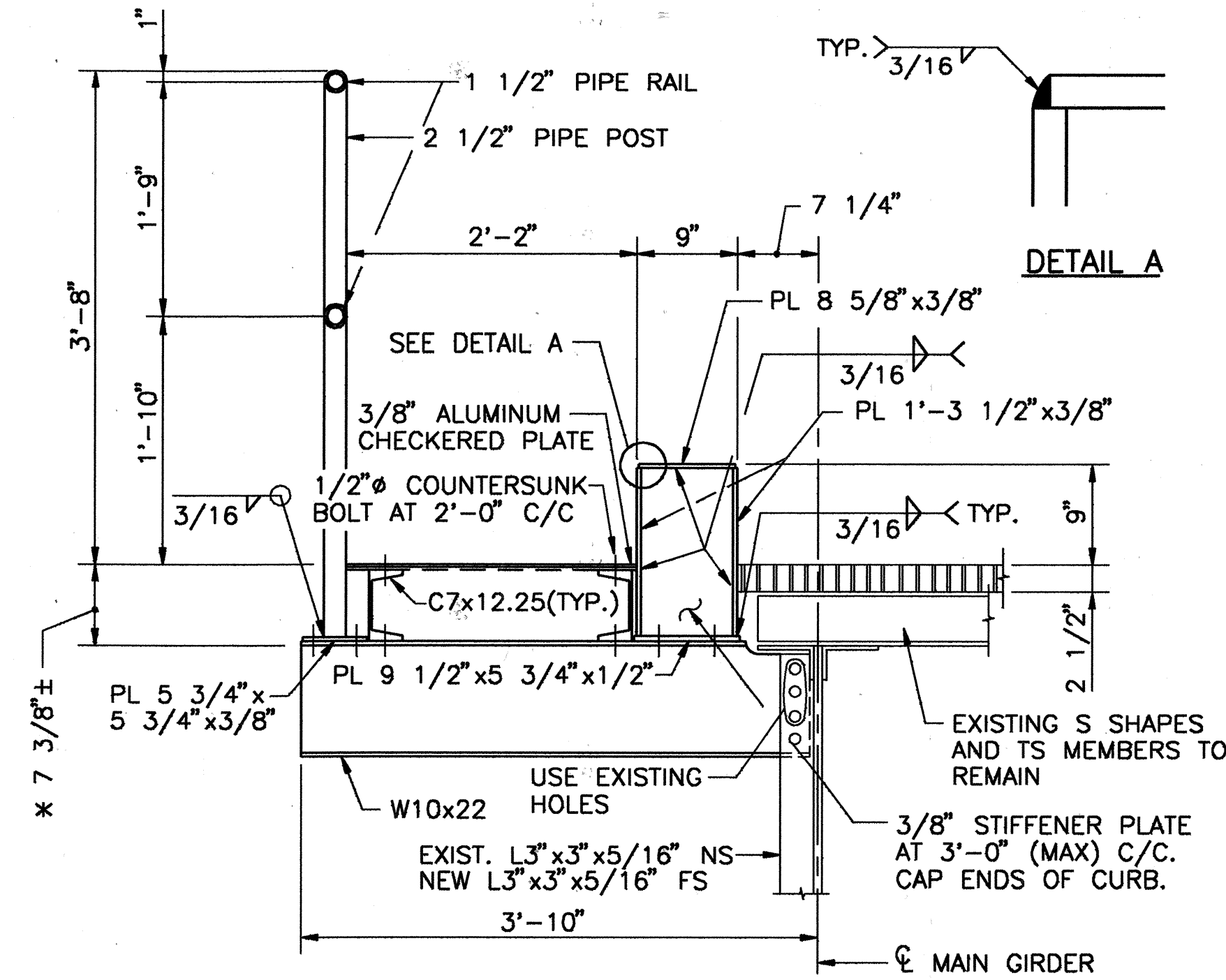
PINELLAS COUNTY
DEPARTMENT OF
PUBLIC WORKS

SHEET TITLE:	SHEET
ACCESS LADDERS AND PLATFORM DETAILS	S-10
PROJECT NAME:	BECKETT BRIDGE REPAIRS

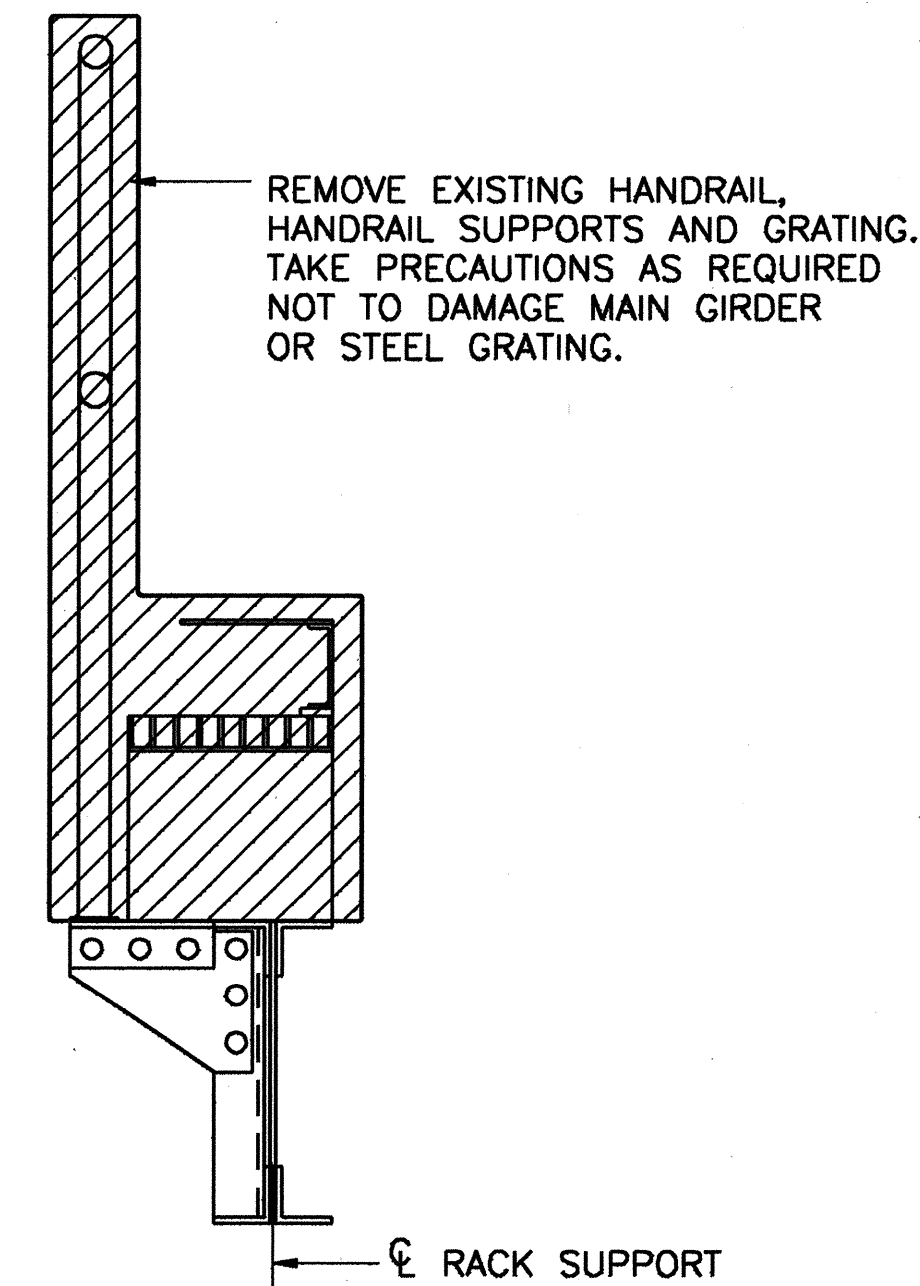
Timothy J. Farrell



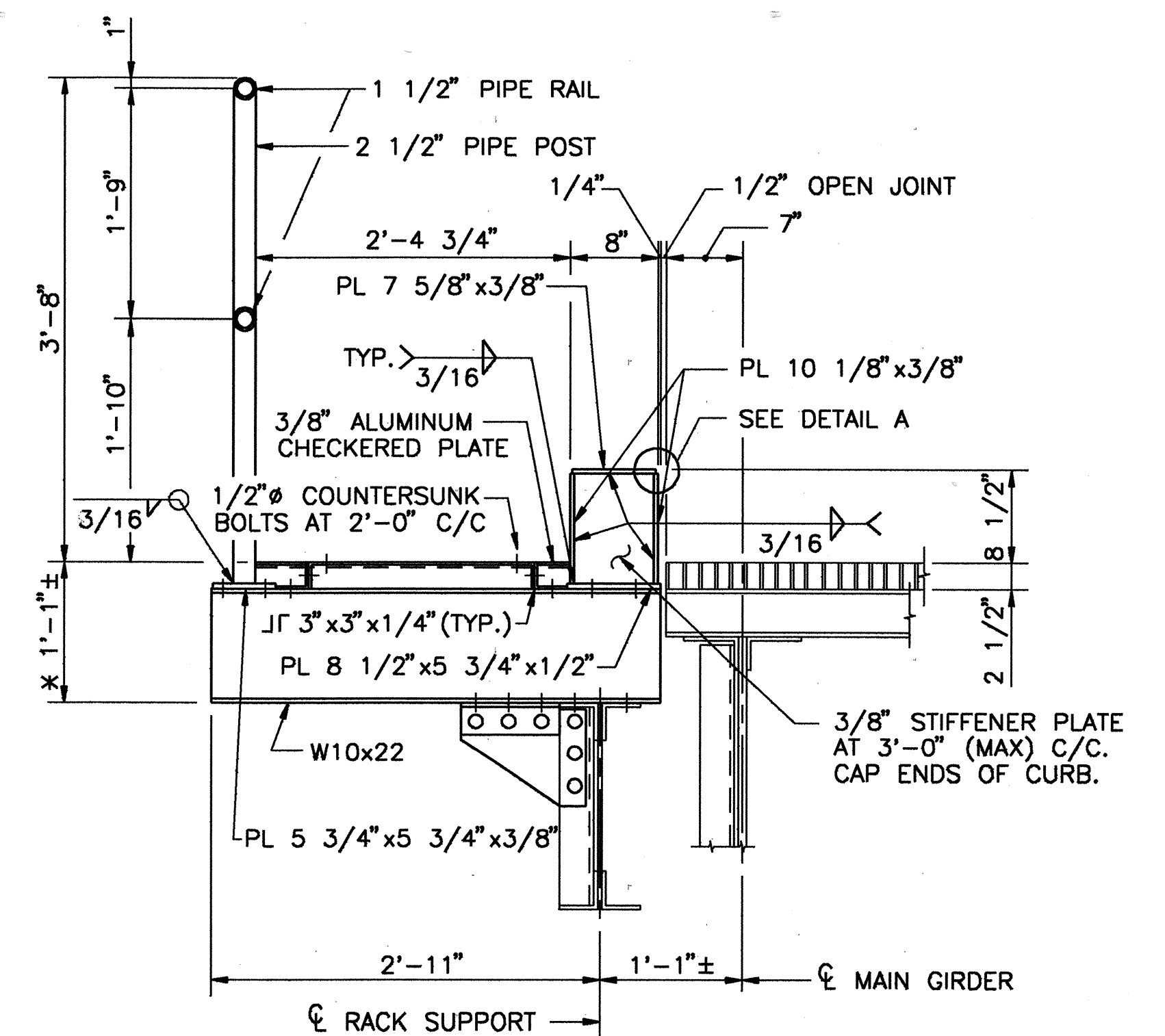
SECTION A-A DEMOLITION



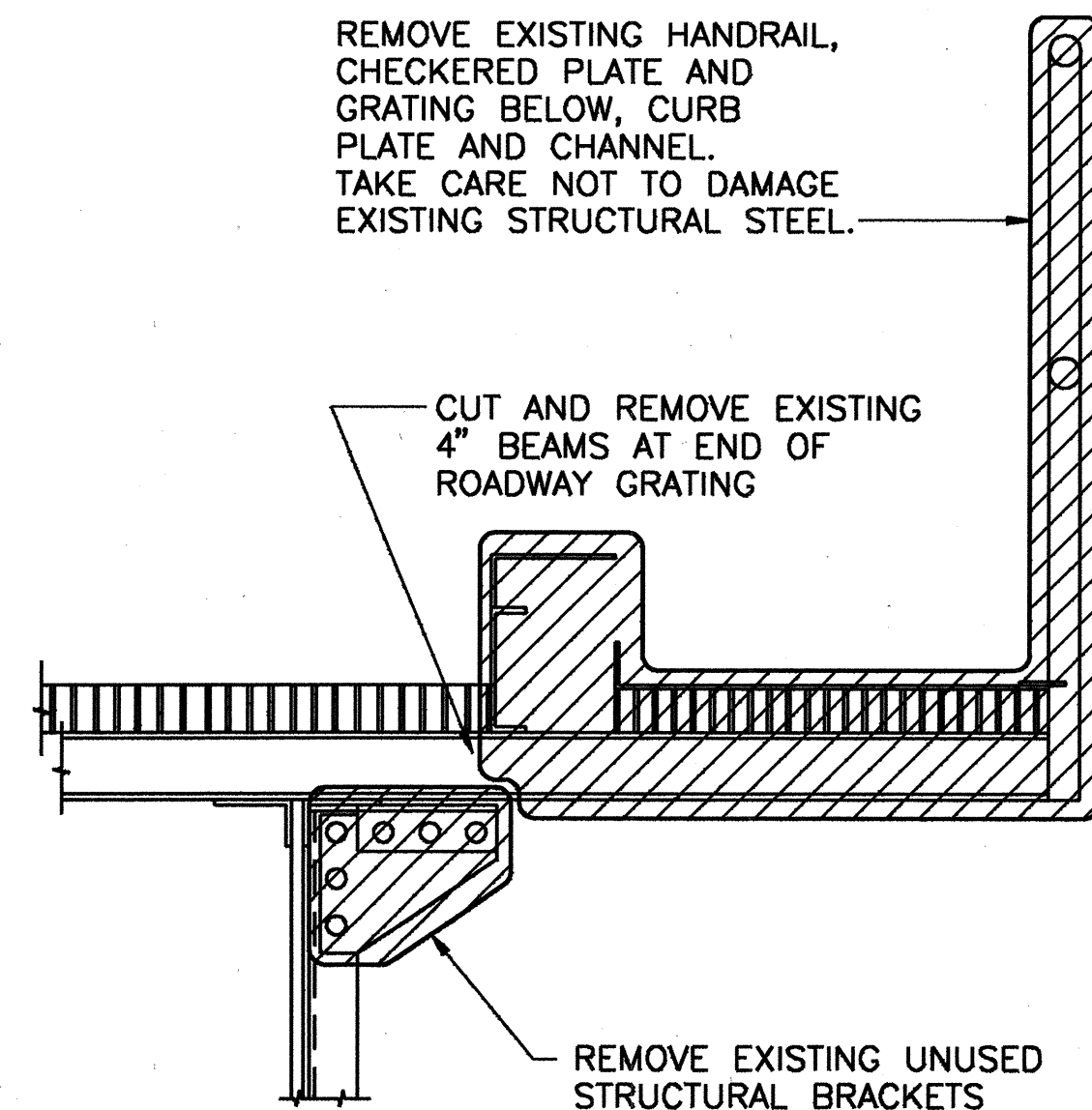
SECTION A-A REHABILITATION
(REQ'D. AT 3 LOCATIONS)



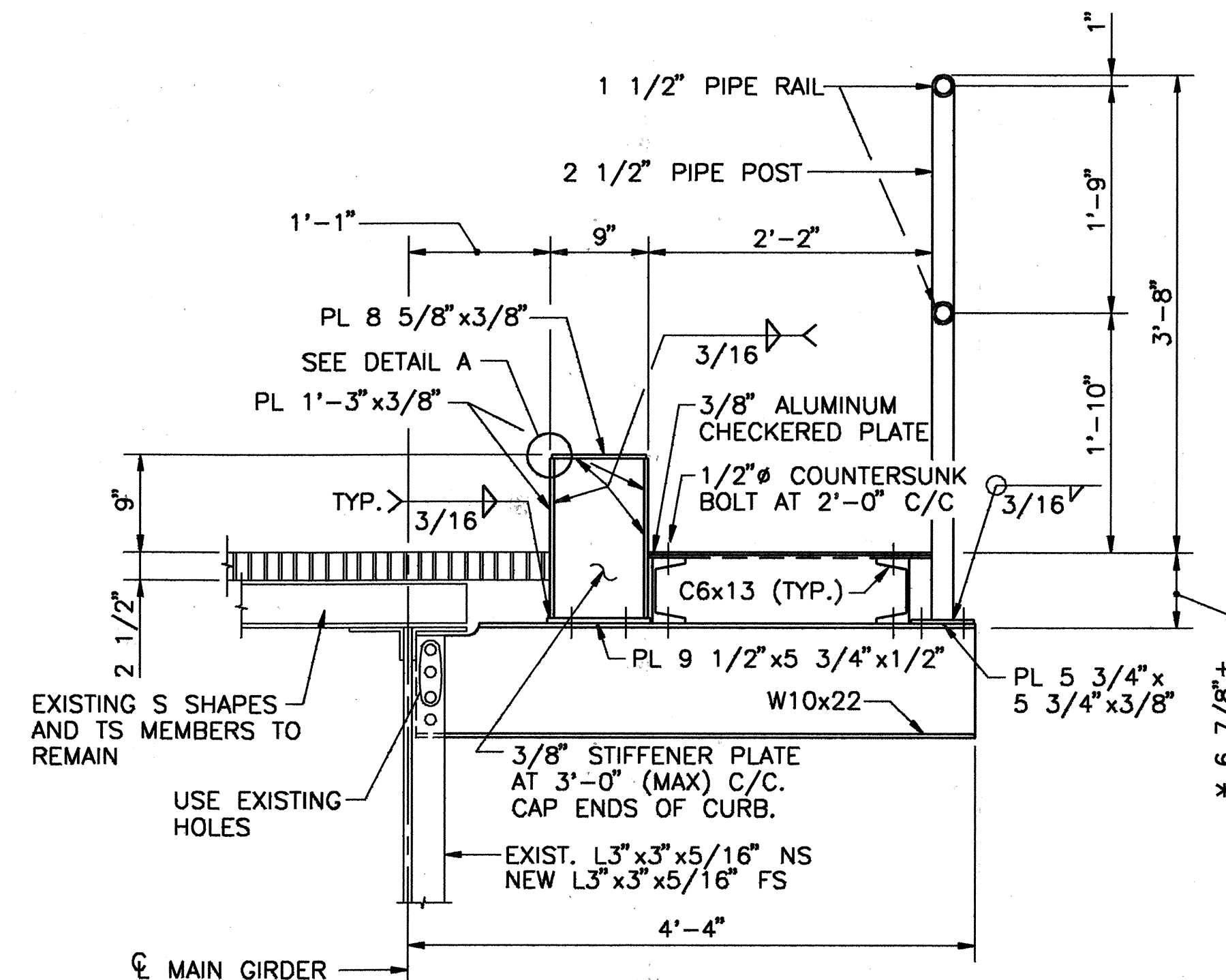
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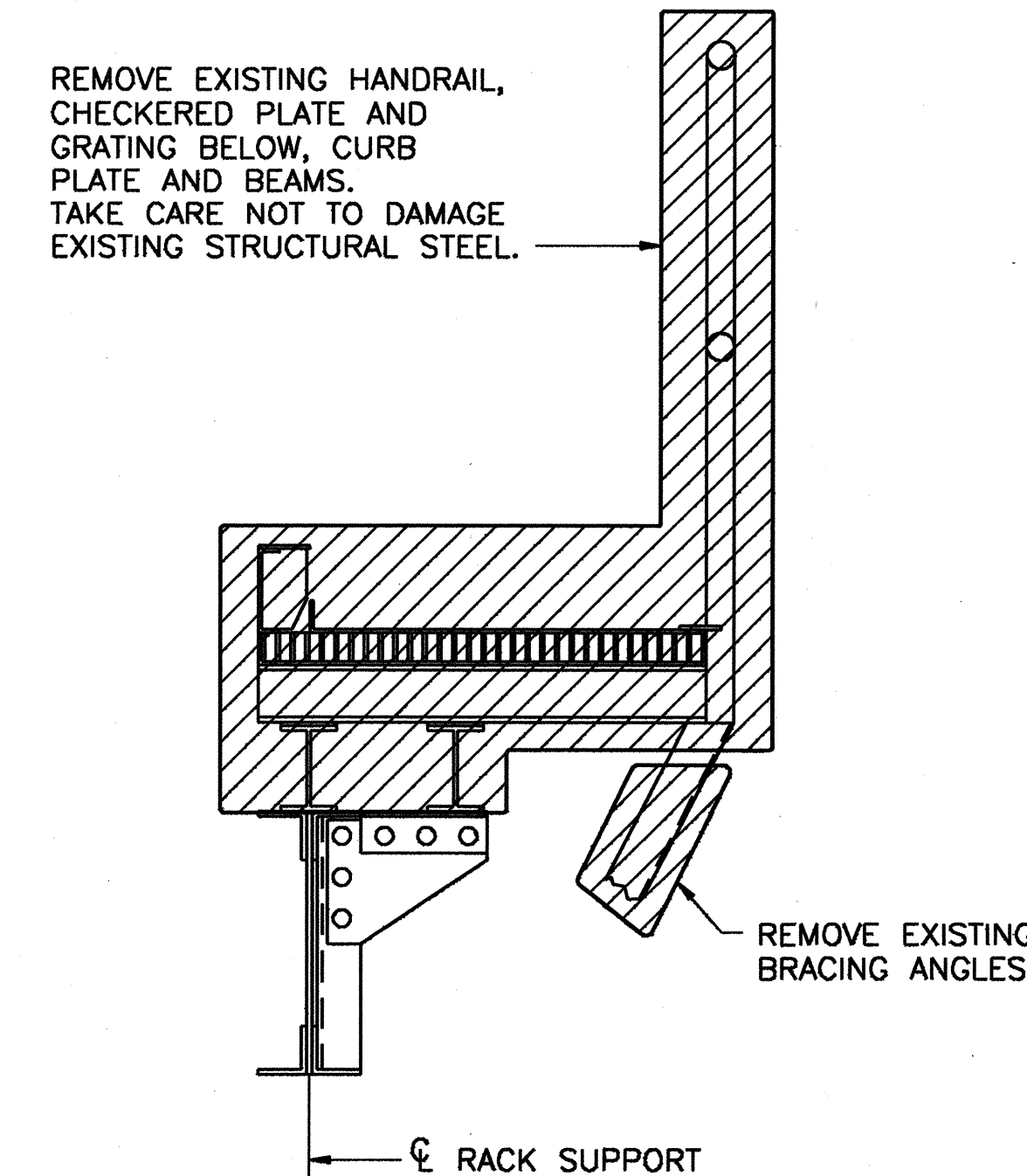
SECTION B-B REHABILITATION
(REQ'D. AT 3 LOCATIONS)



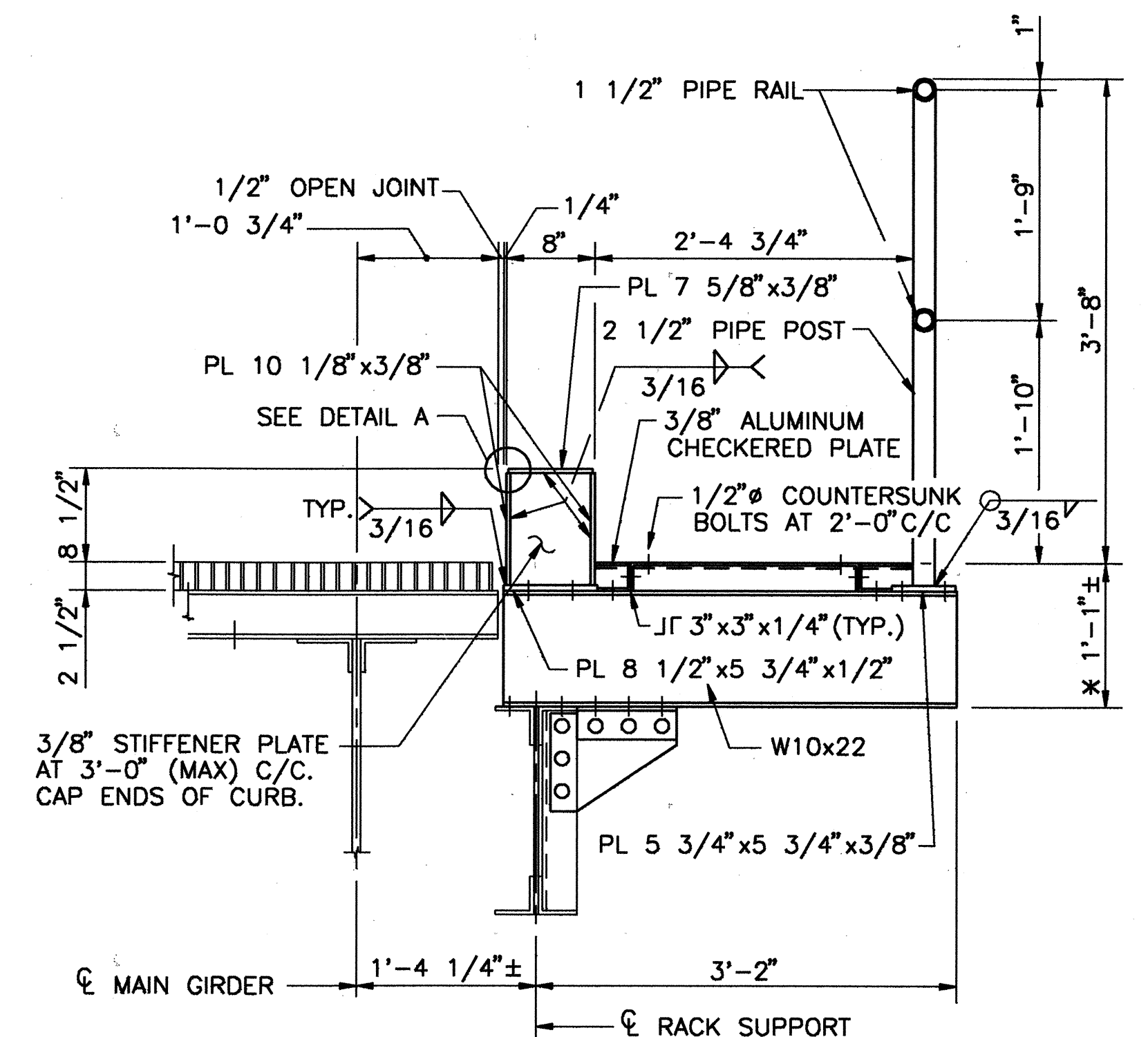
SECTION C-C DEMOLITION



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

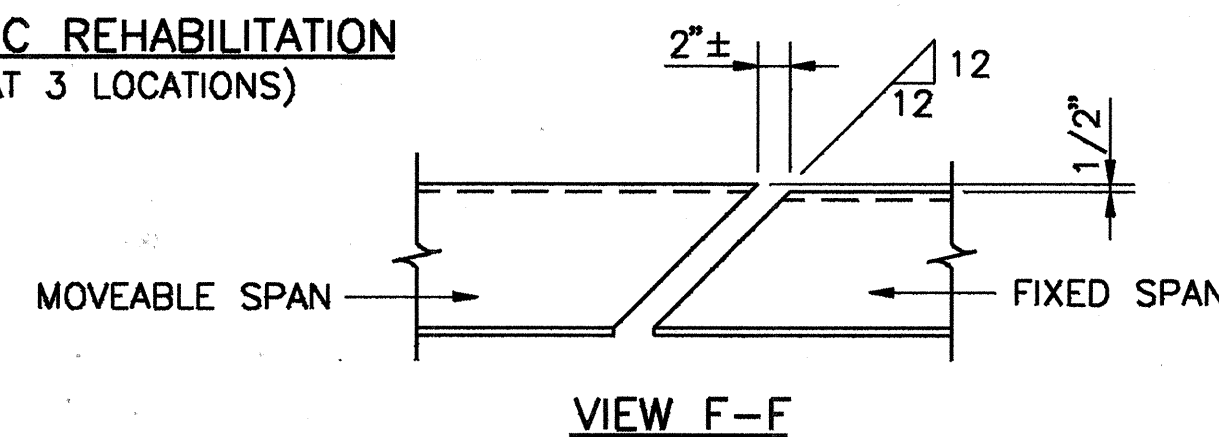


SECTION D-D DEMOLITION



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

* 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.



VIEW F-F

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

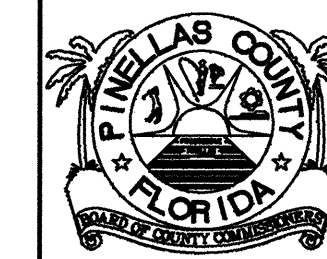
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REVISIONS			REVISIONS		
Date	By	Description	Date	By	Description

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



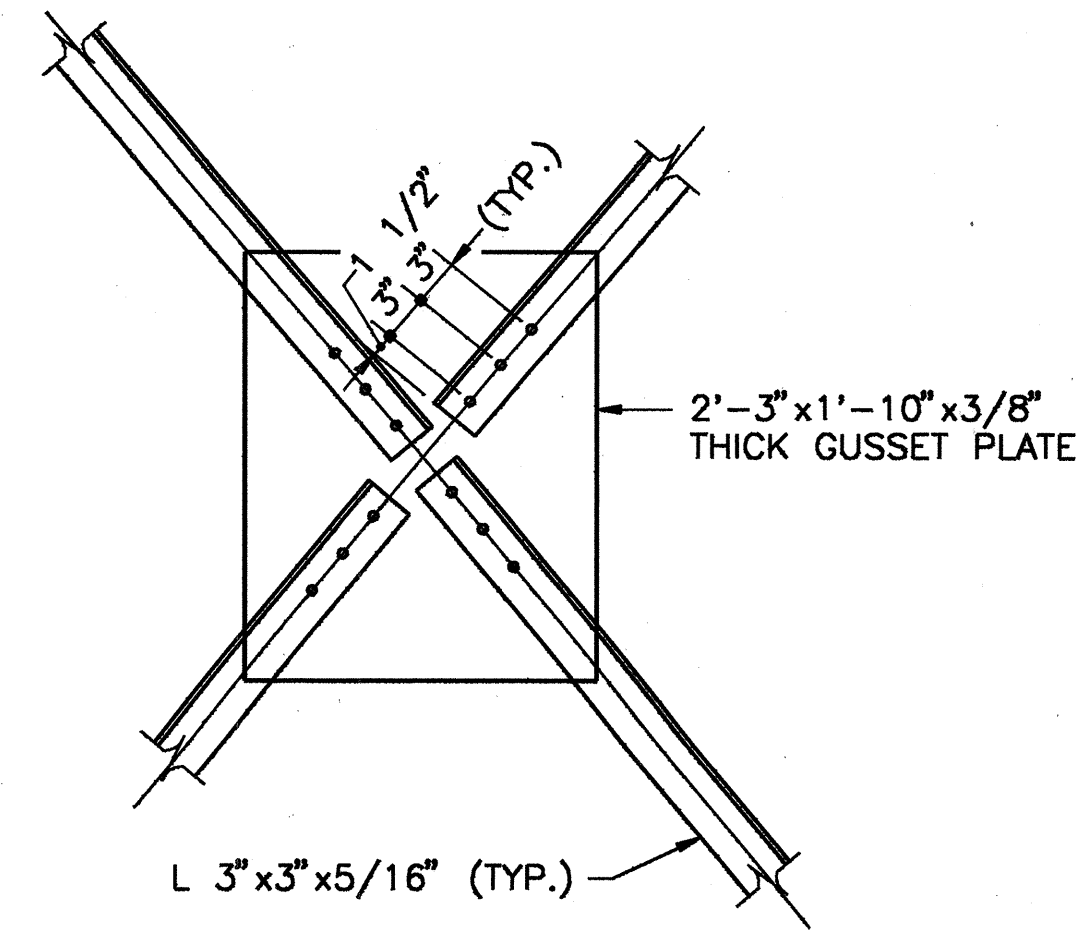
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2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607



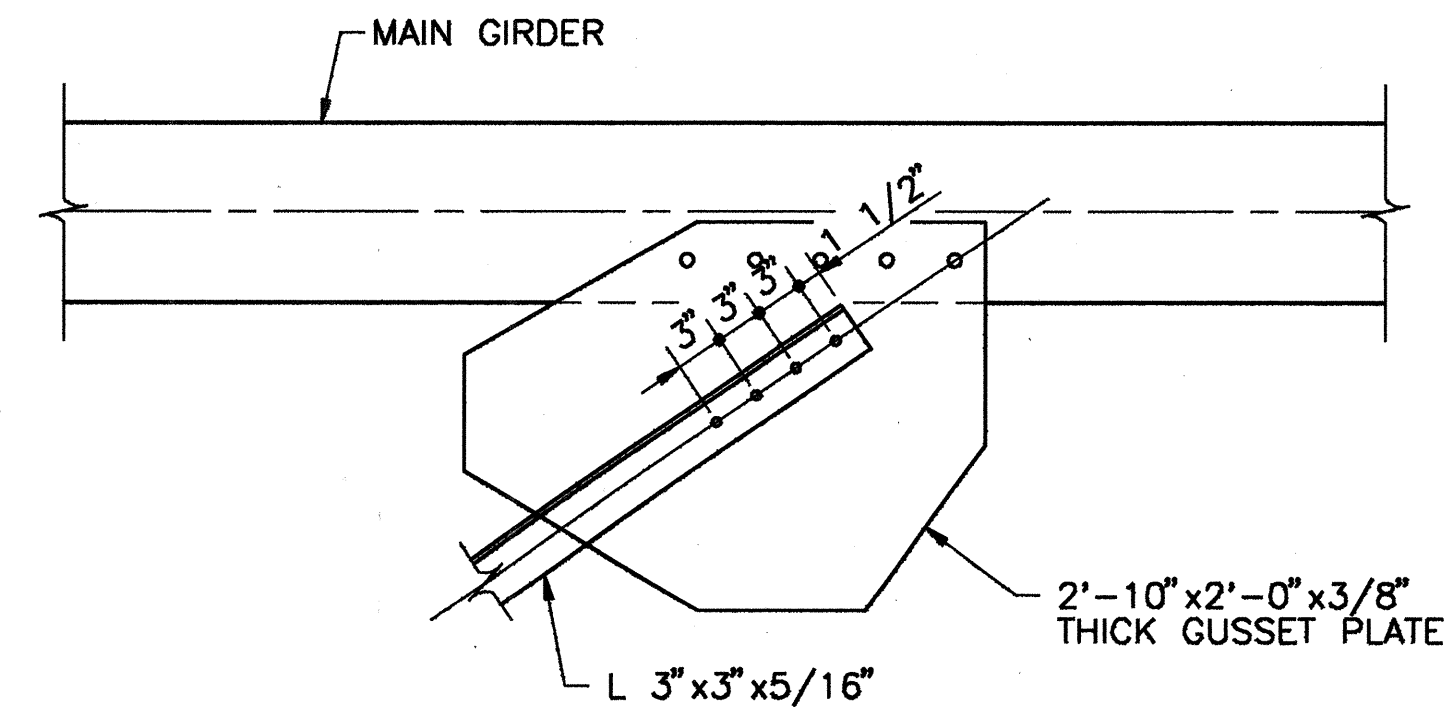
PINELLAS COUNTY
DEPARTMENT OF
PUBLIC WORKS

SHEET TITLE:	BASCULE SPAN- SIDEWALK AND HANDRAIL DETAILS	SHEET
PROJECT NAME:	BECKETT BRIDGE REPAIRS	S-12

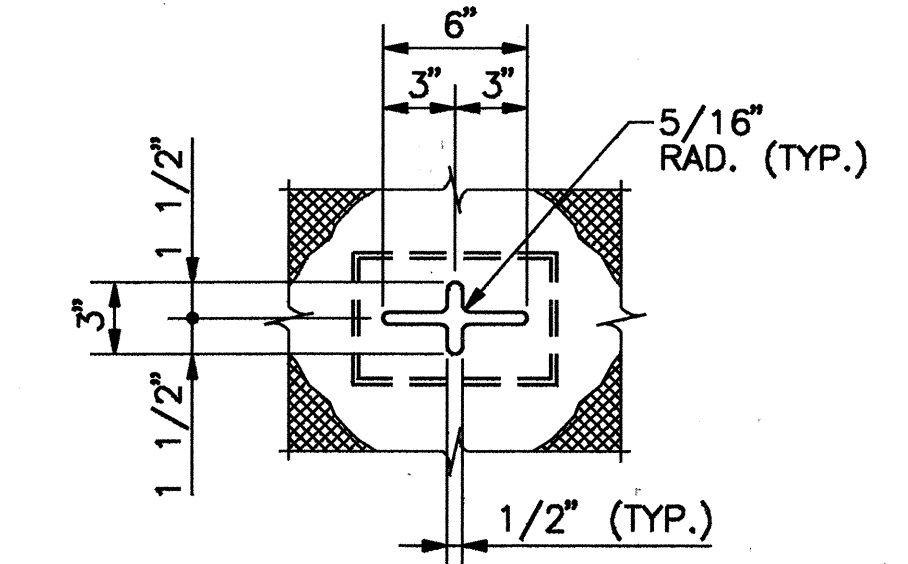
Timothy J. Farrell



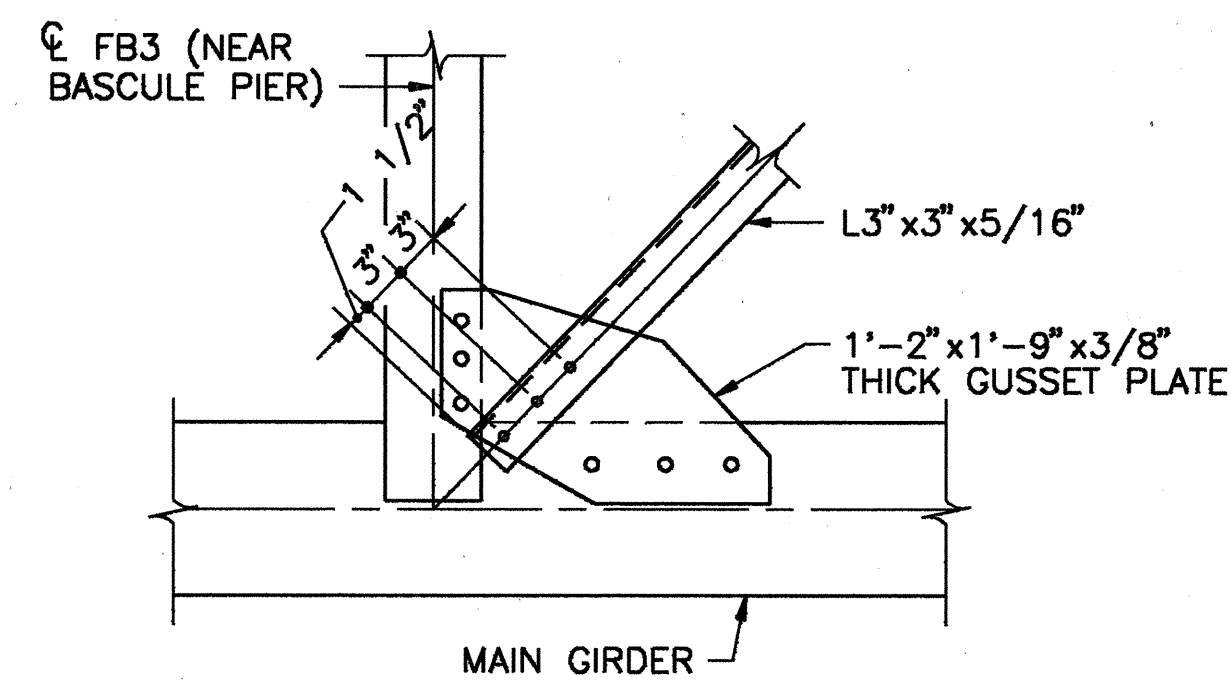
DETAIL "A"



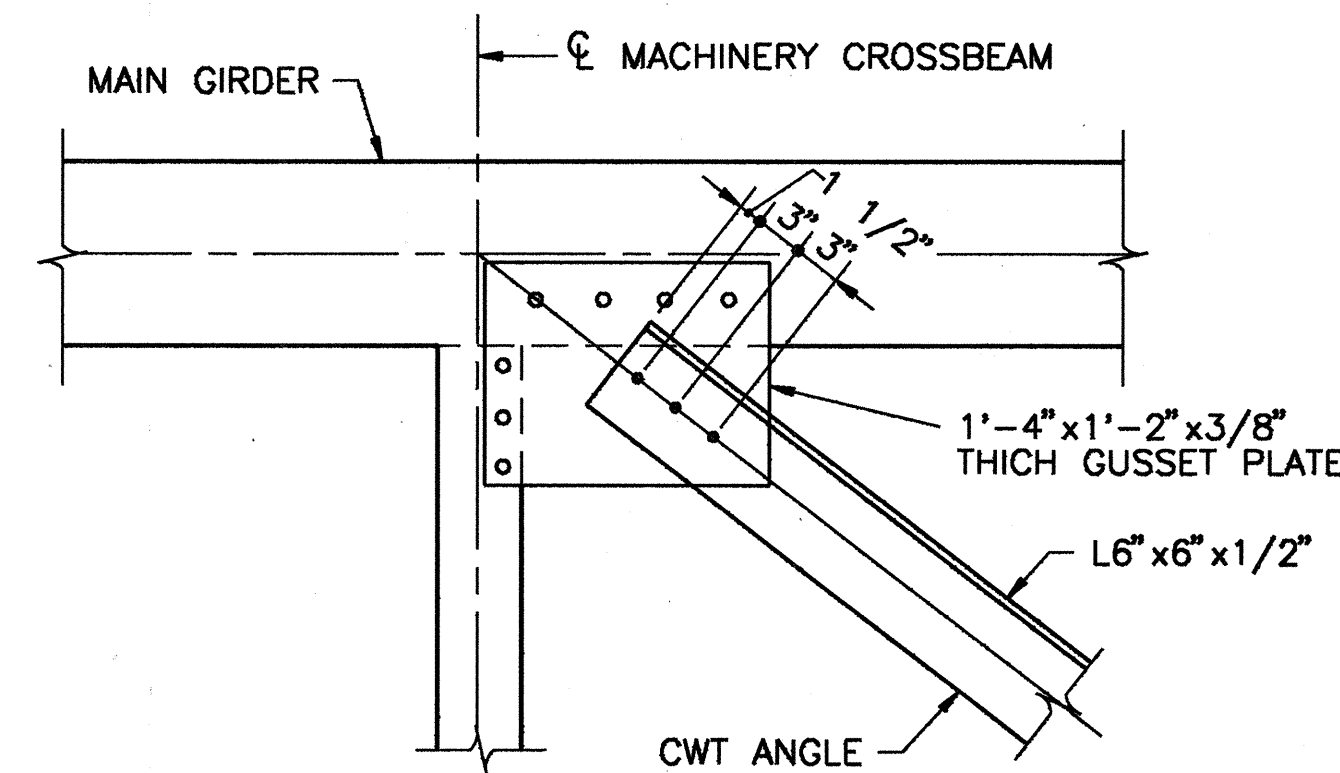
DETAIL "B"



DETAIL "C"



DETAIL "D"



DETAIL "E"

- 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" 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		
Date	By	Description	Date	By	Description

SEAL:			Drawn by	KTL	5-95
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			Approved by	T.J. FARRELL	



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TAMPA, FLORIDA 33607

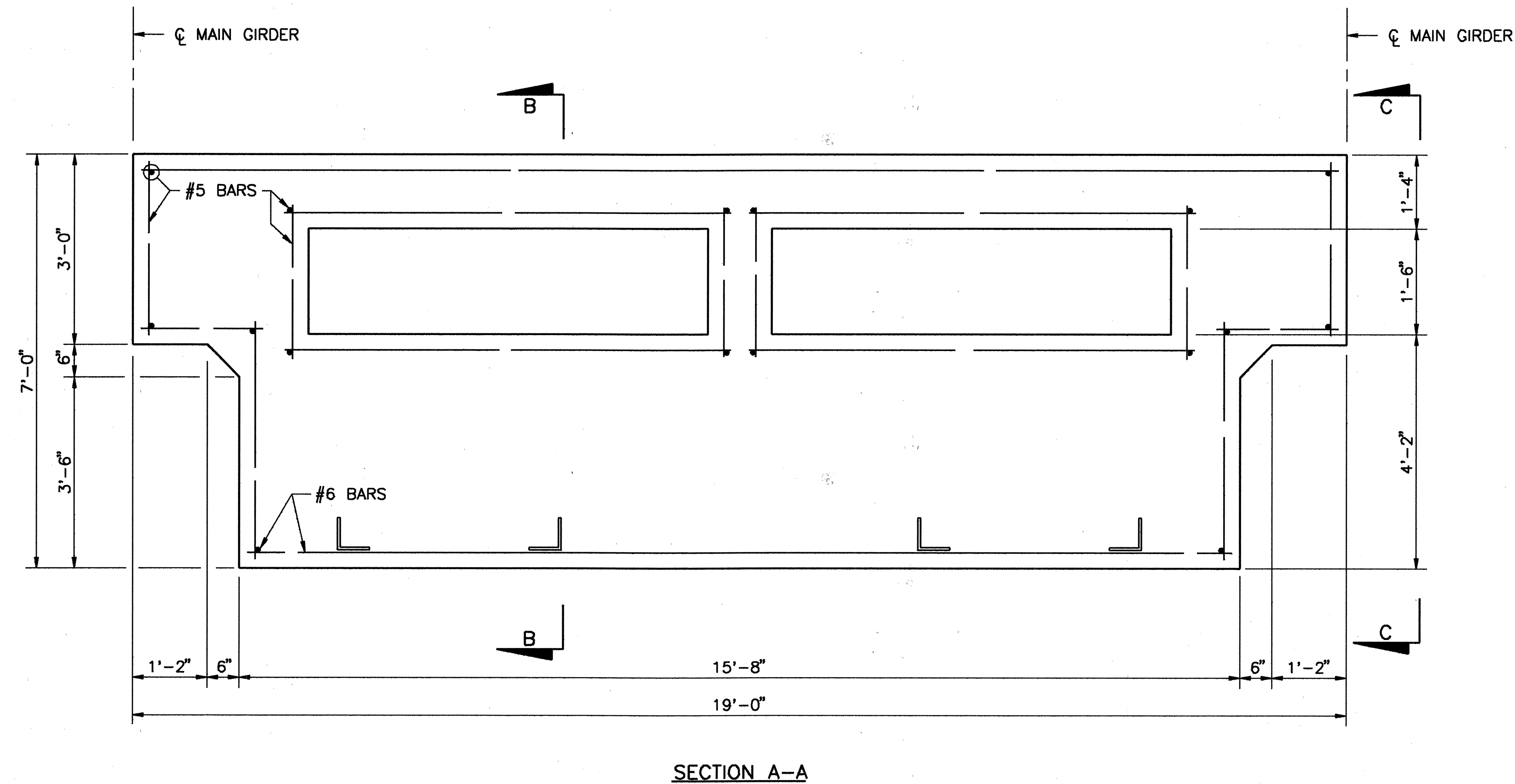
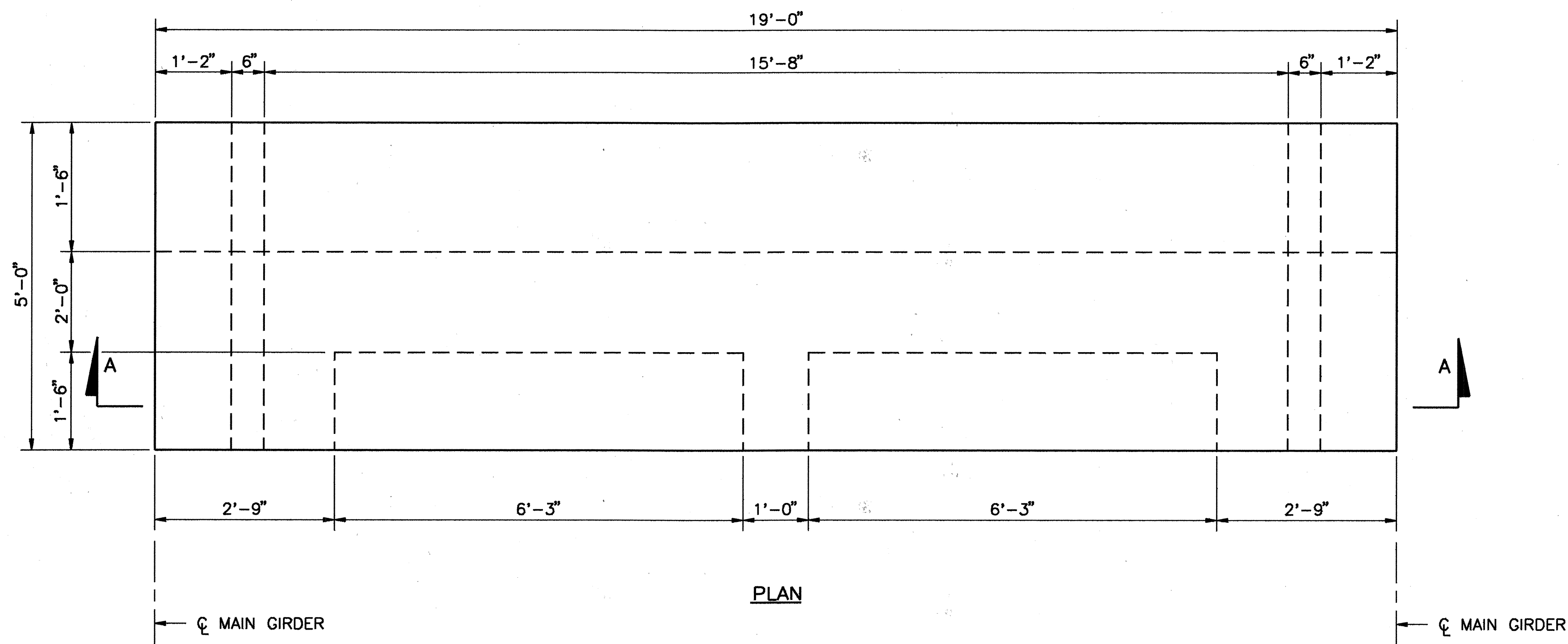


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PUBLIC WORKS

SHEET TITLE:	STRUCTURAL STEEL REPAIR DETAILS
PROJECT NAME:	BECKETT BRIDGE REPAIRS

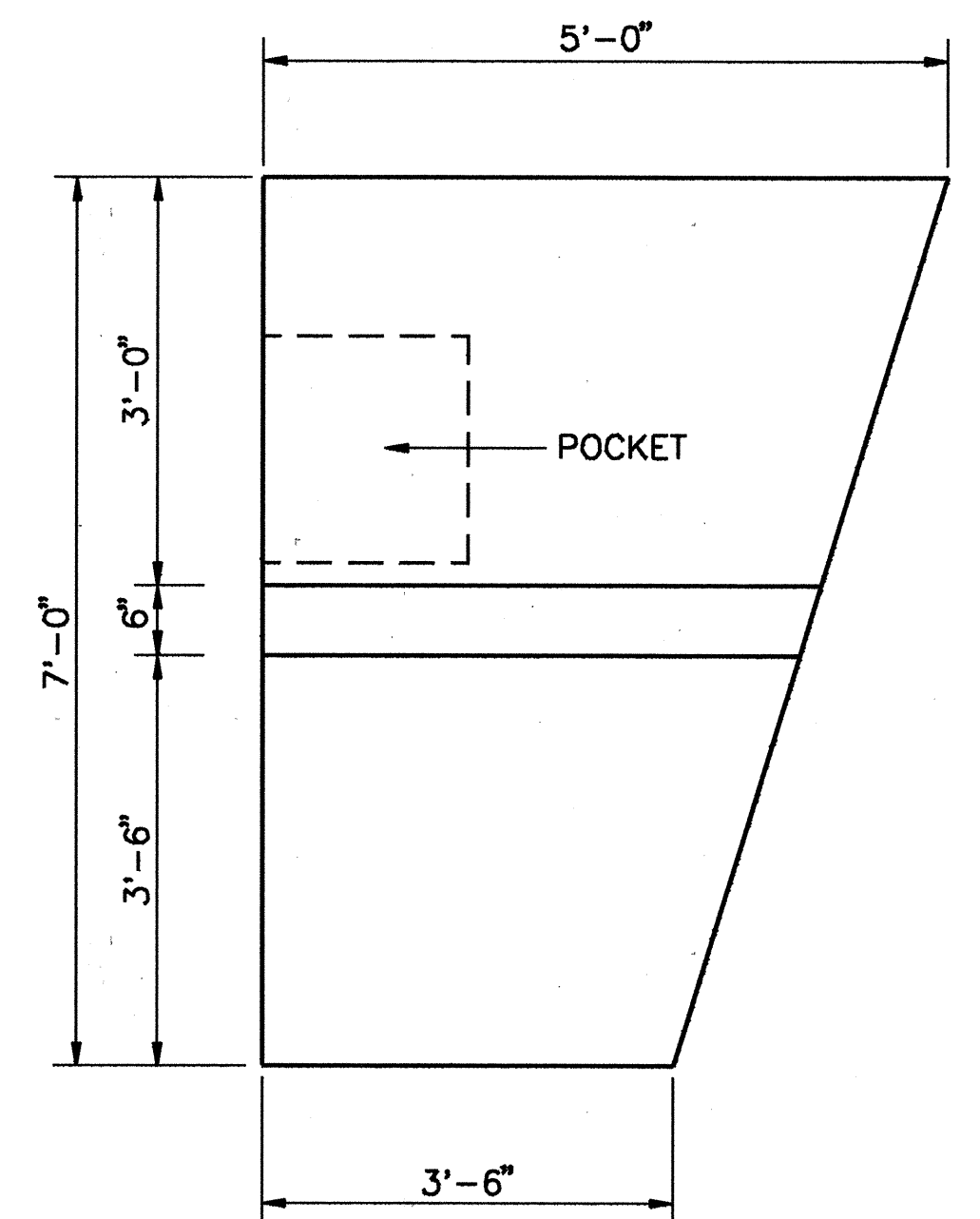
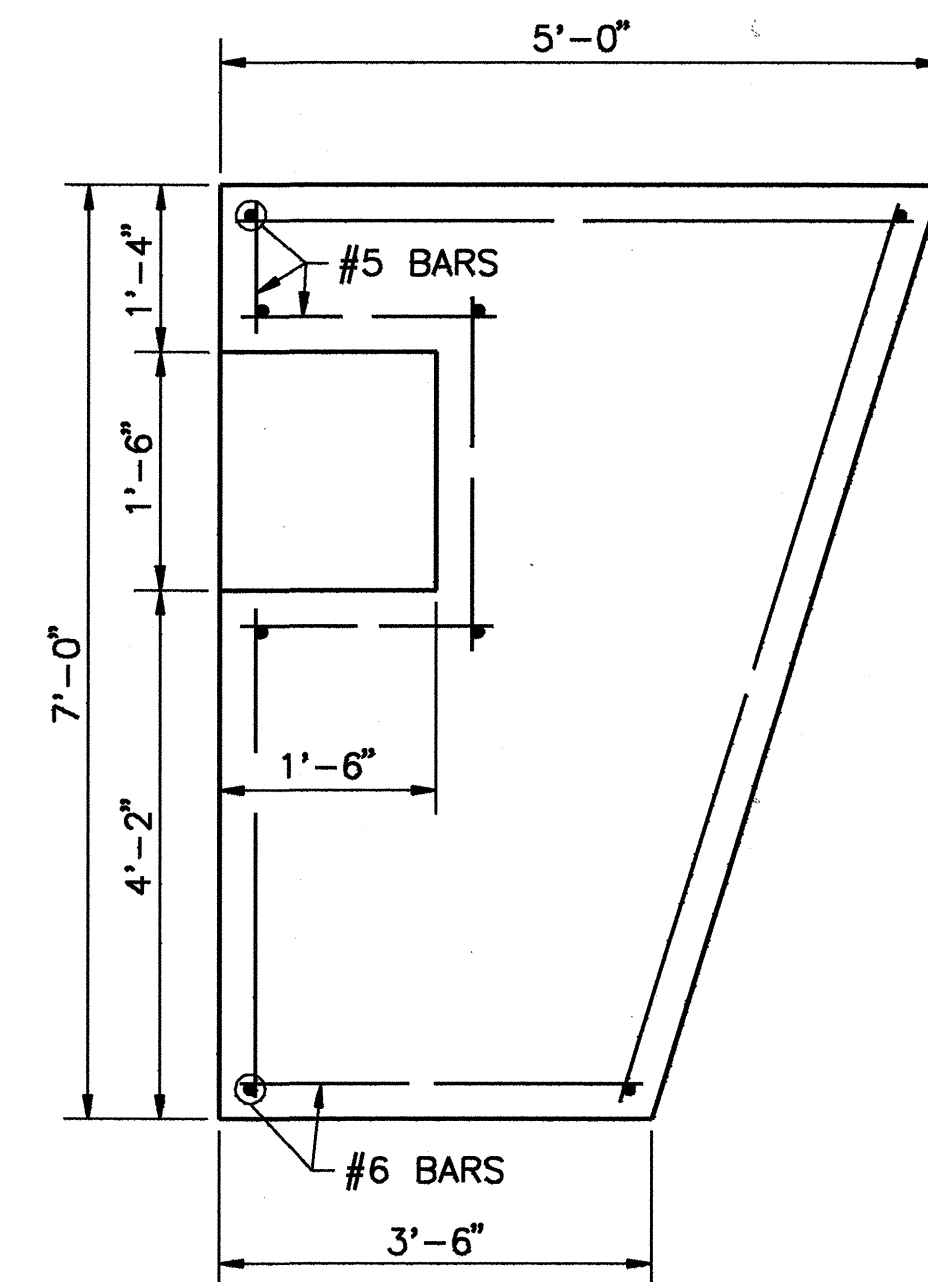
SHEET
S-13

T. J. Farrell



- 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 INCLUDED 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



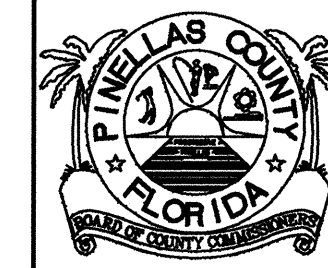
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REVISIONS			REVISIONS		
Date	By	Description	Date	By	Description

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

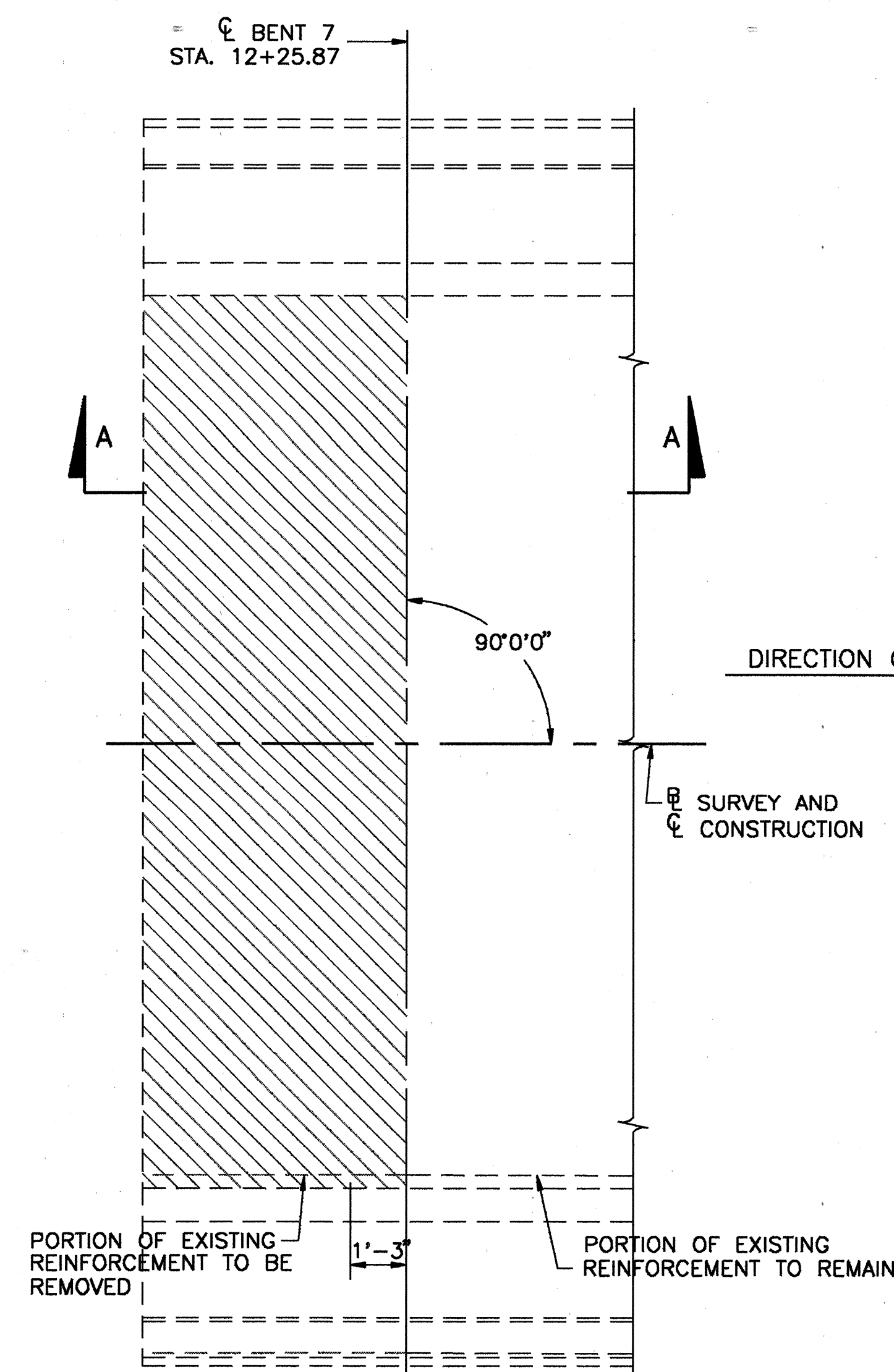


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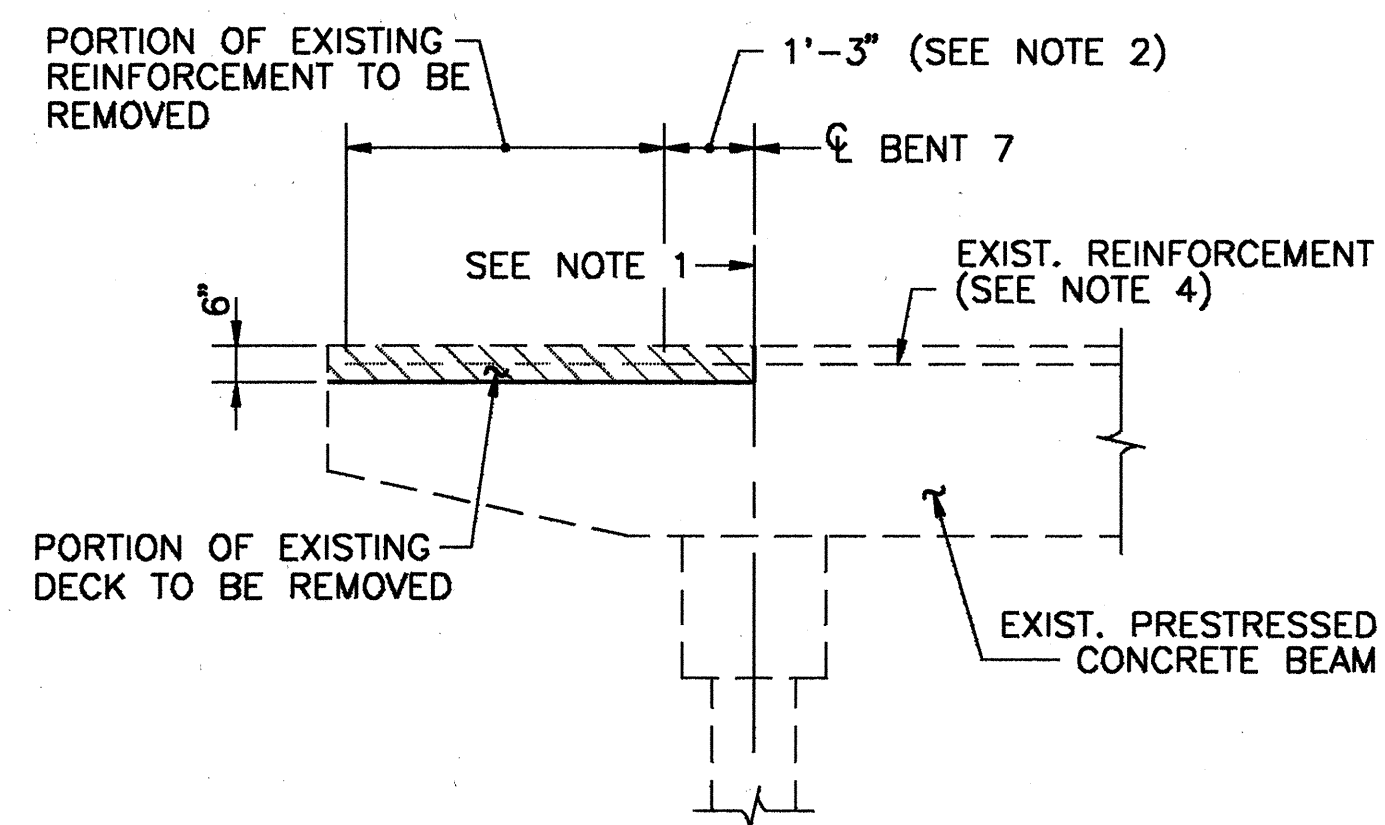


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SHEET TITLE:		SHEET S-14
COUNTERWEIGHT DETAILS		
PROJECT NAME:		
BECKETT BRIDGE REPAIRS		

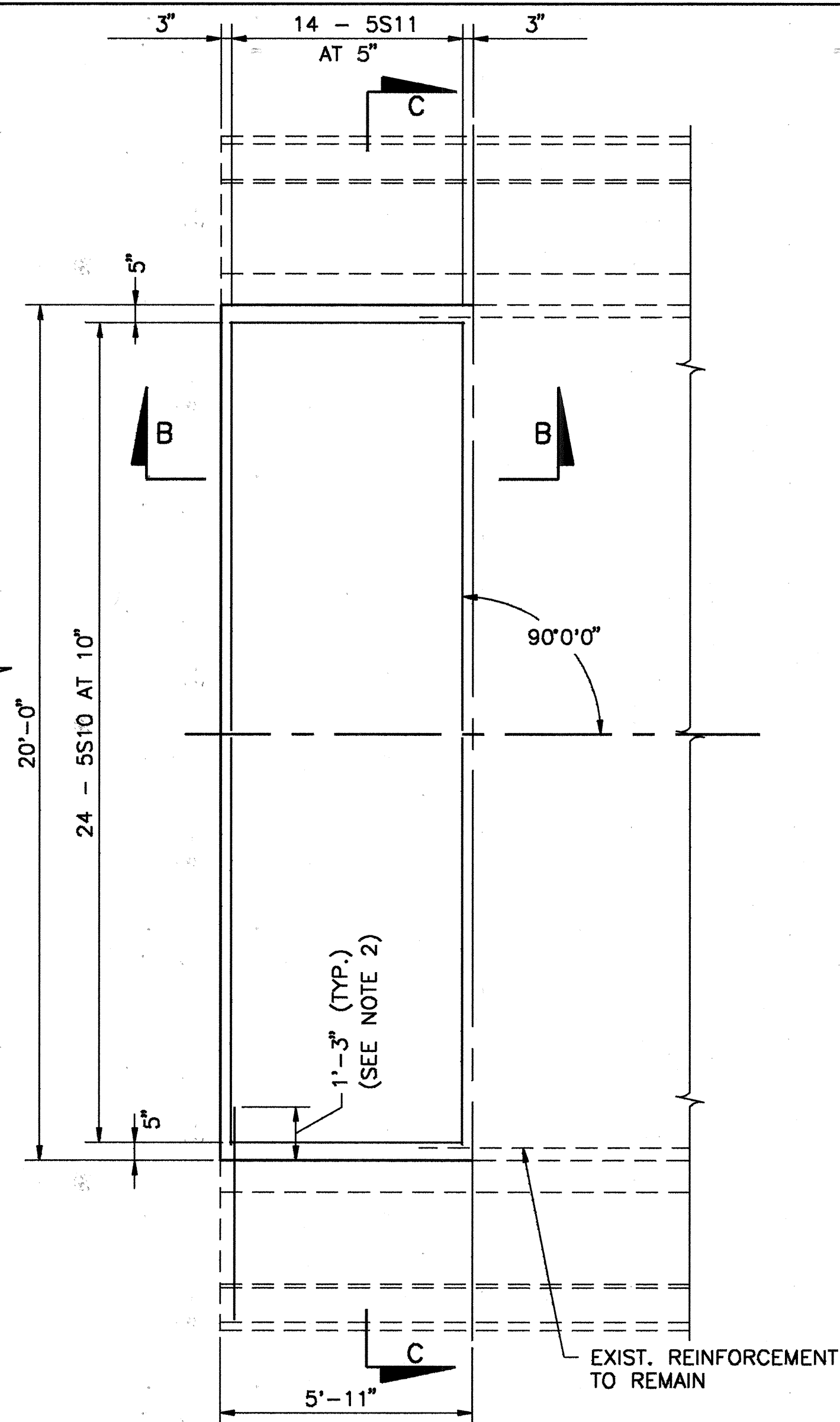


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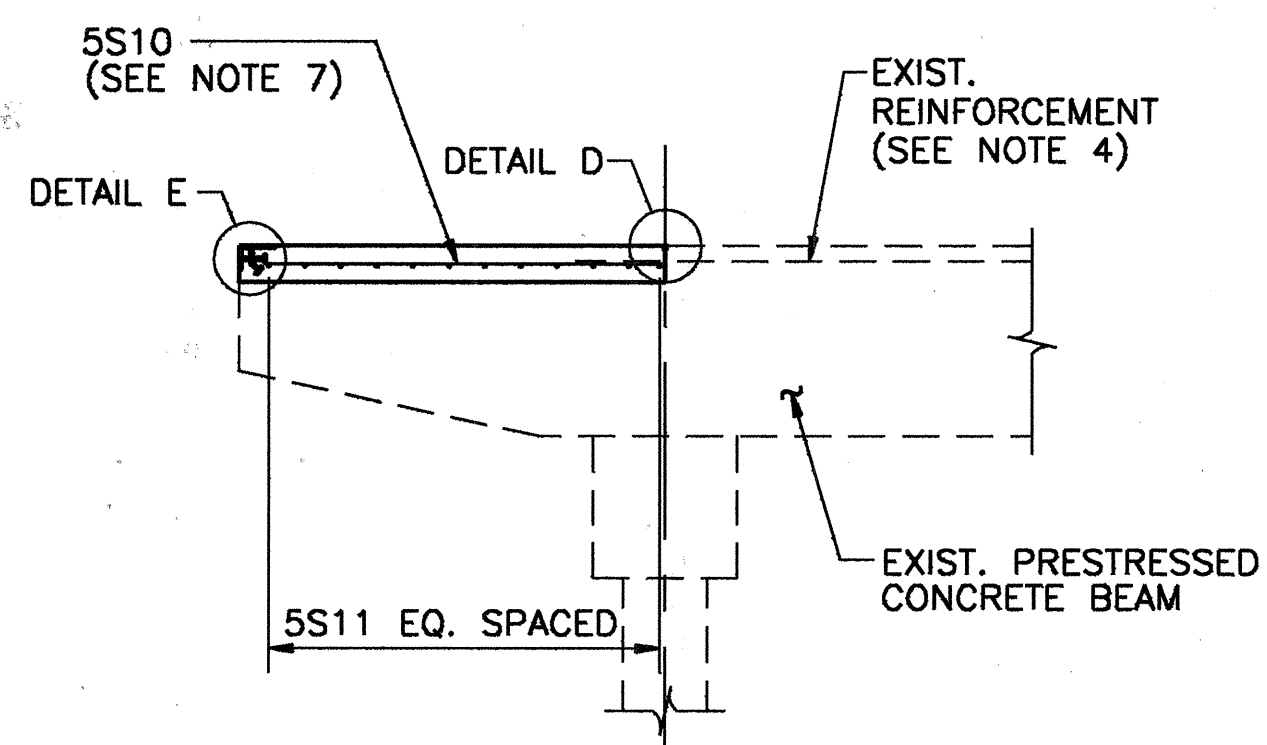


SECTION A-A

DEMOLITION PHASE

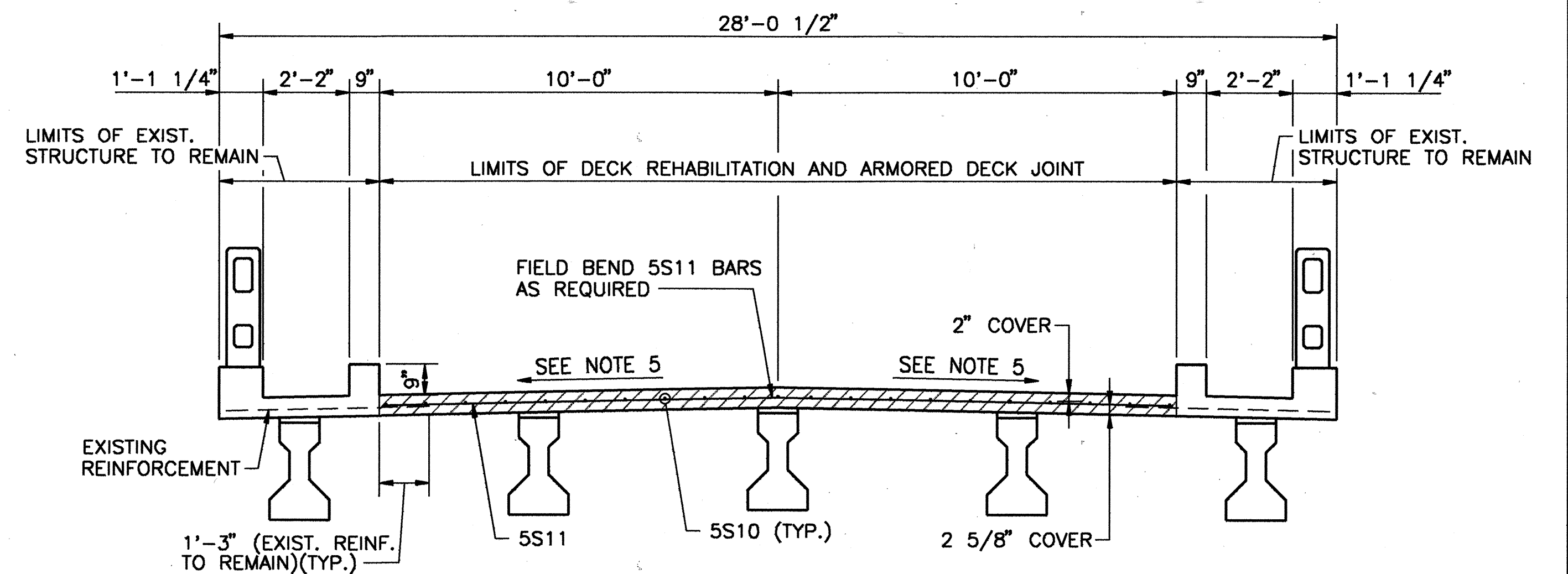


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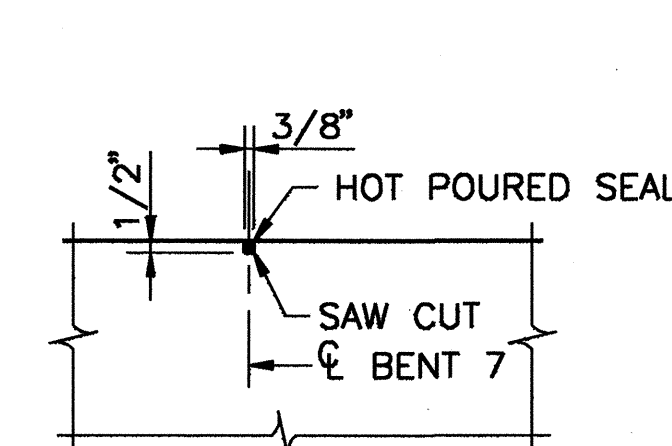


SECTION B-B

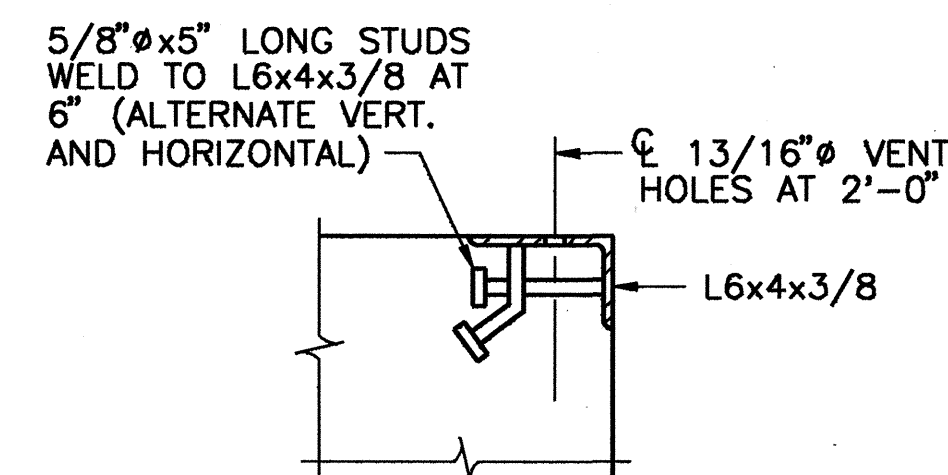
CONSTRUCTION PHASE



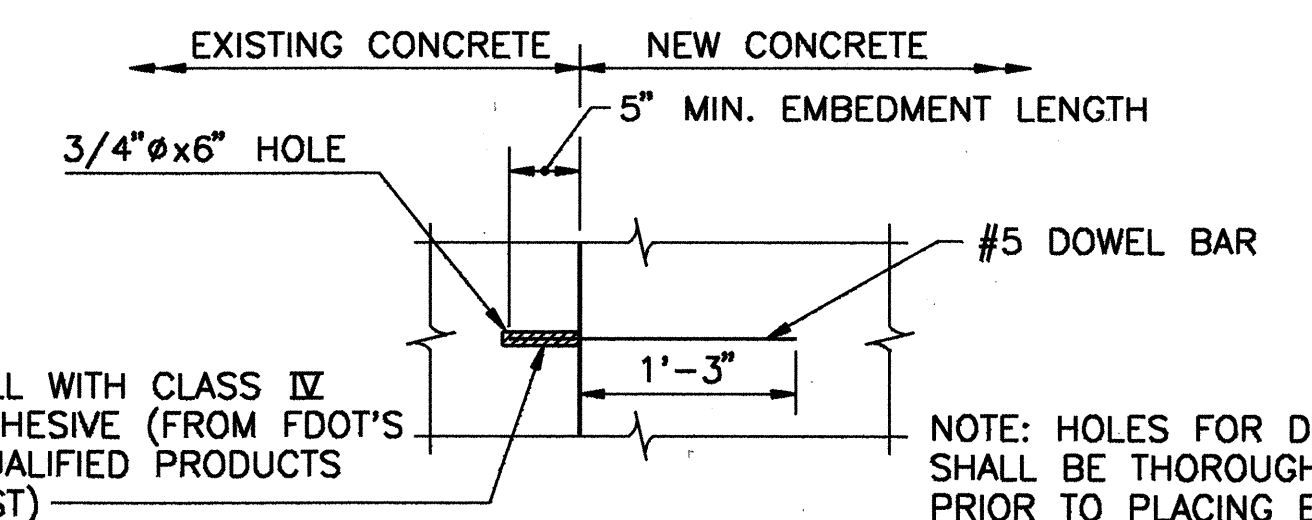
SECTION C-C



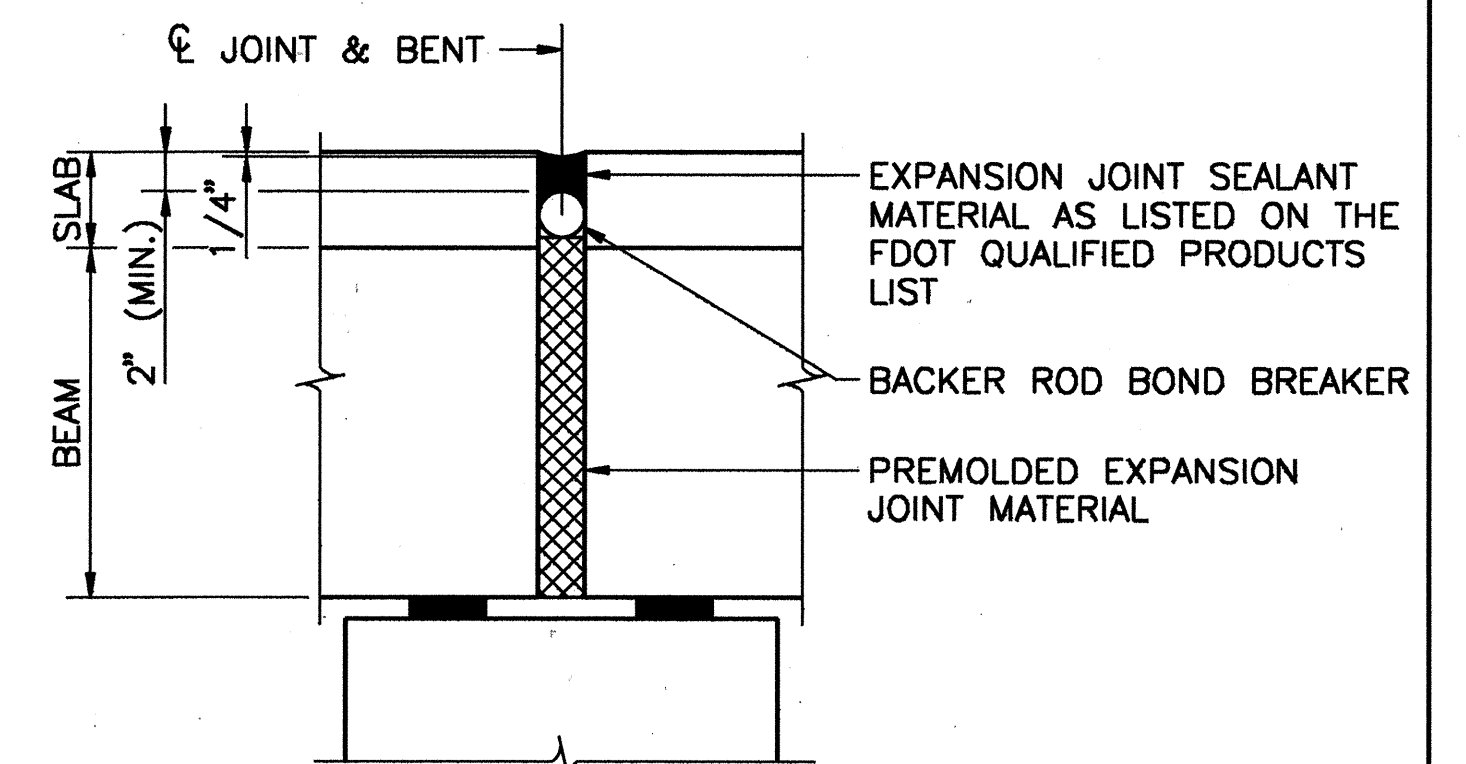
DETAIL D



DETAIL E



DETAIL F



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. [ZZ] DENOTES EXISTING STRUCTURE TO BE REMOVED.
7. IF THE EXISTING REINFORCEMENT SPACING DOES NOT ACCOMMODATE 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.

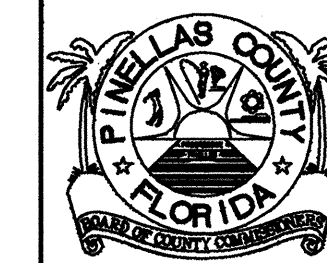
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REVISIONS			REVISIONS		
Date	By	Description	Date	By	Description

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	

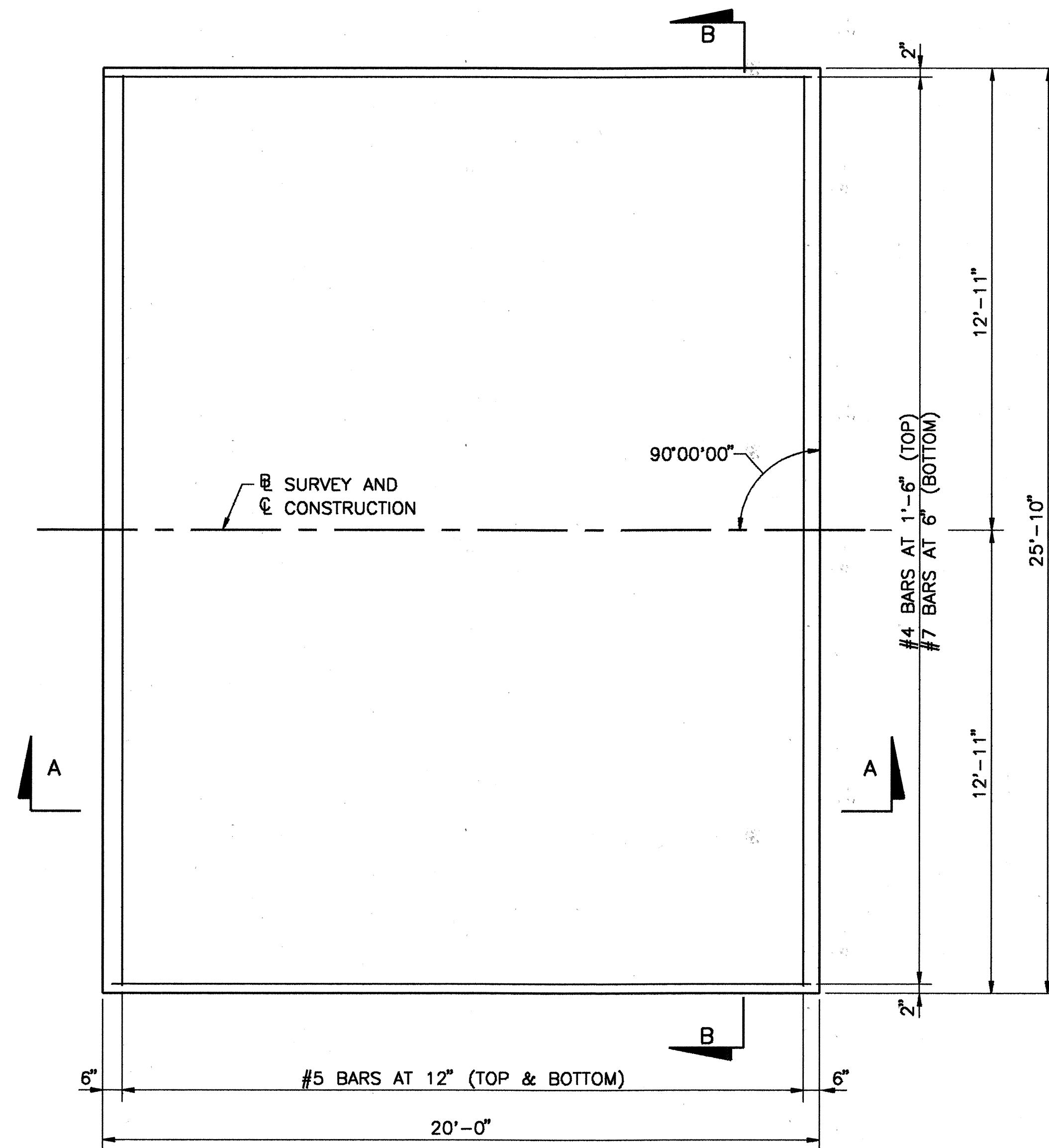


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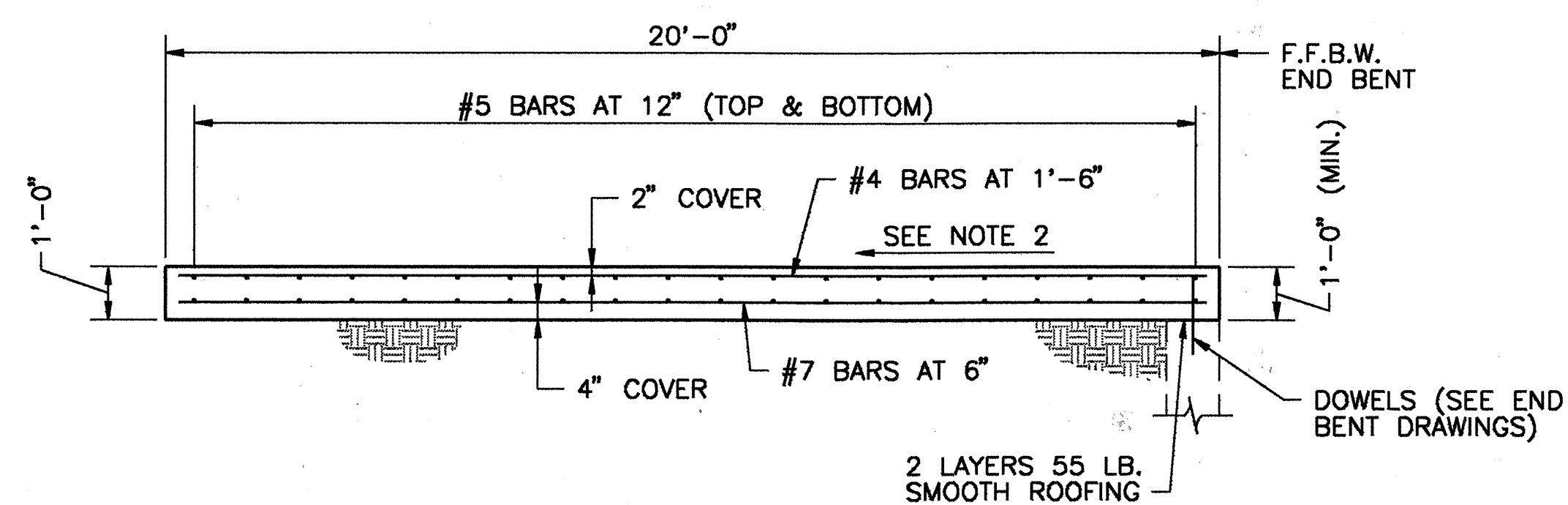


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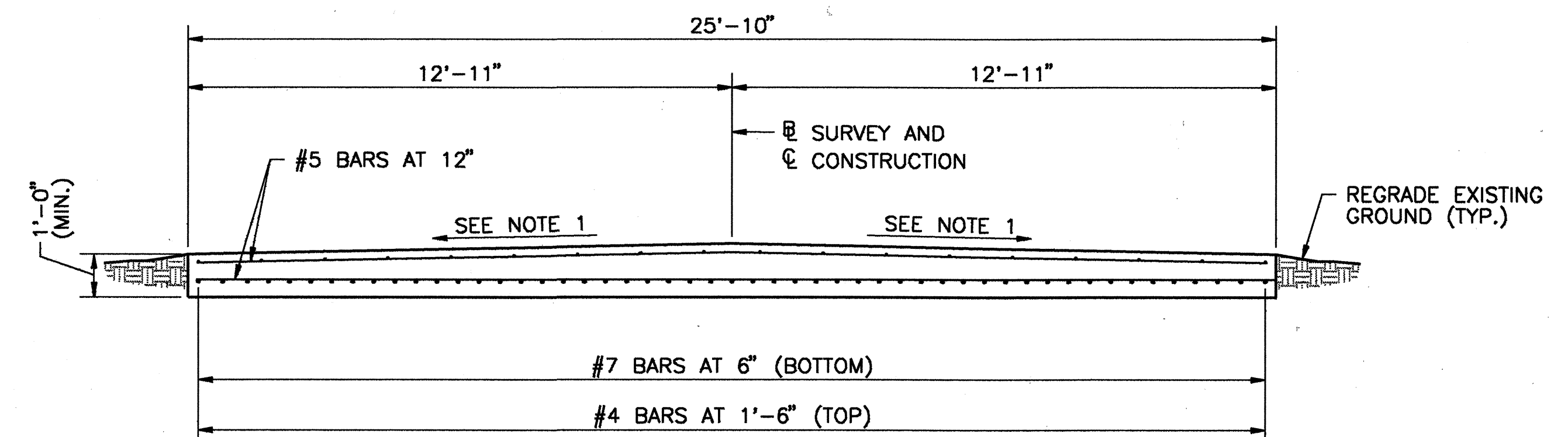
SHEET TITLE:	CONCRETE DECK REPLACEMENT AND JOINT DETAILS	SHEET
PROJECT NAME:	BECKETT BRIDGE REPAIRS	S-15



PLAN



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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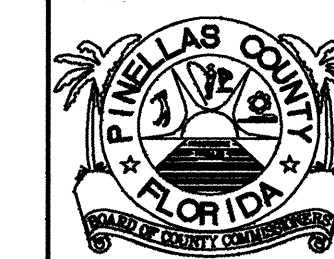
REVISIONS			REVISIONS		
Date	By	Description	Date	By	Description

SEAL:

Drawn by	Names	Date
TJL	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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SHEET TITLE:	APPROACH SLAB DETAILS	SHEET
PROJECT NAME:	BECKETT BRIDGE REPAIRS	S-16

Timothy J. Farrell

ELECTRICAL SYMBOLS AND ABBREVIATIONS

SYMBOL	DESCRIPTION	MOUNTING
	FENDER NAVIGATION LIGHT (RED)	FENDERS
	CLEARANCE GAUGE 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
	SINGLE POLE SWITCH - LETTER IF SHOWN INDICATES LIGHT CONTROLLED, 20A	℄ 48" AFF OR AS NOTED
	THREE-WAY SWITCH, 20A	℄ 48" AFF OR AS NOTED
	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
	TRANSFORMER	AS REQUIRED
	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
	MANUAL MOTOR STARTER	AS REQUIRED
	MAGNETIC MOTOR STARTER	AS REQUIRED
	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
	FRACTIONAL HORSEPOWER RATED TOGGLE SWITCH, WITH THERMAL ELEMENTS, # = POLES	AS REQUIRED
	MOTOR, CONNECTION, NUMERIAL = H.P. F = FRACTIONAL	AS REQUIRED
	TELEPHONE OUTLET WITH MIN. 3/4" CONDUIT TO TELEPHONE TERMINAL BOARD U.O.N.	℄ 18" AFF W = ℄ 48" AFF
	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
	ALARM BELL OR GONG	AS REQUIRED

SYMBOL	DESCRIPTION	MOUNTING
	CONTACTOR	AS REQUIRED
	PHOTO ELECTRIC CONTROL	CEILING MOUNTED
	RELAY	AS REQUIRED
	JUNCTION BOX	AS REQUIRED
	PULL BOX	AS REQUIRED
	DRIVEN GROUND, 3/4" x 10' COPPERWELD U.O.N.	
	CONDUIT, CONCEALED IN CEILING SPACE, WALL OR FLOOR	
	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	
	HOME RUN TO TELEPHONE TERMINAL CABINET	
	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
	TRANSIENT VOLTAGE SURGE SUPPRESSOR, GROUNDED	AS REQUIRED
	VOLTMETER SWITCH	AS REQUIRED
	AMMETER SWITCH	AS REQUIRED
	AMMETER	AS REQUIRED
	VOLTMETER	AS REQUIRED
	KILOWATT METER	AS REQUIRED
	WATT-HOUR METER	AS REQUIRED
	LIGHTNING ARRESTER	AS REQUIRED
	PUSH-BUTTON STATION OR SWITCH K = KEY OPERATED	AS REQUIRED
	POTENTIAL, CONTROL OR POWER TRANSFORMER	AS REQUIRED
	3/4"x10' LG. COPPERWELD GROUND ROD.	MOUNTED MINIMUM 18" BELOW GRADE
	CADWELD CONNECTION	
	AIR TERMINAL	AS REQUIRED
	GENERAL NOTE NO.	
	CONTACTOR OR CONTACT	
	MANUAL CONTROLLERS ON-OFF / START-STOP	
	LIMIT SWITCH	
	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

SCHEMATIC DIAGRAM SYMBOLS

TERMINALS		LIMIT SWITCH - LS		TEMPERATURE SWITCH OR THERMOSTAT - TS		HAND SWITCH - HS	
	MOTOR STARTER		NORMALLY CLOSED		NORMALLY OPEN		TOGGLE SWITCH
	CONTROL PANEL		NORMALLY CLOSED HELD OPEN		NORMALLY CLOSED		HAND-OFF-AUTO (LOCAL-OFF-REMOTE)
	CONTROL DESK		NORMALLY OPEN		NORMALLY CLOSED		PUSHBUTTON
	DRIVE SYSTEM PANEL		NORMALLY OPEN HELD CLOSED				NORMALLY OPEN
	GATE OPERATOR						NORMALLY CLOSED
	SPANLOCK OPERATOR						
	SUBMARINE CABLE (CABINET-CABLE-CABINET)						
	PANEL WIRING						
	FIELD WIRING						



PRESSURE OR VACUUM SWITCH - PS		TIME DELAY RELAY CONTACTS	
	NORMALLY OPEN CLOSING ON RISING PRESSURE		TIME DELAY CLOSE ON ENERGIZATION
	NORMALLY CLOSED OPENS ON RISING PRESSURE		TIME DELAY OPEN ON ENERGIZATION
			TIME DELAY CLOSE ON DEENERGIZATION
			TIME DELAY OPEN ON DEENERGIZATION

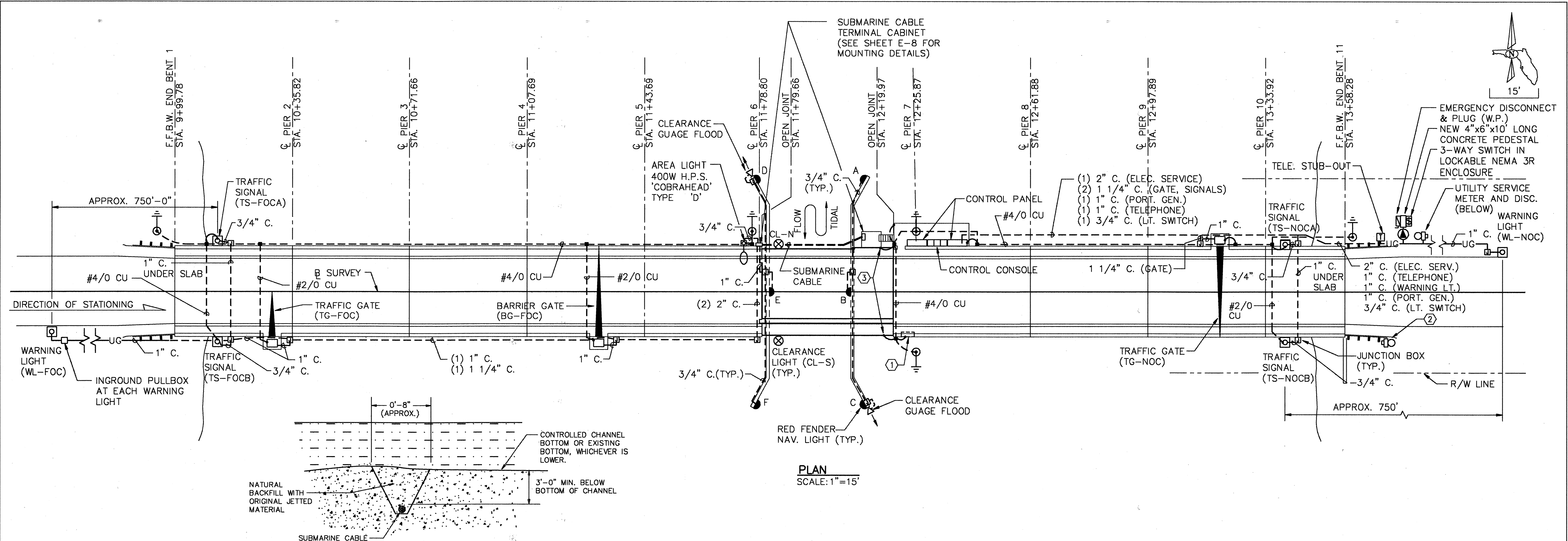
RELAY COIL	
	27 UNDERVOLTAGE CONTROL RELAY
	CR TIME DELAY RELAY
	M MOTOR CONTACTOR
	MF MOTOR FORWARD CONTACTOR
	MR MOTOR REVERSE CONTACTOR
	PE PHOTOELECTRIC RELAY

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

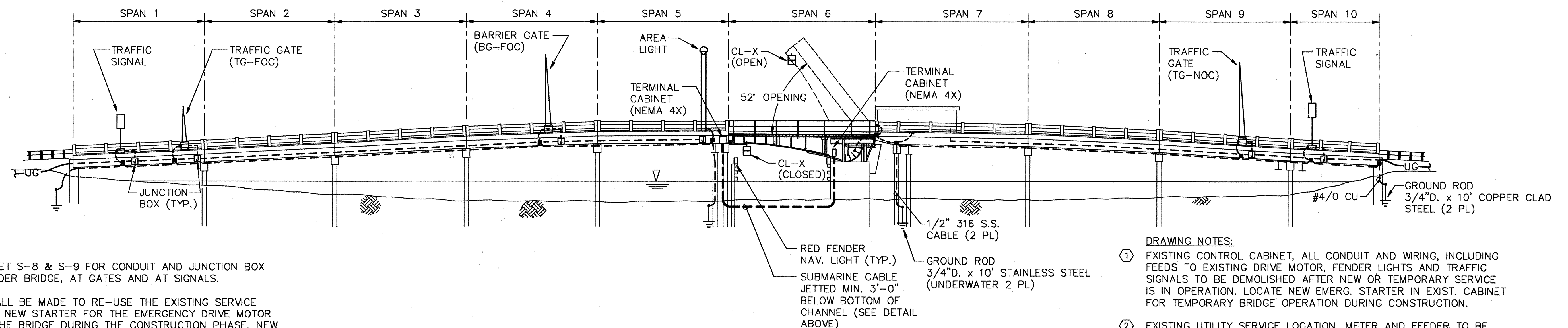
U.O.N.	- UNLESS OTHERWISE NOTED
UPS	- UNINTERRUPTIBLE POWER SUPPLY
VSD	- VARIABLE SPEED DRIVE
VERT	- VERTICAL
W/G	- PROTECTIVE WIRE GUARD
WHM	- WATT HOUR METER
WP	- WEATHER PROOF
XDCR	- TRANSDUCER
XFMR	- TRANSFORMER
3P	- 3 POLES
3W	- 3 WIRES
NOTES:	
1.	ALL SYMBOLS SHOWN ON DRAWINGS IN DASHED LINES OR 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			SEAL:	Names		Dates			DSA GROUP, INC. 2005 PAN AM CIRCLE TAMPA, FLORIDA 33607		PINELLAS COUNTY DEPARTMENT OF PUBLIC WORKS	SHEET TITLE:		SHEET	
Date	By	Description	Date	By	Description		Drawn by	5-95	Checked by	5-95					PROJECT NAME:	ELECTRICAL SYMBOLS AND ABBREVIATIONS	E-1	
							Designed by <td>GMM<td>5-95</td><td></td><td>BECKETT BRIDGE REPAIRS</td></td>	GMM <td>5-95</td> <td></td> <td>BECKETT BRIDGE REPAIRS</td>	5-95						BECKETT BRIDGE REPAIRS			
							Checked by <td>RMC<td>5-95</td><td></td><td></td><td></td><td></td></td>	RMC <td>5-95</td> <td></td> <td></td> <td></td> <td></td>	5-95									
							Approved by <td>G.M. MOSCINSKI</td> <td></td> <td></td> <td></td> <td></td> <td></td>	G.M. MOSCINSKI										



SUBMARINE CABLE INSTALLATION DETAIL
SCALE: NONE



NOTES:

- REFER TO SHEET S-8 & S-9 FOR CONDUIT AND JUNCTION BOX LOCATIONS UNDER BRIDGE, AT GATES AND AT SIGNALS.
- 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:

- 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.
- EXISTING UTILITY SERVICE LOCATION. METER AND FEEDER TO BE DEMOLISHED UPON COMPLETION OF NEW SERVICE, CONTROLS AND DRIVE MOTOR INSTALLATION.
- PROVIDE FLEXIBLE BOND AT TRUNNION. BOND ALL METAL HANDRAILS, CONTROL SHED AND PANELS.

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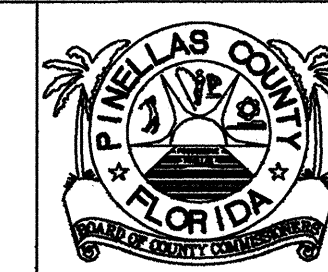
REVISIONS			REVISIONS		
Date	By	Description	Date	By	Description

SEAL:

Drawn by	Names	Dates



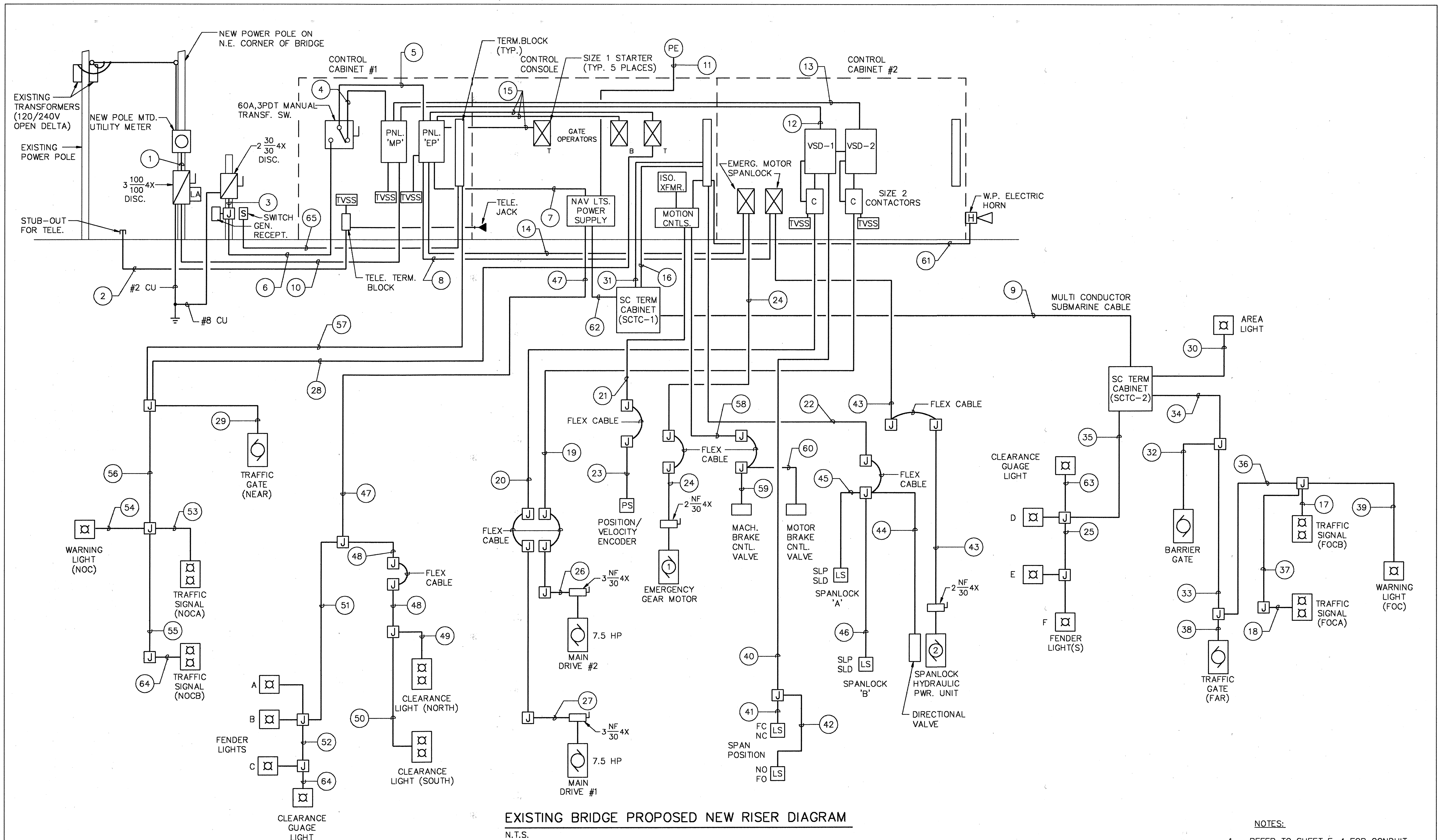
DSA GROUP, INC.
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607



**PINELLAS COUNTY
DEPARTMENT OF
PUBLIC WORKS**

SHEET TITLE:		SHEET E-2
ELECTRICAL SITE PLAN		
PROJECT NAME:		
BECKETT BRIDGE REPAIRS		

BRIDGE NO. 154000



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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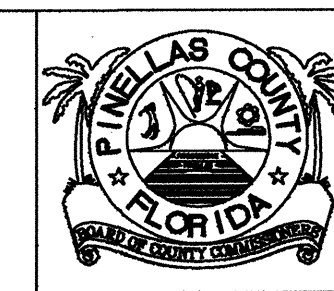
REVISIONS			REVISIONS		
Date	By	Description	Date	By	Description

SEAL:

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



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



PINELLAS COUNTY
DEPARTMENT OF
PUBLIC WORKS

SHEET TITLE:	RISER DIAGRAM	SHEET
PROJECT NAME:	BECKETT BRIDGE REPAIRS	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 GAUGE 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
46	3/4	JUNCTION BOX	LIMIT SWITCHES SPANLOCK 'B'	8	14	SLBP-1,2,3,4,SLBD-1,2,3,4
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 GAUGE LIGHT)	3	12	NAV-2,PE,N
				4	12	CONTROLS
				1	12	GND
52	3/4	FENDER LIGHT	CLEARANCE GAUGE 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 GAUGE LIGHT	3	10	PE,N
				2	12	CONTROLS
				1	12	GND
63	3/4	JUNCTION BOX	CLEARANCE GAUGE 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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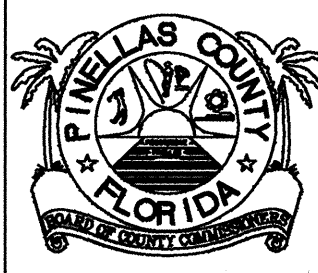
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Date	By	Description	Date	By	Description

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Approved by	G.M. MOSCINSKI	

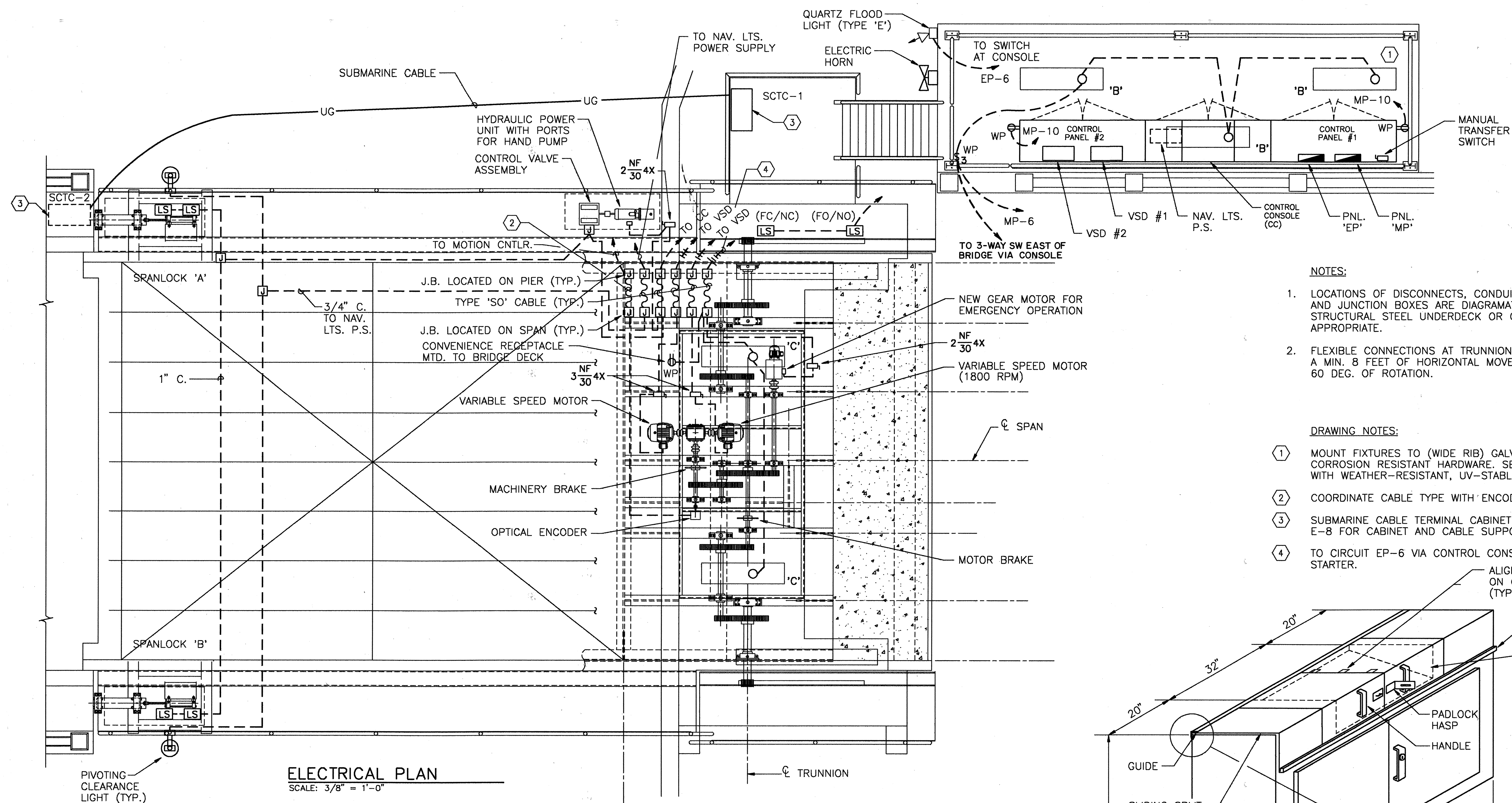


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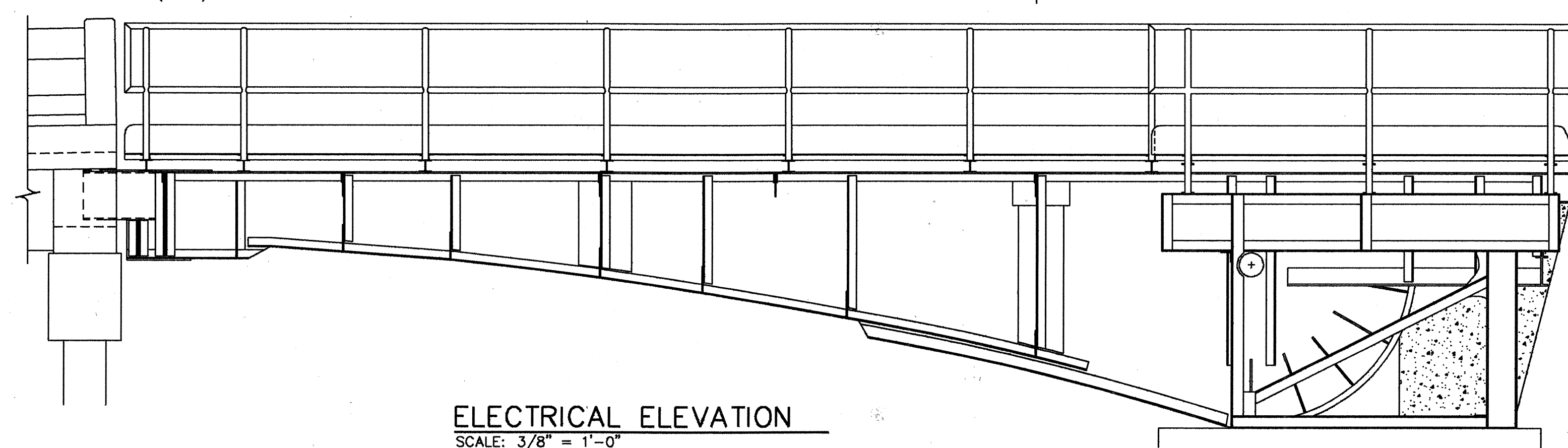


PINELLAS COUNTY
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SHEET TITLE:	SHEET
CONDUIT AND CABLE SCHEDULE	E-4
PROJECT NAME:	
BECKETT BRIDGE REPAIRS	



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



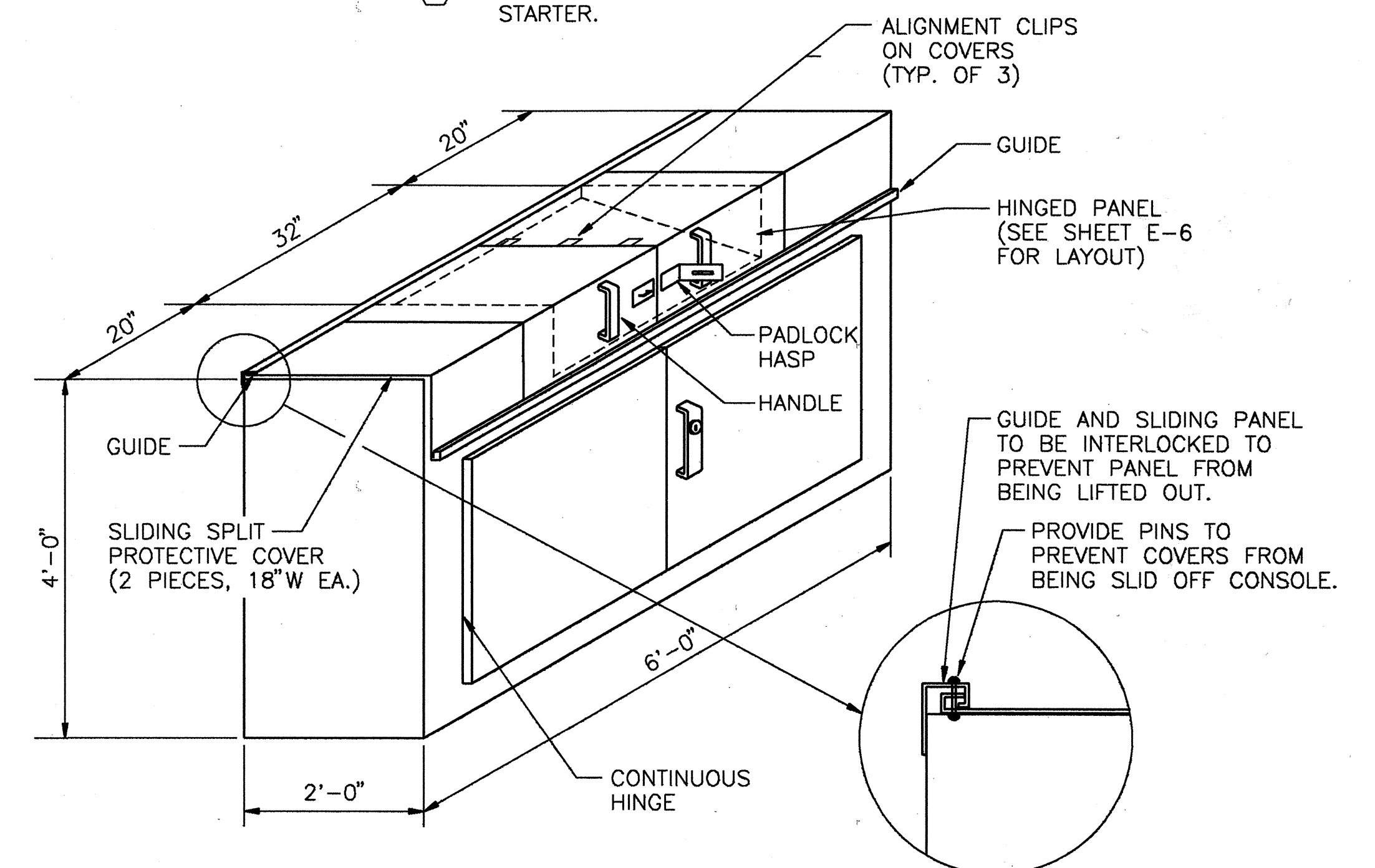
ELECTRICAL ELEVATION
SCALE: 3/8" = 1'-0"

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.

BY: GMM/ALC
DATE: 05/18/95 15:13:48 ALC PRODUCED BY DSA CADD SYSTEM

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Date	By

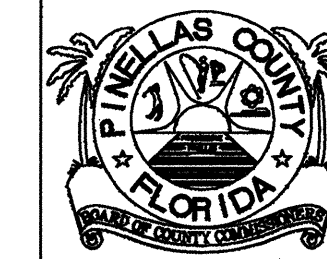
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Date	By

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AEV	GMM	GMM	RMC	G.M. MOSCINSKI
5-95	5-95	5-95	5-95	

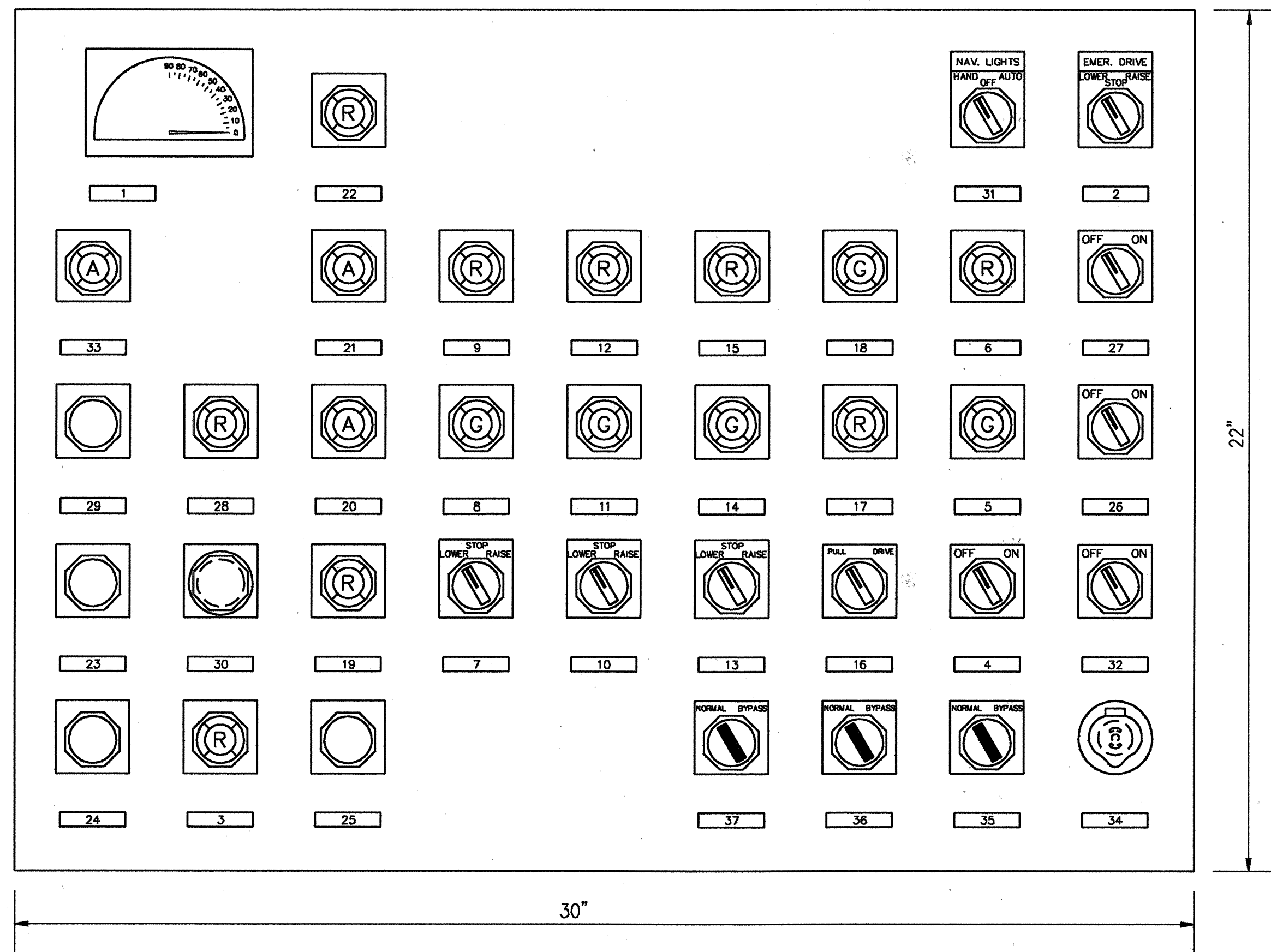


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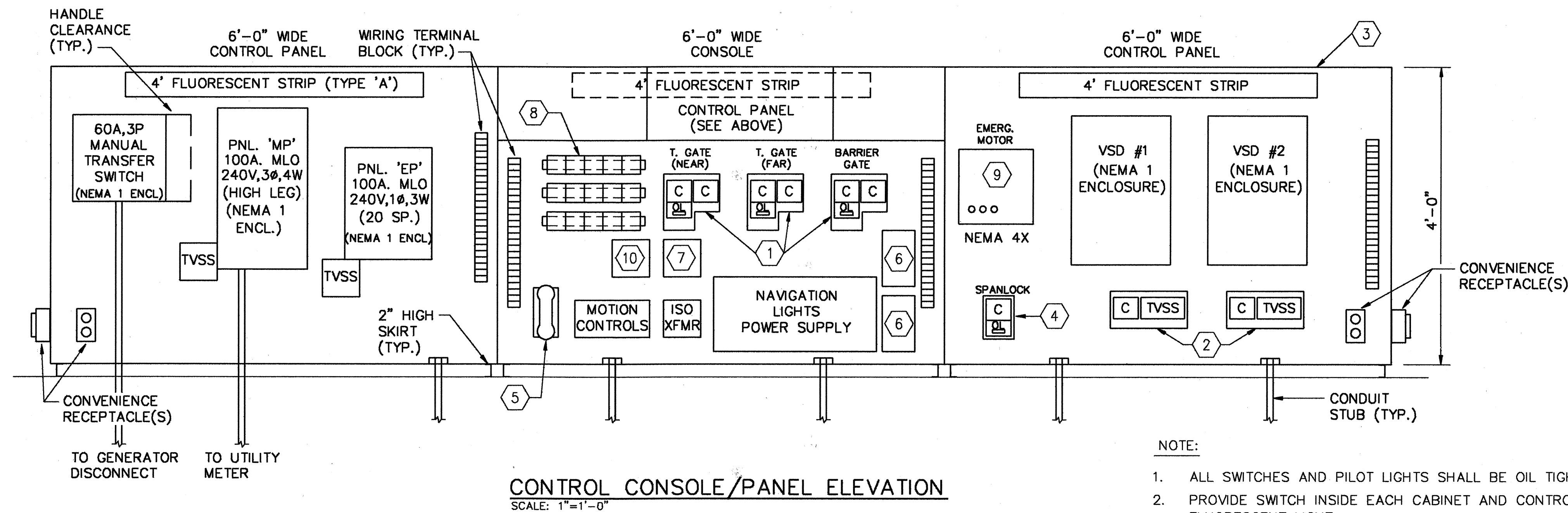
PINELLAS COUNTY
DEPARTMENT OF
PUBLIC WORKS

SHEET TITLE:	SPAN ELECTRICAL PLAN
PROJECT NAME:	BECKETT BRIDGE REPAIRS
SHEET	E-5



CONTROL PANEL NAMEPLATE
SCALE: 3/8"=1"

- DRAWING NOTES:**
- SIZE 1 REVERSING STARTER IN OPEN FRAME, HORIZONTAL MOUNT. SQUARE 'D' #8736 OR APPROVED EQUAL.
 - SIZE 2 CONTACTOR IN OPEN FRAME, HORIZONTAL MOUNT. SQUARE 'D' #8736 OR APPROVED EQUAL, WITH TRANSIENT VOLTAGE SURGE SUPPRESSOR ON LOAD SIDE OF CONTACTOR.
 - STAINLESS STEEL CABINET, WELDED CONSTRUCTION, GASKETED DOUBLE DOORS. CONTINUOUS HINGE PINS AND LOCKING LATCH HANDLES.
 - SIZE 0 FULL VOLTAGE STARTER IN OPEN FRAME, VERTICAL MOUNT. SQUARE 'D' #8536 OR APPROVED EQUAL.
 - 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.
 - LOW VOLTAGE TVSS DEVICE, 10-PAIR UNIT EQUAL TO APT TE/DA20B-XX. SUITABLE FOR 24V DC SIGNALS.
 - POWER SUPPLY FOR MOTION CONTROLLER.
 - RAIL MOUNTED CONTROL RELAYS.
 - SIZE 1 STARTER FOR EMERGENCY DRIVE MOTOR. RELOCATED FROM SOUTH SIDE OF BRIDGE (SEE SITE PLAN).
 - 24 VOLT, 400W POWER SUPPLY FOR EMERGENCY DRIVE CLUTCH.



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

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

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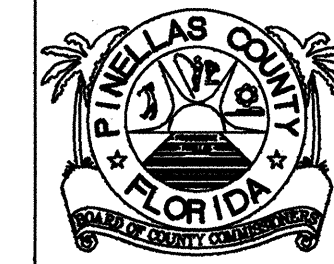
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Drawn by	Names	Dates



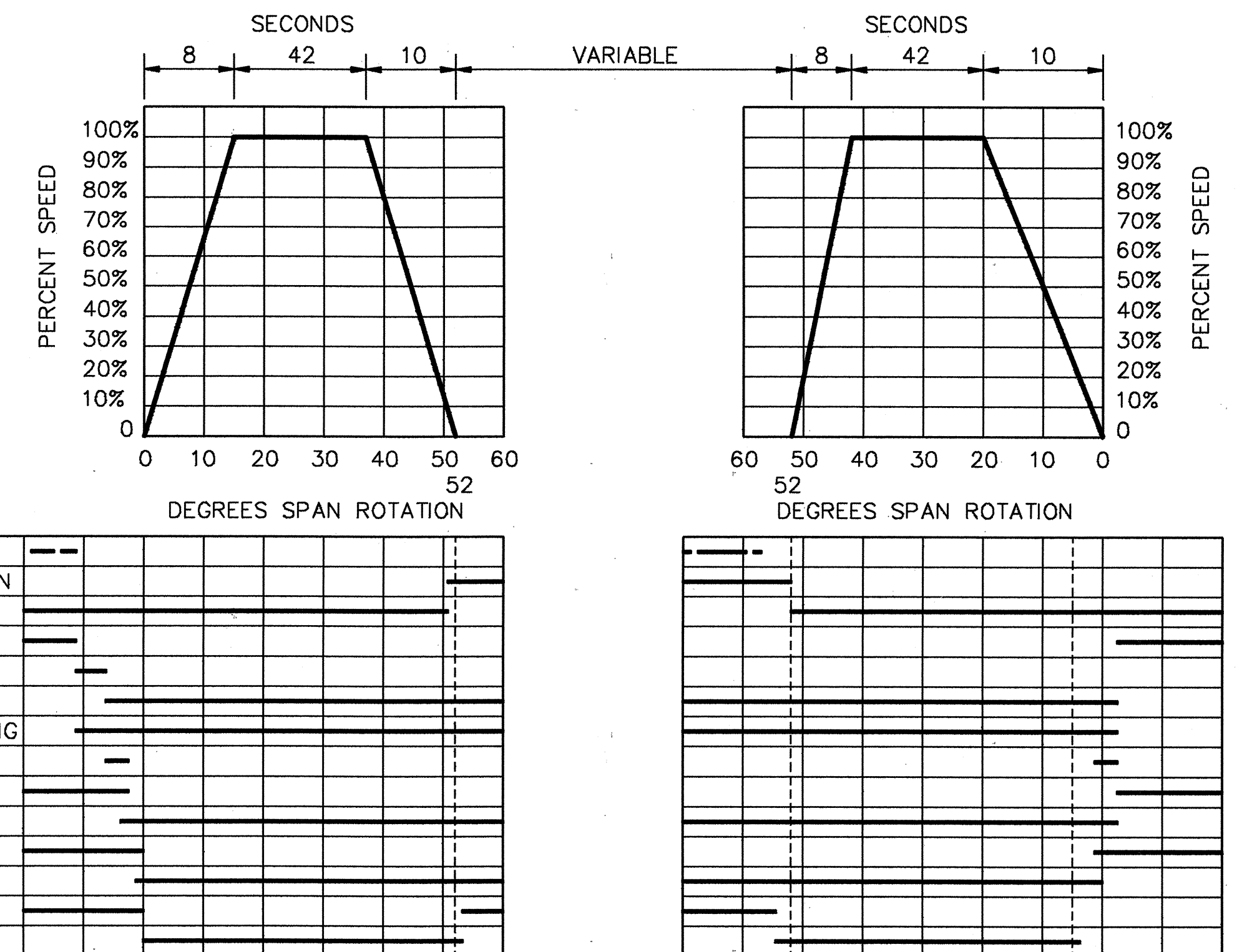
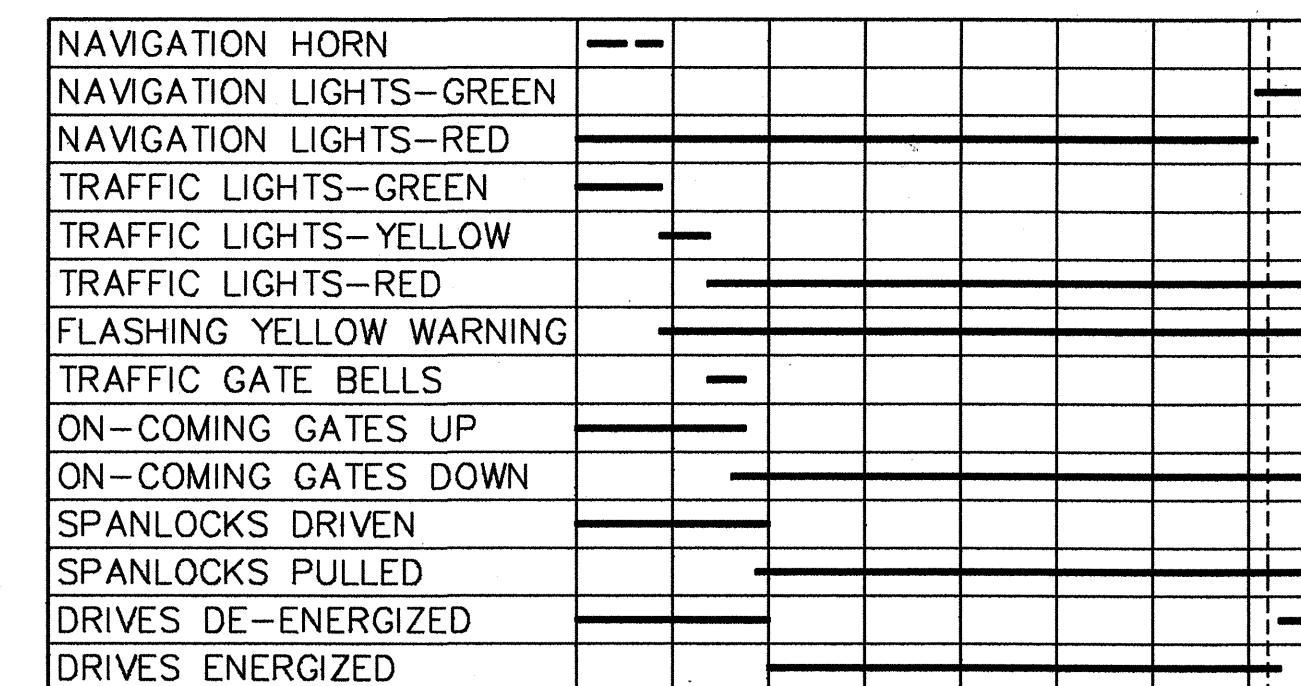
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TAMPA, FLORIDA 33607



PINELLAS COUNTY
DEPARTMENT OF
PUBLIC WORKS

SHEET TITLE:	CONTROL PANEL DETAILS & NOTES
PROJECT NAME:	BECKETT BRIDGE REPAIRS

SHEET
E-6



SEQUENCE TIME DIAGRAM
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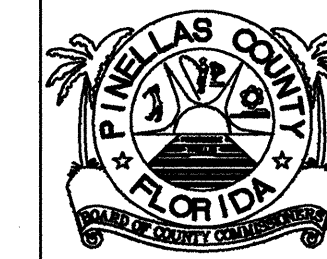
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Gen. M. G. G. G.

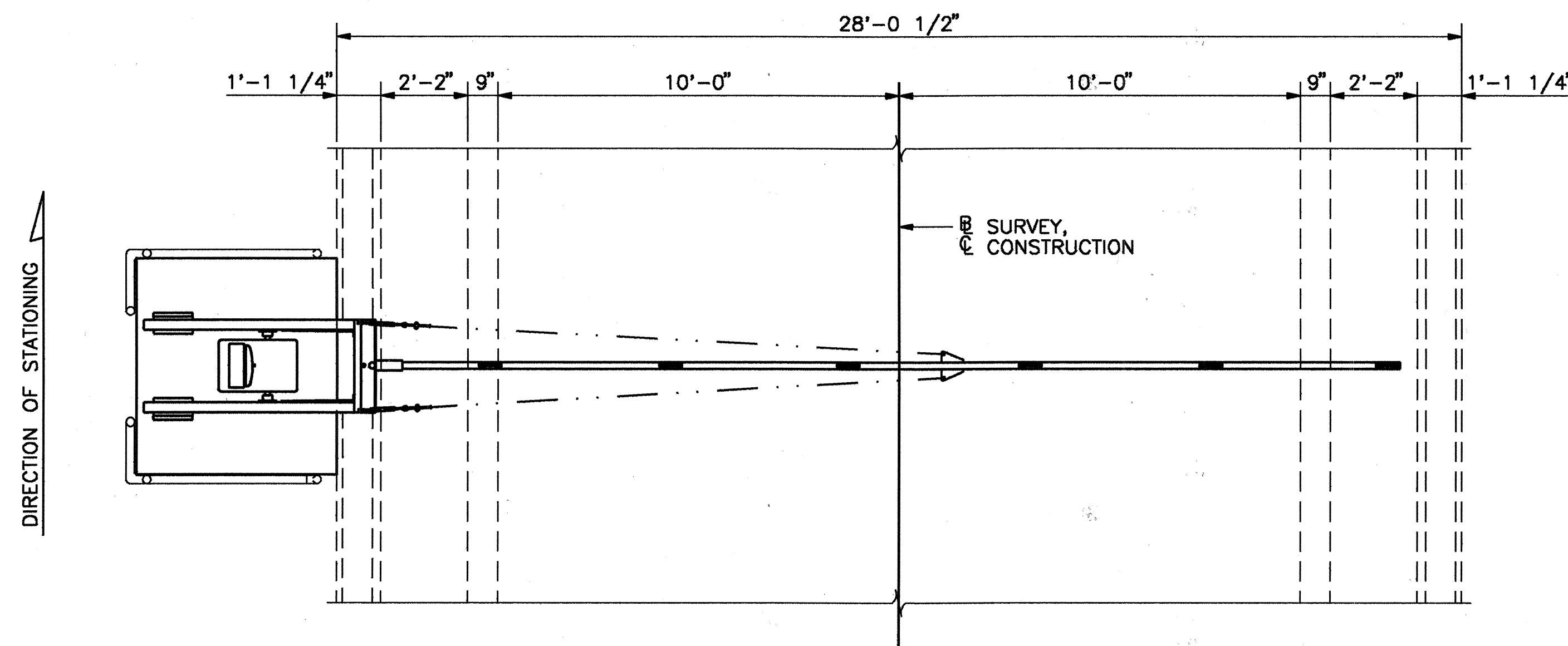


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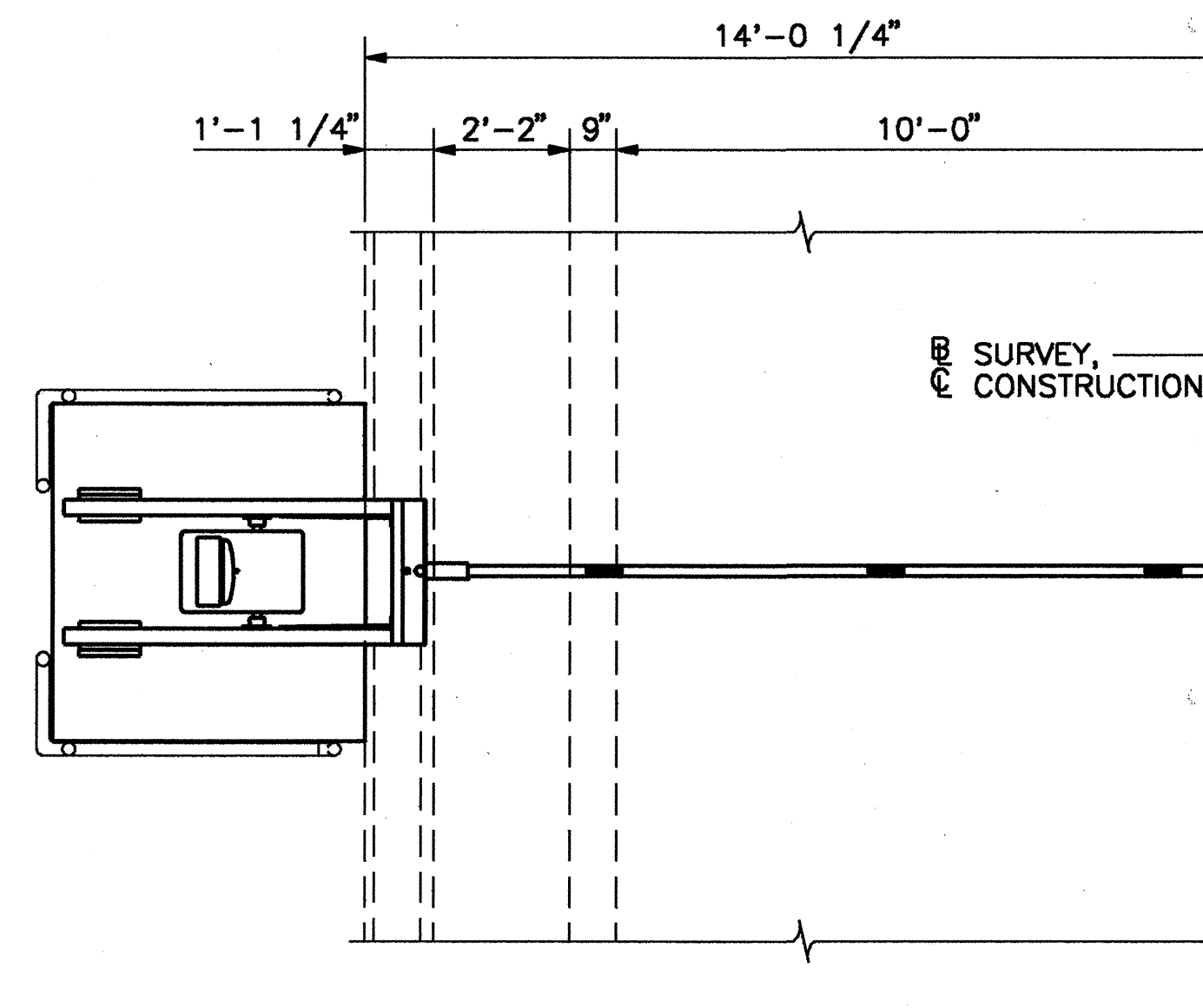


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DEPARTMENT OF
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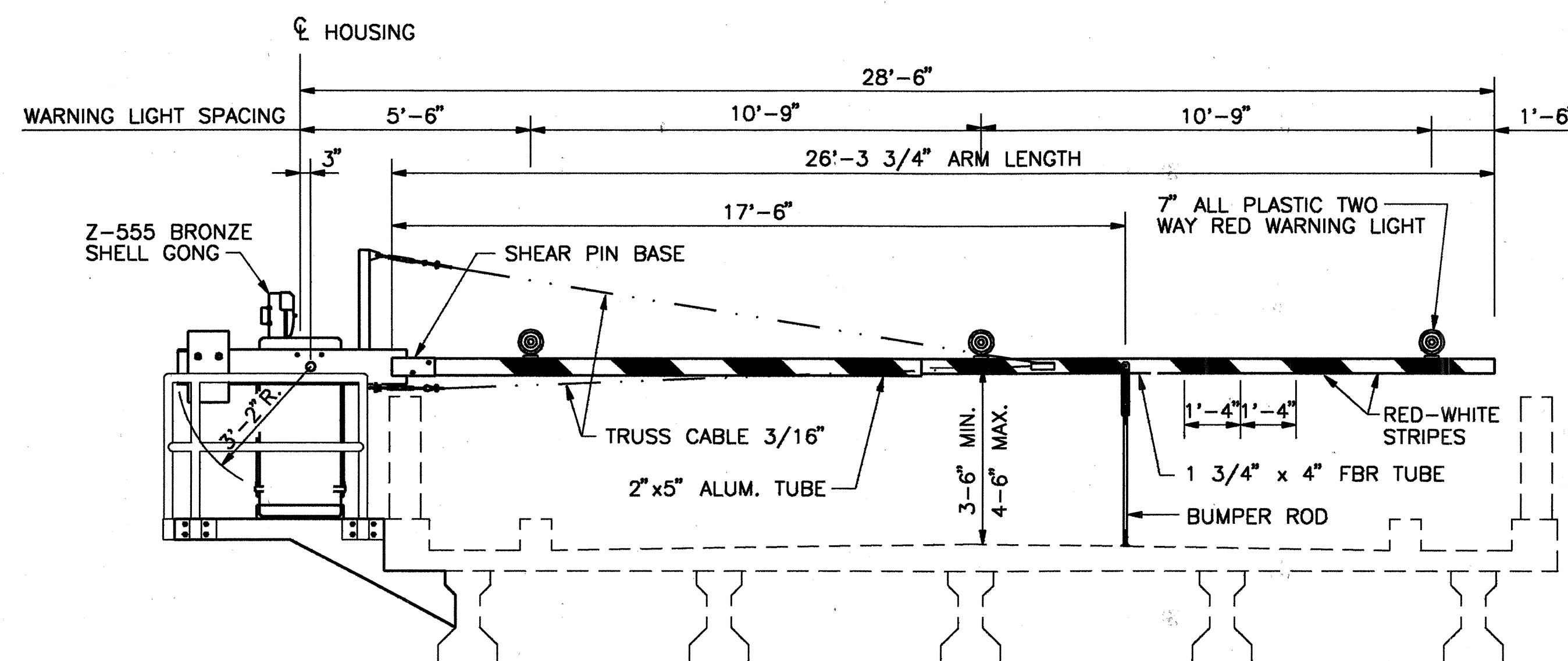
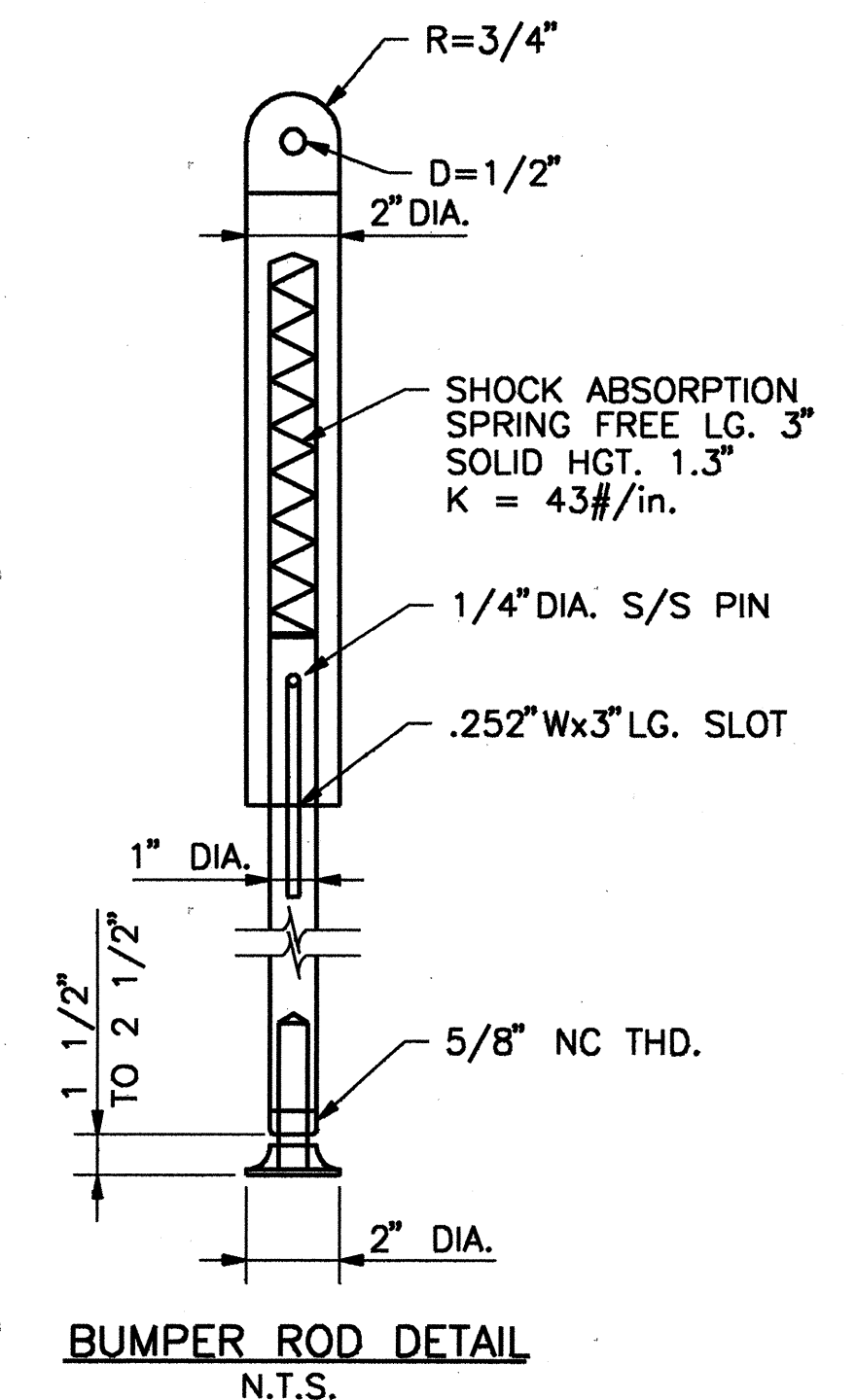
SHEET TITLE:	ELECTRICAL DETAILS	SHEET E-8
PROJECT NAME:	BECKETT BRIDGE REPAIRS	



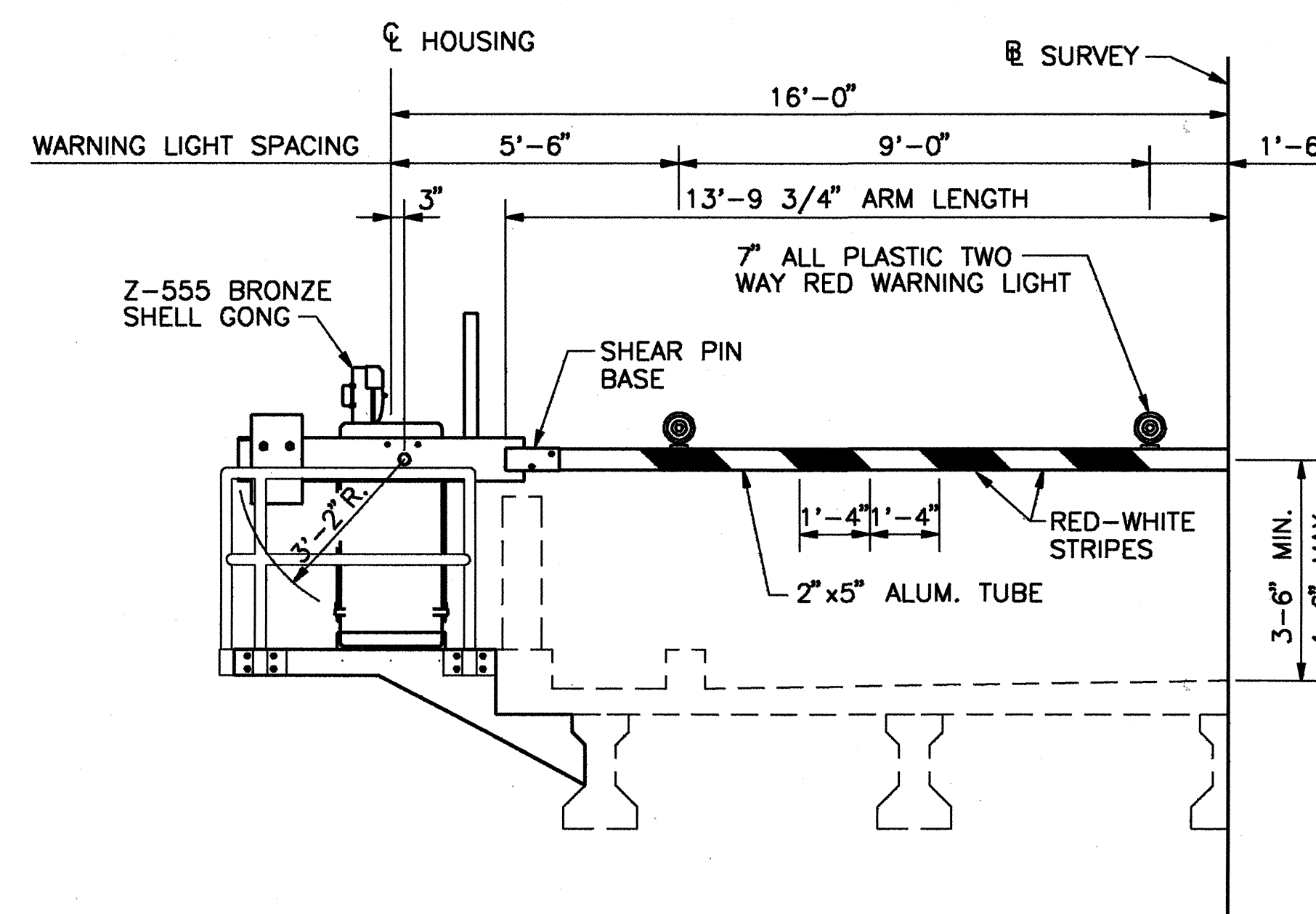
PLAN



PLAN



ELEVATION



ELEVATION

- NOTES:
- 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.
 - GATE ARM CONNECTIONS AT SIDEWALK SHALL BE STRUCTURAL STEEL ASTM A588, HOT DIPPED GALVANIZED, FASTENERS SHALL BE ASTM A325 UNLESS OTHERWISE NOTED.
 - STAINLESS STEEL FASTENERS SHALL BE ASTM A240, TYPE 316 AND ASTM A320 GRADE B8, STRAIN HARDENED.
 - TURN BUCKLES AND WIRE ROPE HARDWARE SHALL BE STEEL HOT DIP GALVANIZED.
 - GUY CABLE SHALL BE PREFORMED 7x19 STAINLESS STEEL 18-8, .312 DIA. MINIMUM BREAKING STRENGTH 9,000 LBS. FITTINGS SHALL BE STAINLESS STEEL.
 - ENERGY ABSORPTION CABLES SHALL BE 3/8" DIA. 7x19 ANNEALED AUSTENITIC STAINLESS STEEL WIRE ROPE WITH STAINLESS STEEL MALE THREADED ROD ENDS.
 - GATE HOUSING, SIDE ARM TUBES, CABLE ANCHORAGE AND ALL EXPOSED STEEL PARTS EXCEPT FASTENERS SHALL BE HOT DIPPED GALVANIZED. STEEL FASTENERS SHALL BE CAD PLATED.
 - JACK BOLTS SHALL BE HI-TEN STEEL UNF .750-16 THD. WITH CASE HARDENED TIP, CAD PLATED.
 - ARM REST BUMPER SHALL BE ALUMINUM, 6061-T6 WITH STAINLESS STEEL PIVOT PIN.
 - 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.
 - GONG SHALL BE 12" BRONZE SHELL.
 - 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

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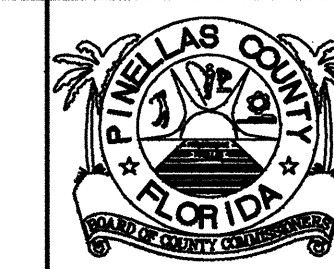
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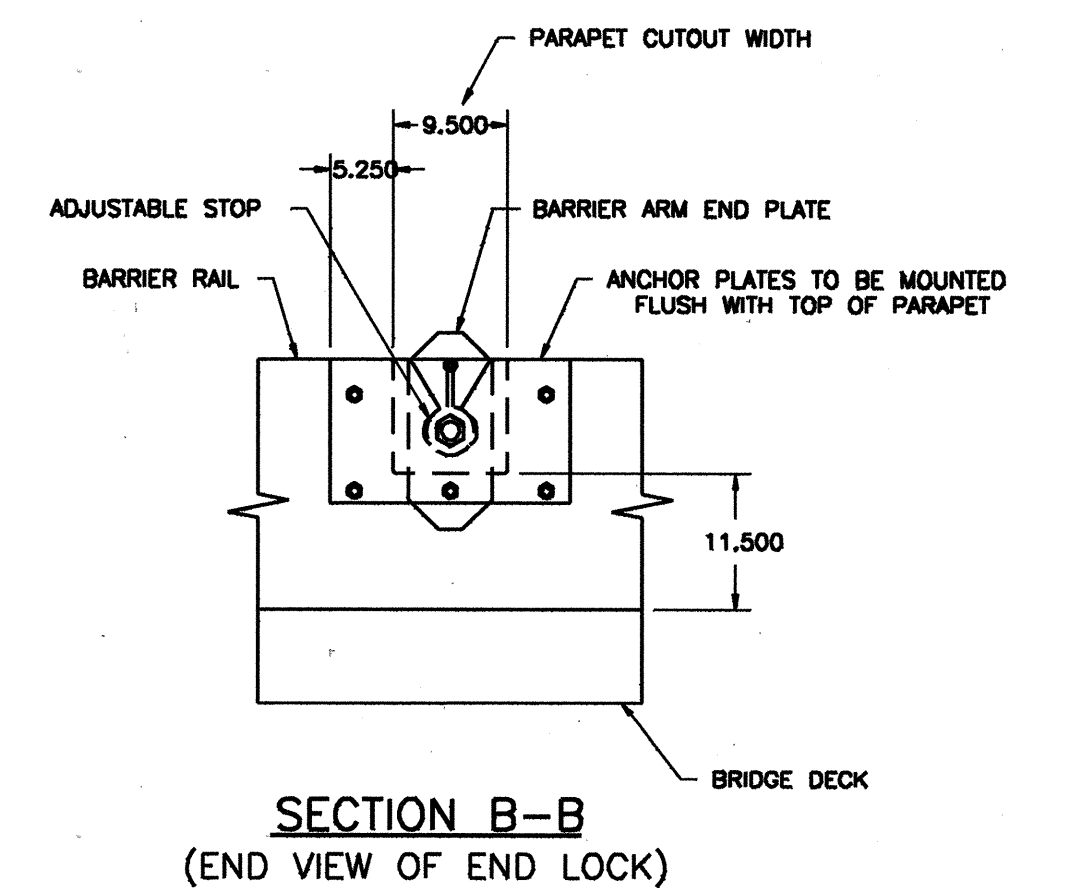
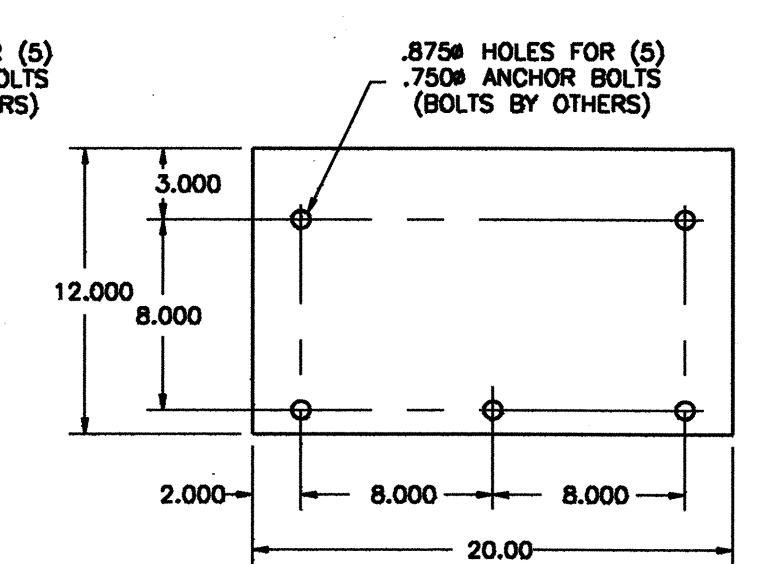
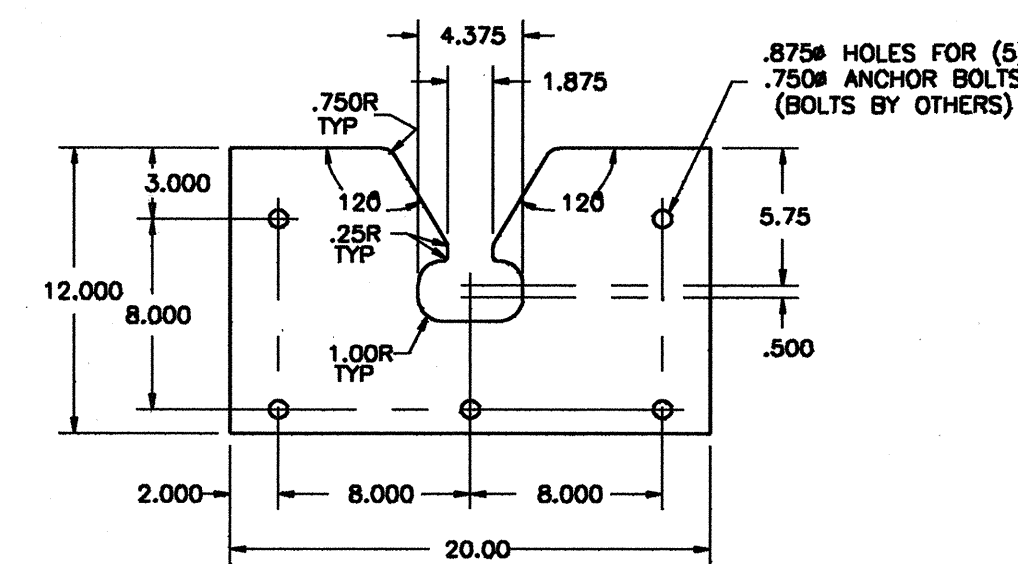
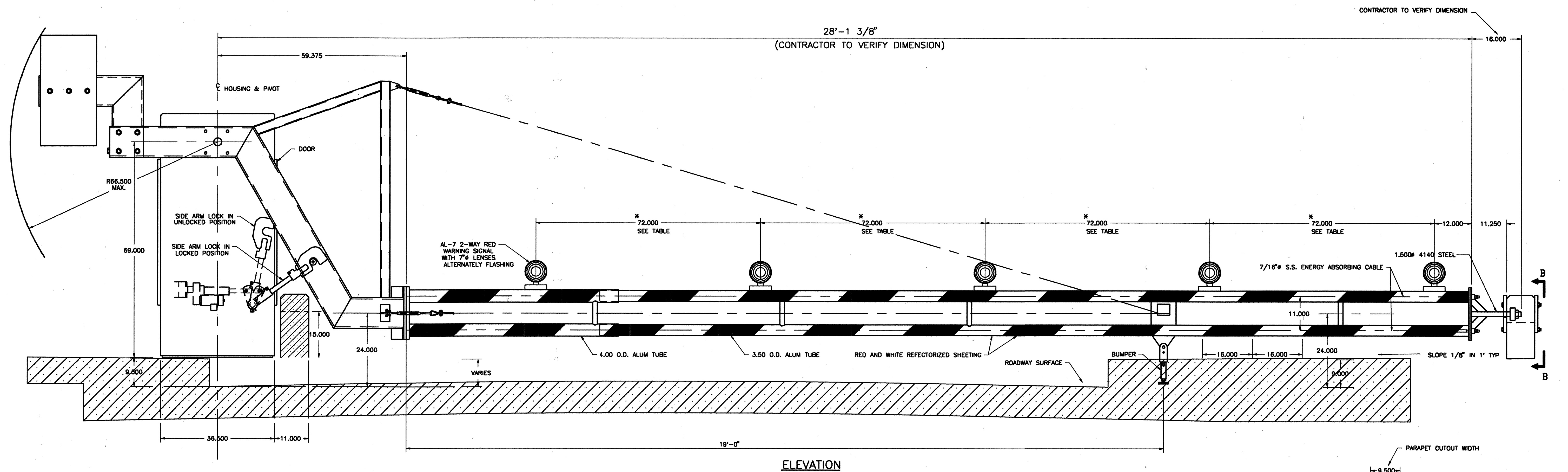
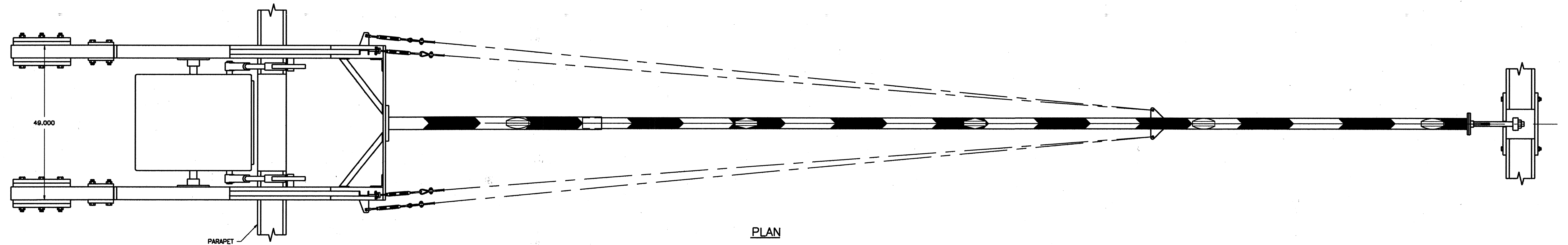


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PINELLAS COUNTY
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SHEET TITLE:	TRAFFIC GATE DETAILS	E-9
PROJECT NAME:	BECKETT BRIDGE REPAIRS	



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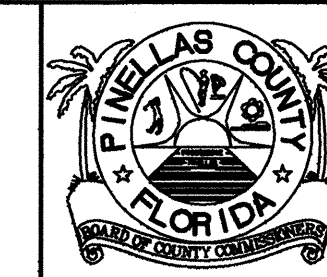
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PINELLAS COUNTY
DEPARTMENT OF
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SHEET TITLE:	BARRIER GATE DETAILS
PROJECT NAME:	BECKETT BRIDGE REPAIRS

SHEET

E-10

Handwritten signature: David M. Gromm

ACCESS HATCH (TYP)

LUBE STATION
FOR LOCK BARS
AND GUIDES
DETAIL NO. 2, 5 & 6 (M-5)

SEE SHEET M-3
FOR LARGE SCALE PLAN
OF SPAN LOCK ASSEMBLY
AND SHEET M-4 FOR COMPONENT DETAILS

FLEX CONNECTORS

HYDRAULIC POWER
UNIT WITH PORTS
FOR HAND PUMP

LUBE STATION FOR
GEAR TRAIN. SEE
DETAIL ON SHEET M-5
(DETAIL NO. 6)

SEE SHEET M-2 FOR LARGE SCALE
PLAN OF MACHINERY BAY

TO MOTOR AND
MACHINERY BRAKES

S.S. PIPE TO
EACH BEARING

MOTORS (VARIABLE SPEED)
AND GEAR BOX

MACHINE BRAKES

10" BEAMS (TYP)

OPTICAL ENCODER

EMERGENCY DRIVE
SYSTEM

7'-10 1/2"

2'-0 1/2"

3'-2 3/4"

3'-3 3/4"

3'-6 1/4"

3'-2 1/2"

2'-10 3/8"

19'-0"

S.S. PIPE

FLEX CONNECTOR

LOCK BAR RECEIVER

LOCK BAR GUIDE

LOCK BAR AND HYDRAULIC
CYLINDER (PROVIDE WEATHER
COVER)

Ø 43" GIRDER

Ø PIVOT POINT

5'-11"

4'-1"

10'-0"

FACE OF COUNTERWEIGHT

NEW GEARS, GEAR BOX(S), SHAFTS, AND BEARINGS
(UNLESS OTHERWISE NOTED, GEARS AND BEARINGS
SHALL BE BROWNING STOCK SIZE, "SHAFT READY"
OR APPROVED EQUAL)

MACHINERY PLAN

LIVE LOAD SHOES AND PLATES.
SEE SECTION 462 OF THE
TECHNICAL SPECIAL PROVISIONS

SEE DETAIL ON
SHEET M-4

ELEVATION

SOUTH RACK

RACK SUPPORT

HINGED AND LATCHED DOOR

16 GA 304 SS WEATHER COVER

P55

REHABILITATE CURVED TRACK ASSEMBLY IN
ACCORDANCE WITH SUB ARTICLE 465-6.4
OF TECHNICAL SPECIAL PROVISIONS

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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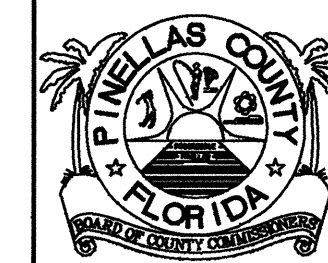
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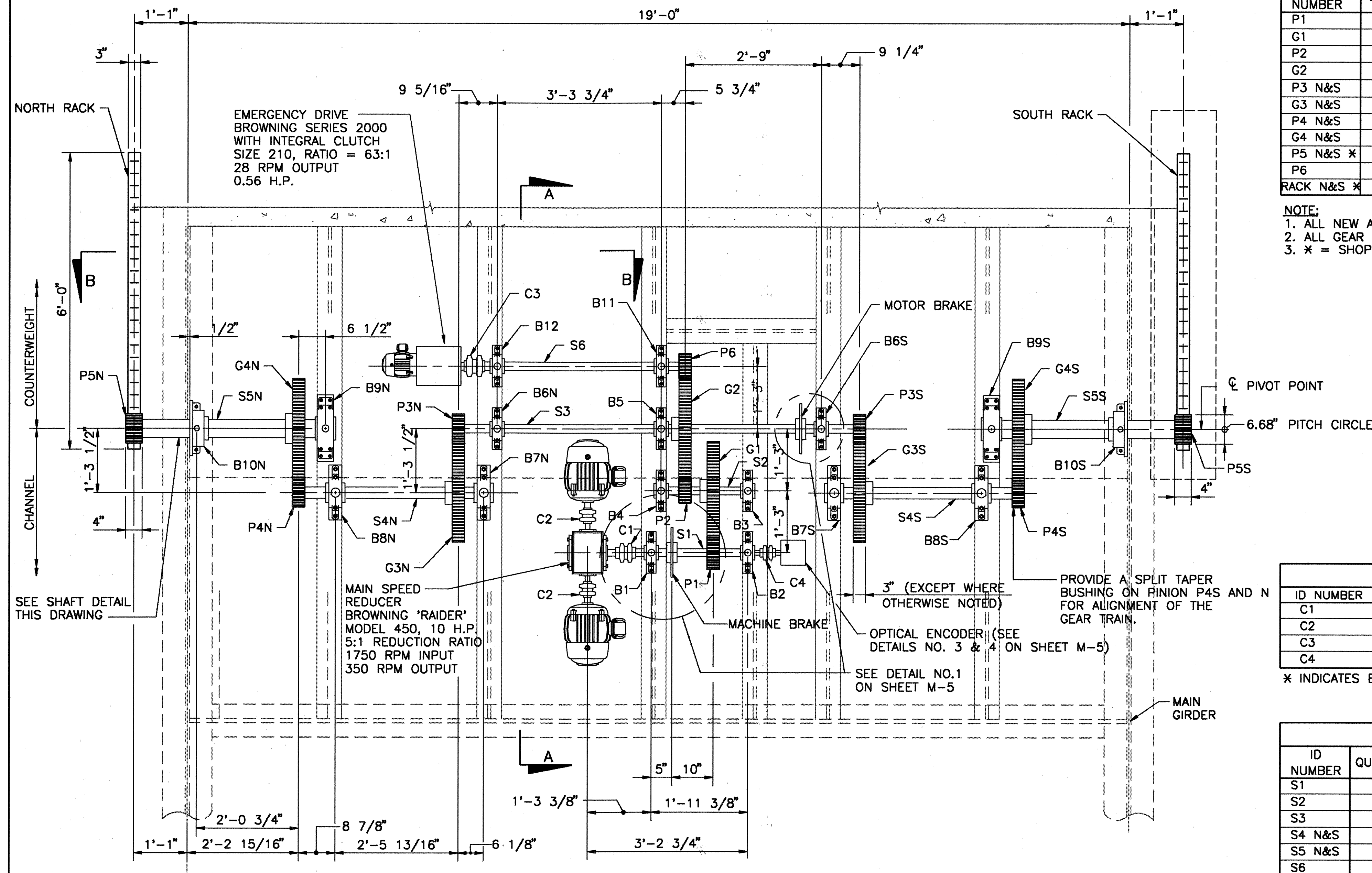


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PINELLAS COUNTY
DEPARTMENT OF
PUBLIC WORKS

SHEET TITLE:	SHEET
MACHINERY PLAN	M-1
PROJECT NAME:	BECKETT BRIDGE REPAIRS



PLAN OF MACHINERY BAY

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

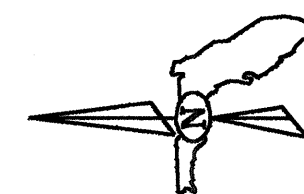


TABLE OF GEARS										
ID NUMBER	QUANTITY	NUMBER OF TEETH	DP	WIDTH	TORQUE (# INCH)	RPM (OLD)	RPM (NEW)	BORE	PART NUMBER	KEY SEAT
P1	1	18	3	3"	228	417	350	1.875"	NSS318	1/2" x 1/4"
G1	1	72	3	3"	NA	143.7	87.5	1.875"	NCS372	1/2" x 1/4"
P2	1	18	3	3"	455	143.7	87.5	1.875"	NSS318A	1/2" x 1/4"
G2	1	72	3	3"	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"	NCS372	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"	NCS372	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:**
- ALL NEW AND EXISTING GEARS ARE 14.5° PA. EXCEPT P5 N&S AND RACK N&S WHICH ARE 20° PA.
 - ALL GEAR PART NUMBERS ARE BROWNING.
 - * = SHOP MACHINED

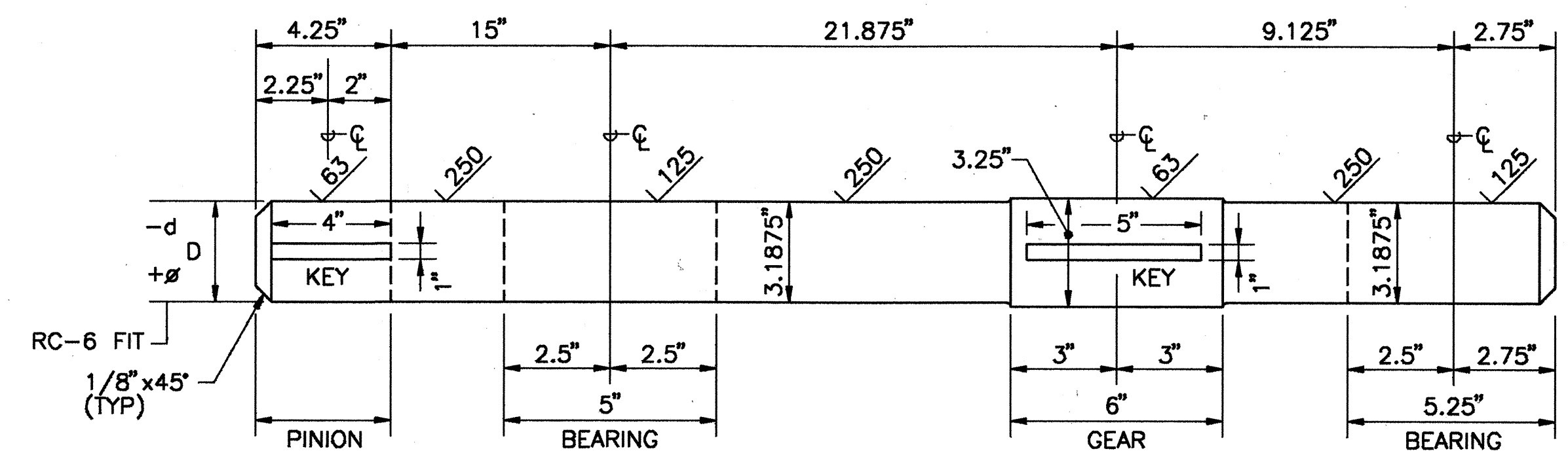
TABLE OF BEARINGS				
ID NUMBER	QUANTITY	RPM	BORE(D)	PART NUMBER
B1	1	350	1.875"	PB970, TYPE SR
B2	1	350	1.875"	PB970, TYPE SR
B3	1	87.5	1.875"	PB970, TYPE SR
B4	1	87.5	1.875"	PB970, TYPE SR
B5	1	21.9	1.875"	PB970, TYPE SR
B6 N&S	2	21.9	2"	PB970, TYPE SR
B7 N&S	2	6.4	2.75"	PB970, TYPE SR
B8 N&S	2	6.4	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:**
- RC 6 FIT ($D + \frac{d}{100}$)

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-08X

* 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" x 1/4" x 3 1/2"	1/2" x 1/4" x 4"	1/2" x 1/4" x 2 1/2"	
S2	1	26"	1.875"	1/2" x 1/4" x 3 1/2"			
S3	1	103.5"	2"	1/2" x 1/4" x 3 1/2"	1/2" x 1/4" x 3 1/2"	1/2" x 1/4" x 3 1/2"	
S4 N&S	2	53"	2.75"	5/8" x 5/16" x 5 1/2"			
S5 N&S	2	53"	3.25"	1" x 1/2" x 5"	1" x 1/2" x 4"		
S6	1	53"	2"	1/2" x 1/4" x 3 1/2"	1/2" x 1/4" x 2"		



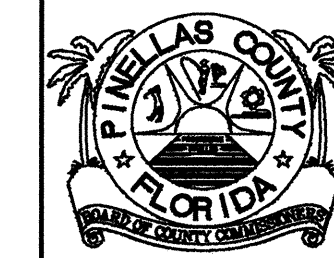
R:\94069\CADD\MECH
C:\WORK\BMECH2 06/19/95 08:29:26 AVE PRODUCED BY DSA CADD SYSTEM

REVISIONS			REVISIONS		
Date	By	Description	Date	By	Description

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



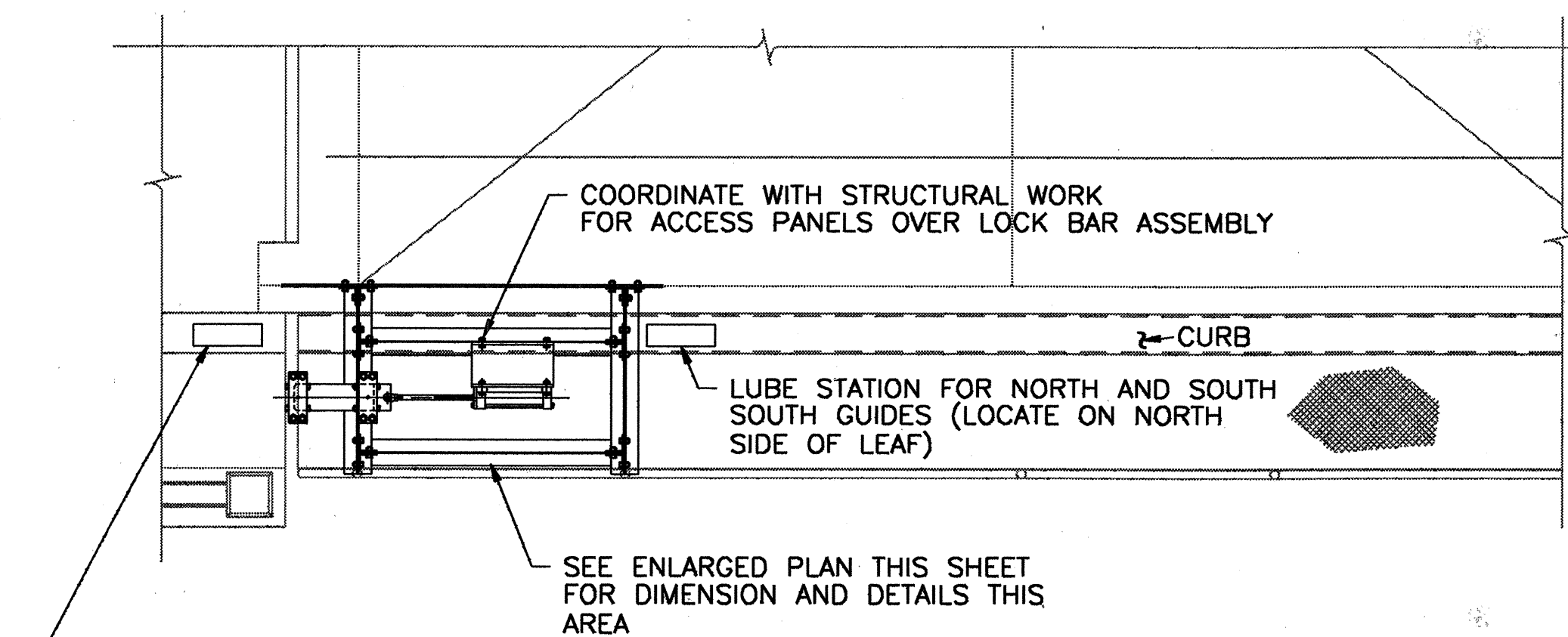
DSA GROUP, INC.
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607



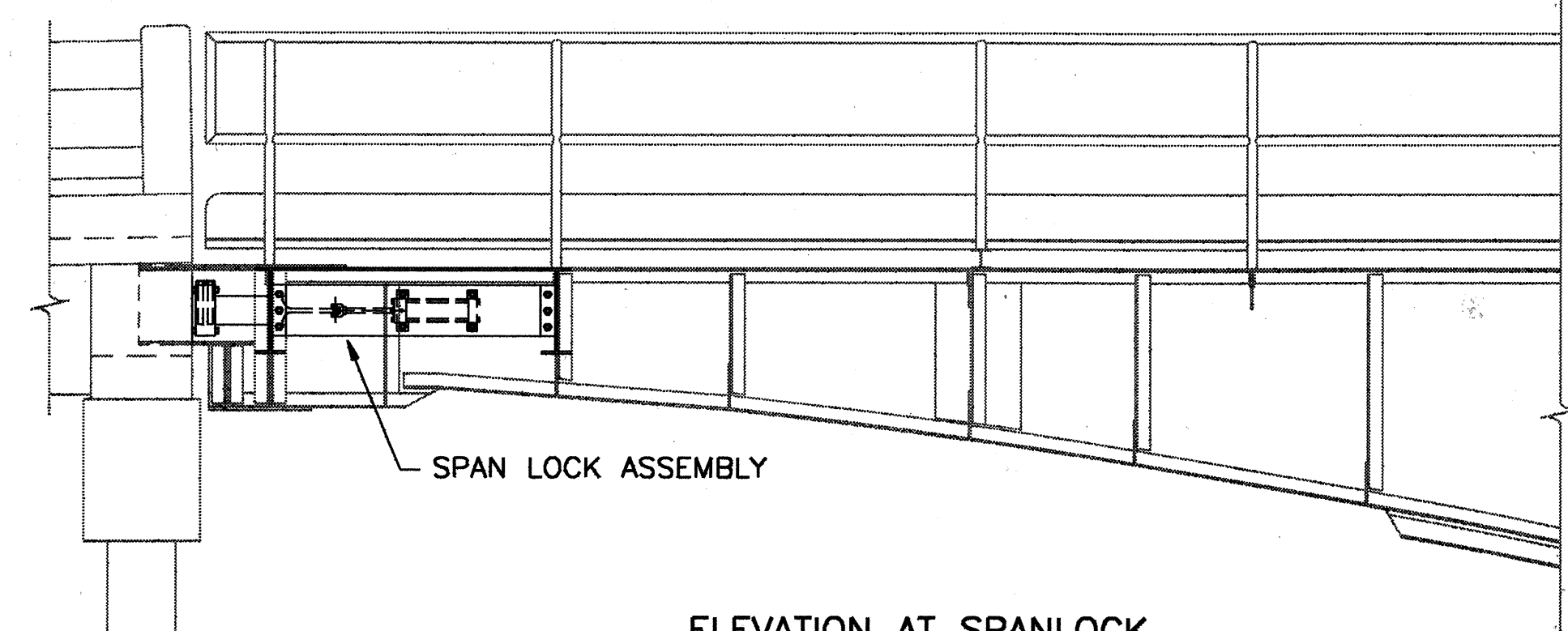
PINELLAS COUNTY
DEPARTMENT OF
PUBLIC WORKS

SHEET TITLE:	MACHINERY PLAN AND SCHEDULES
PROJECT NAME:	BECKETT BRIDGE REPAIRS

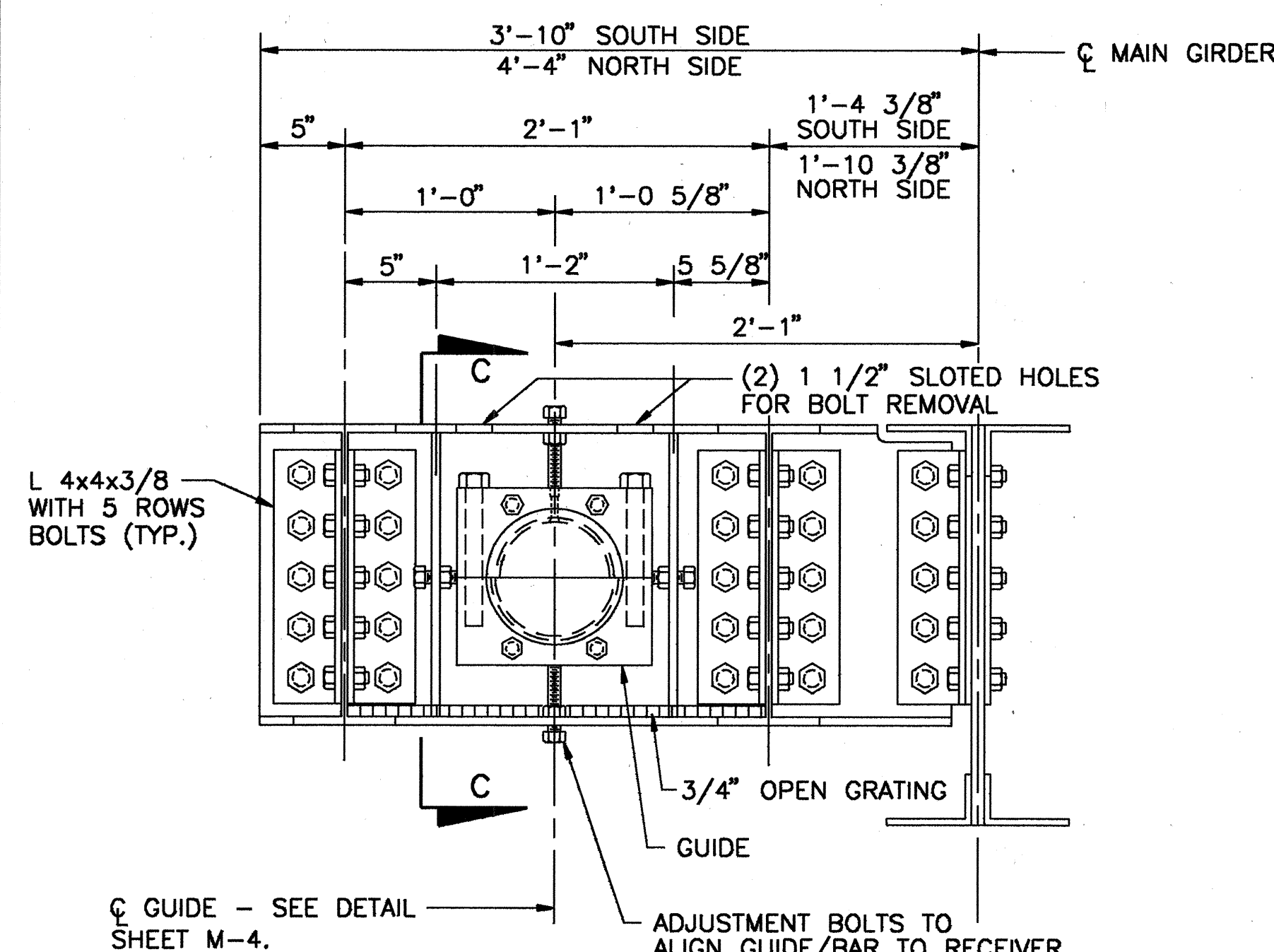
SHEET
M-2



PLAN AT SPANLOCK



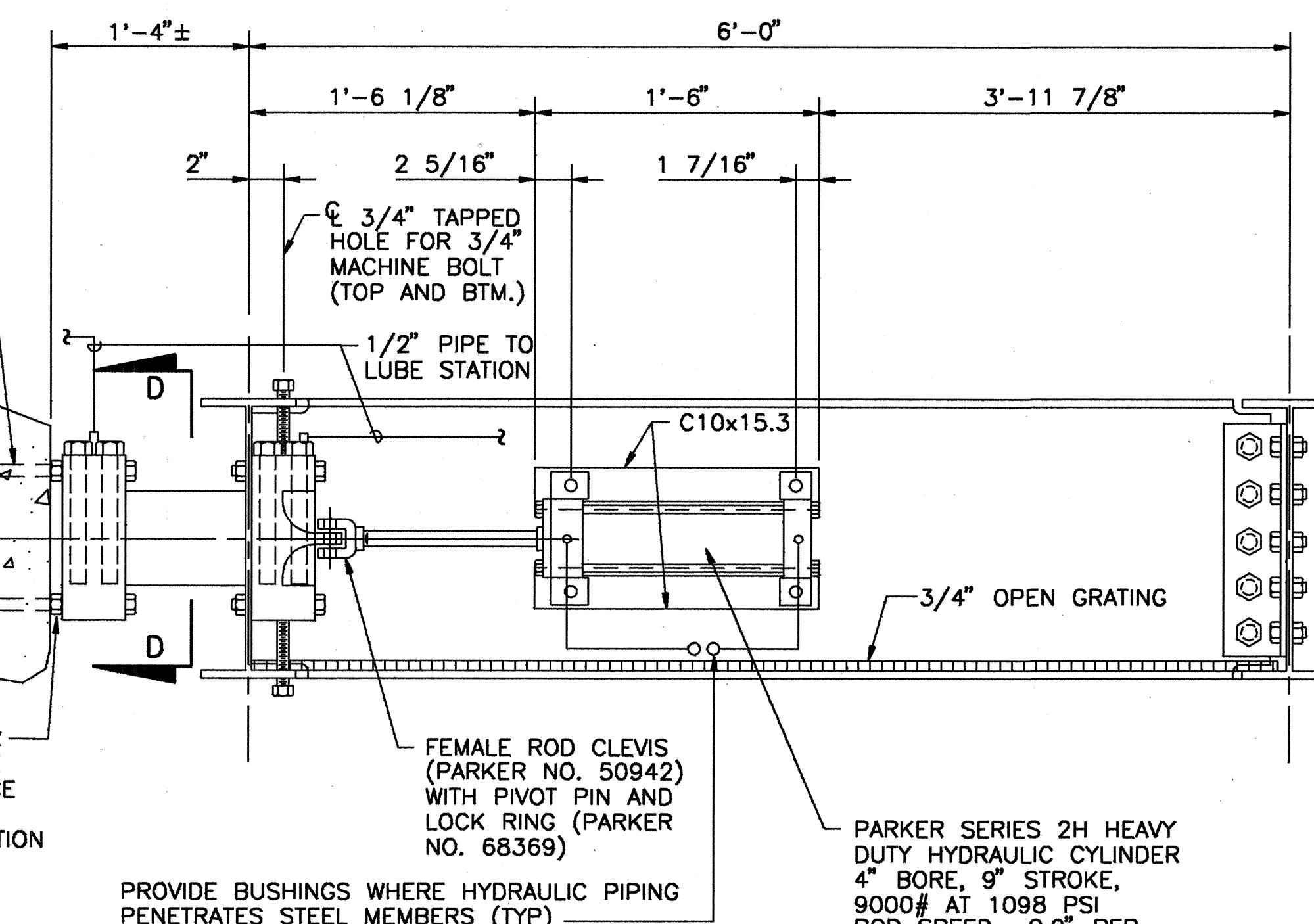
ELEVATION AT SPANLOCK
(NORTH SIDE SIMILAR)



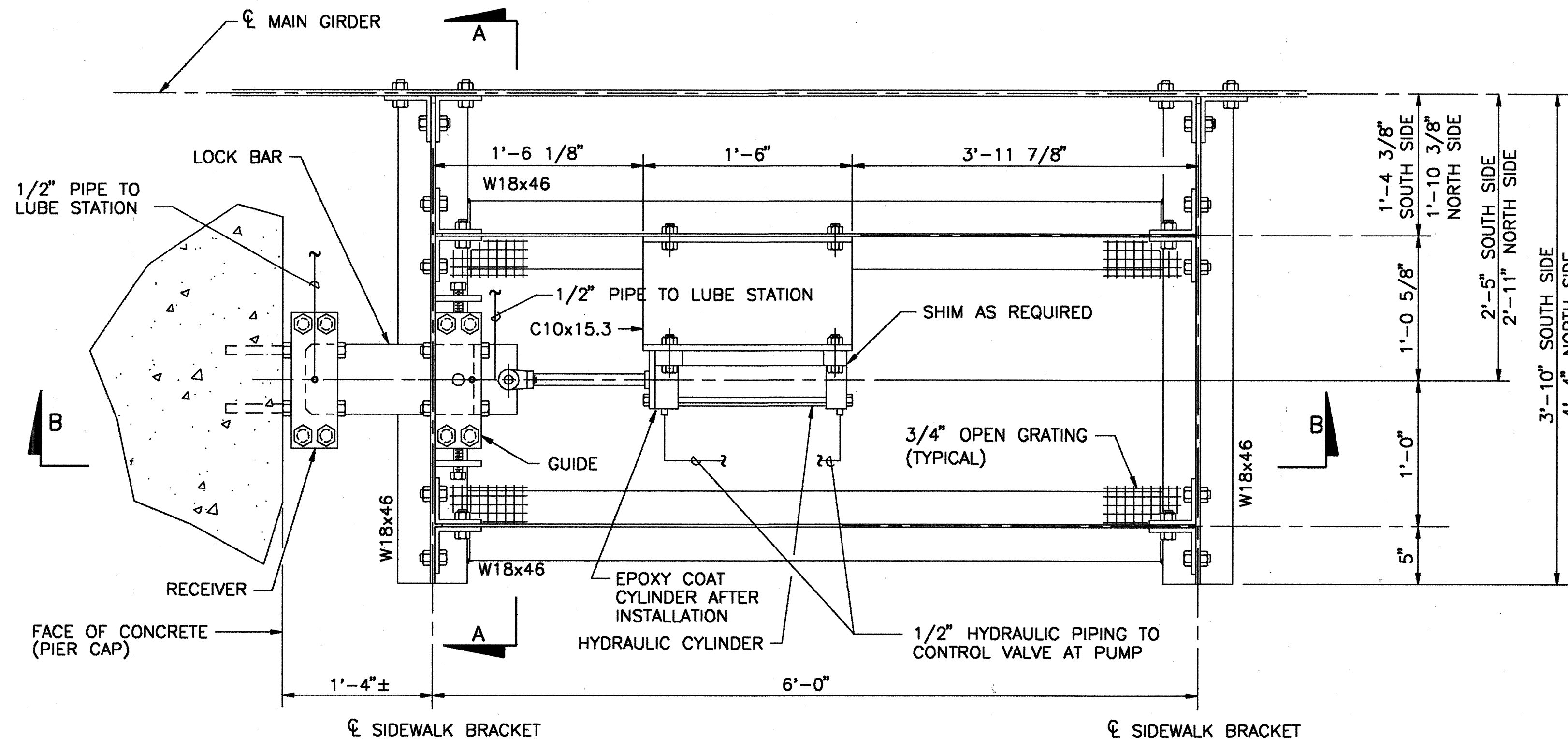
SECTION A-A

(4) 3/4" HVA EXPANSION ANCHORS WITH (1) LEVELING NUT AND (1) HEAVY HEX NUT EACH (6" MIN. EMBED)

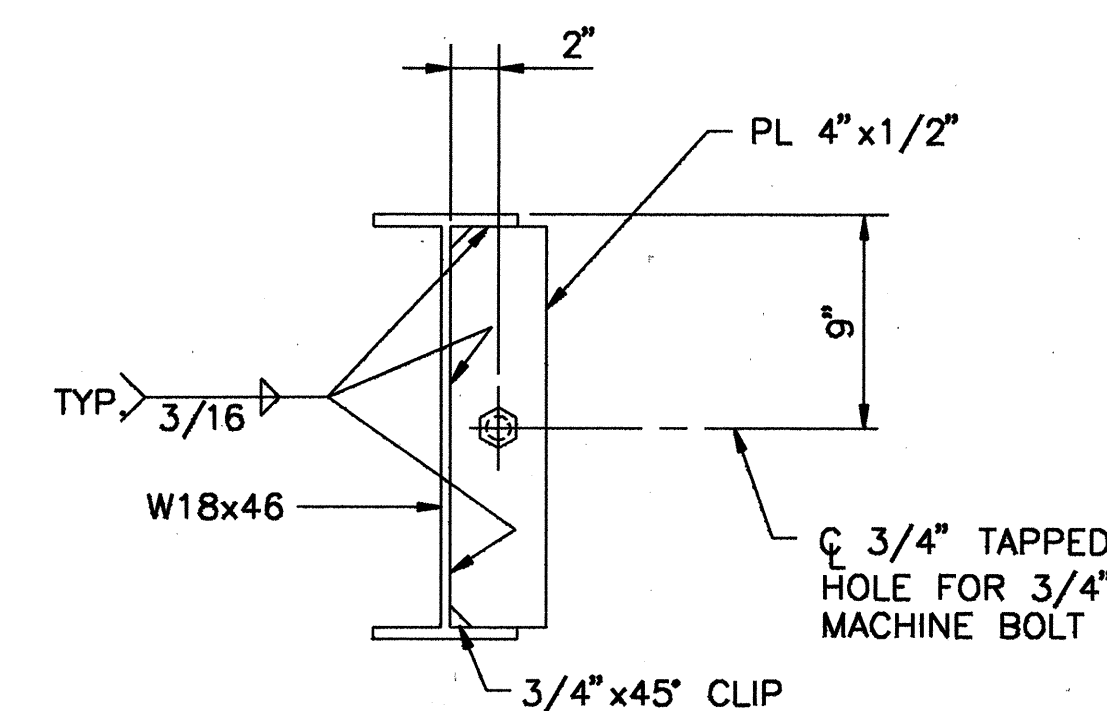
SHIM BETWEEN RECEIVER AND FACE OF CONCRETE TO OBTAIN FULL SURFACE CONTACT. SEE SECTION 468 FOR SHIM INFORMATION



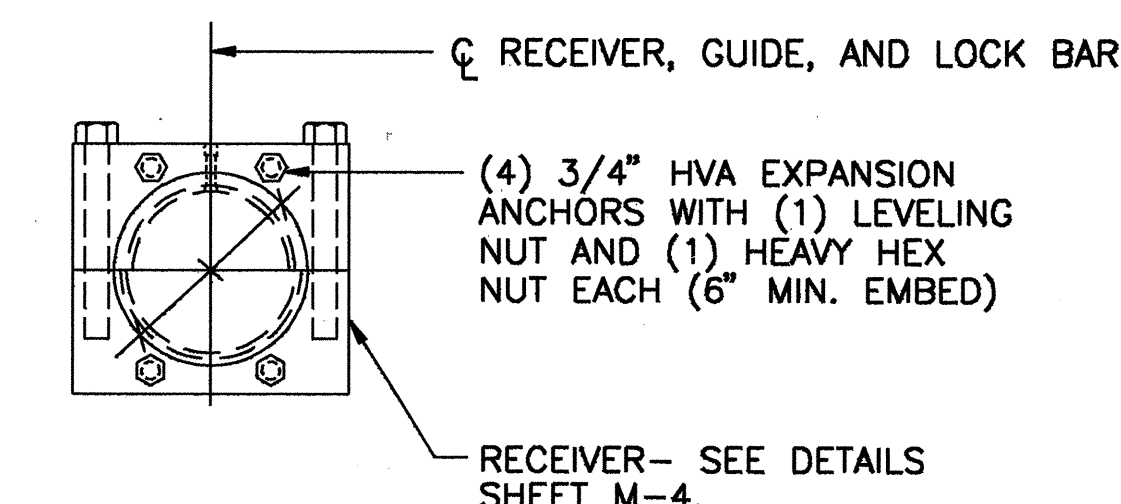
SECTION B-B



ENLARGED PLAN





SECTION C-C

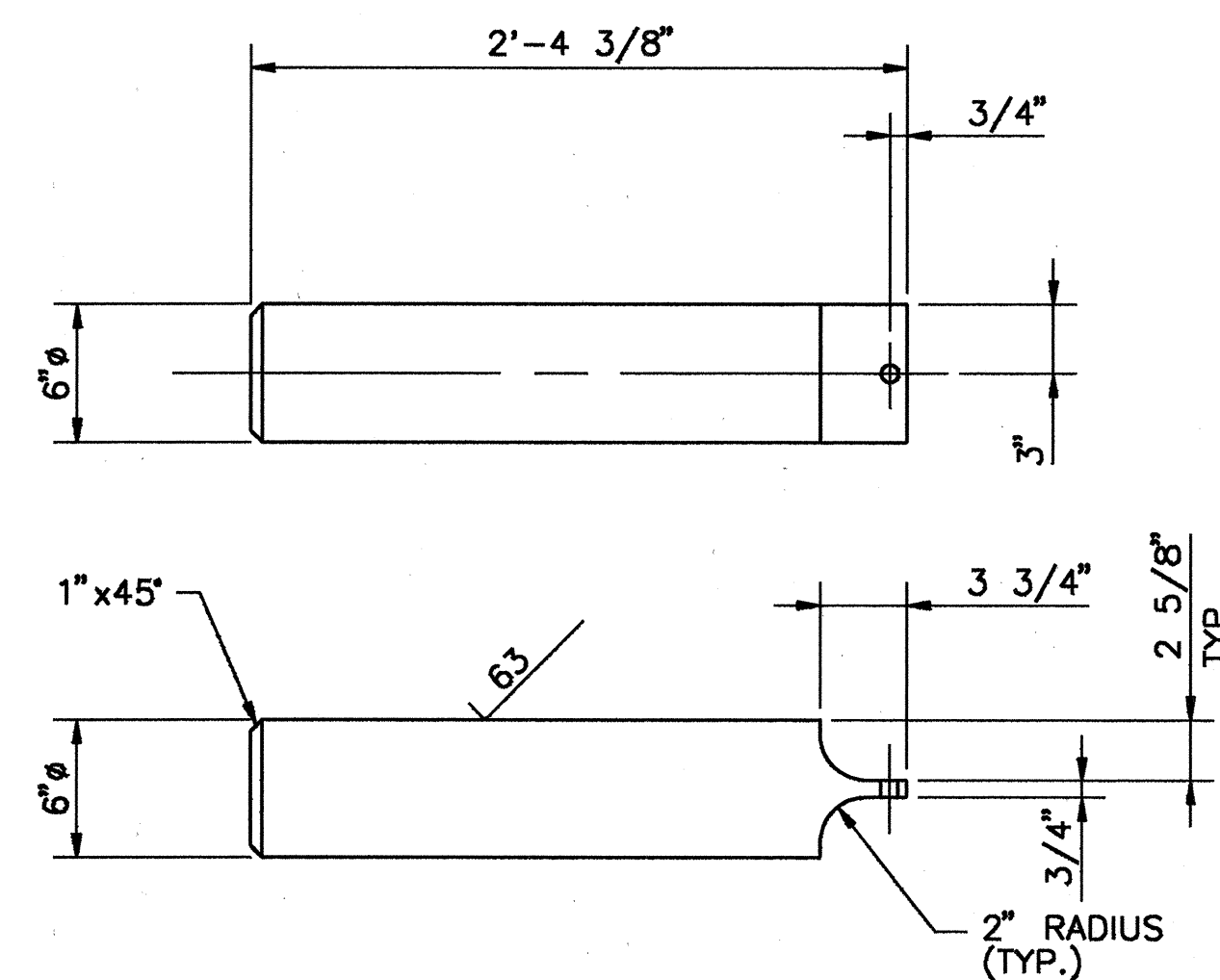


SECTION D-D

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

BY: CAD/MECH
C:\WORK\BMECH\08/02/95 13:21:01 ALC PRODUCED BY DSA CAD SYSTEM

REVISIONS			REVISIONS			SEAL:	Names		Dates		 <div>DSA GROUP, INC. 2005 PAN AM CIRCLE TAMPA, FLORIDA 33607</div>  <div>PINELLAS COUNTY DEPARTMENT OF PUBLIC WORKS</div>	SHEET TITLE: SPAN LOCK DETAILS PROJECT NAME: BECKETT BRIDGE REPAIRS	SHEET M-3
Date	By	Description	Date	By	Description		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				

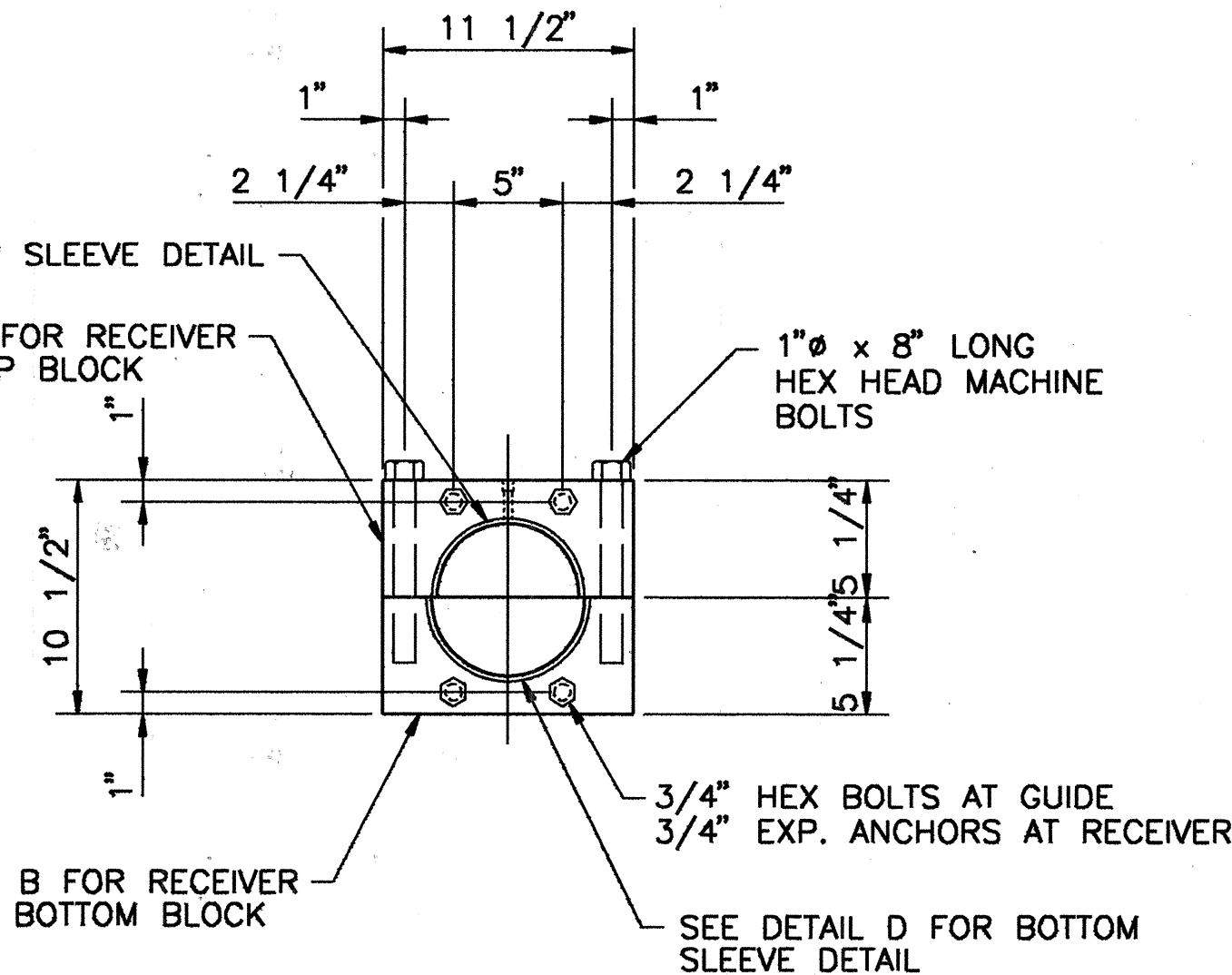


LOCK BAR DETAILS

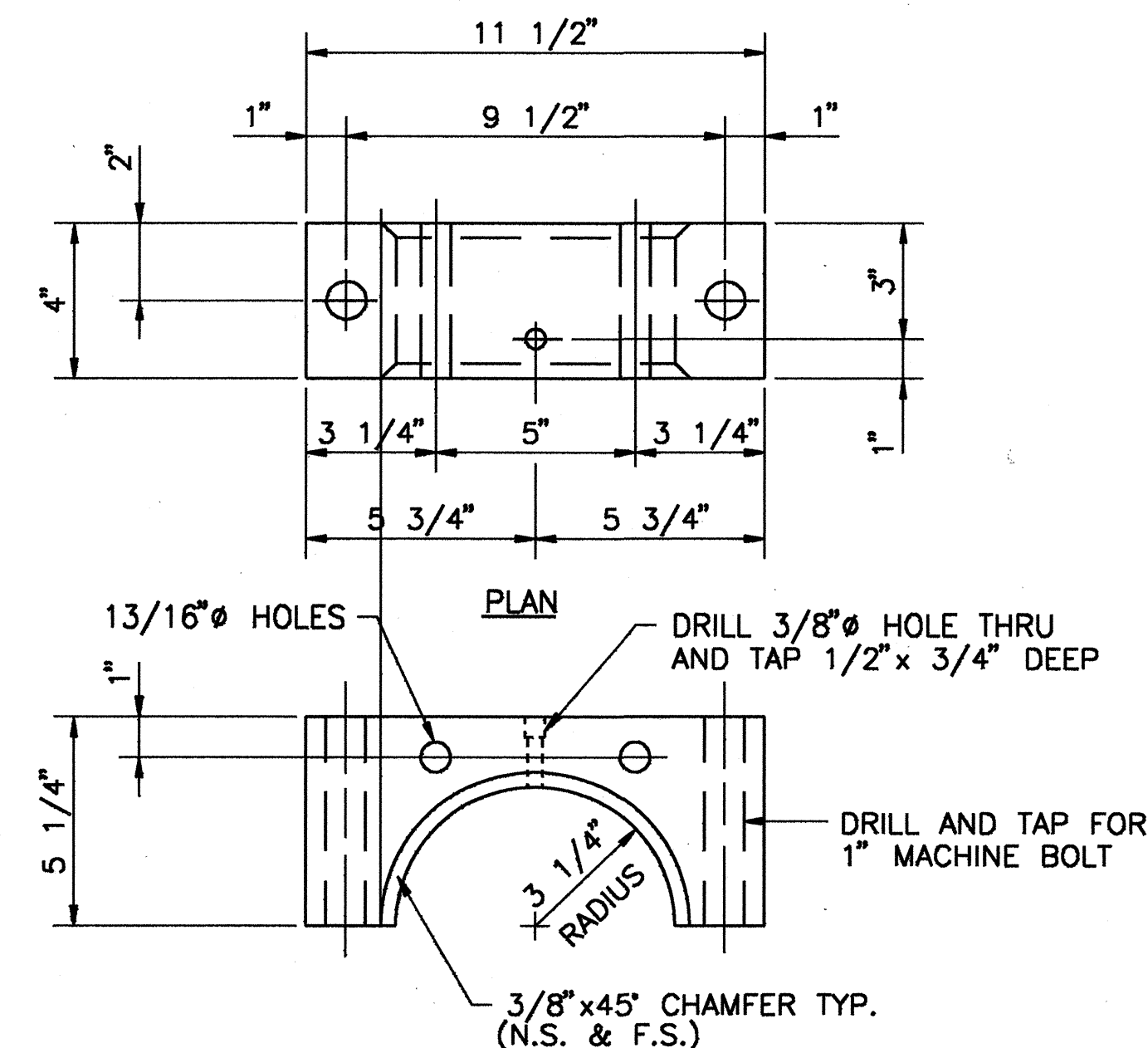
MATERIAL OF CONSTRUCTION TO BE SAE51440 S/S.

SEE DETAIL C FOR TOP SLEEVE DETAIL

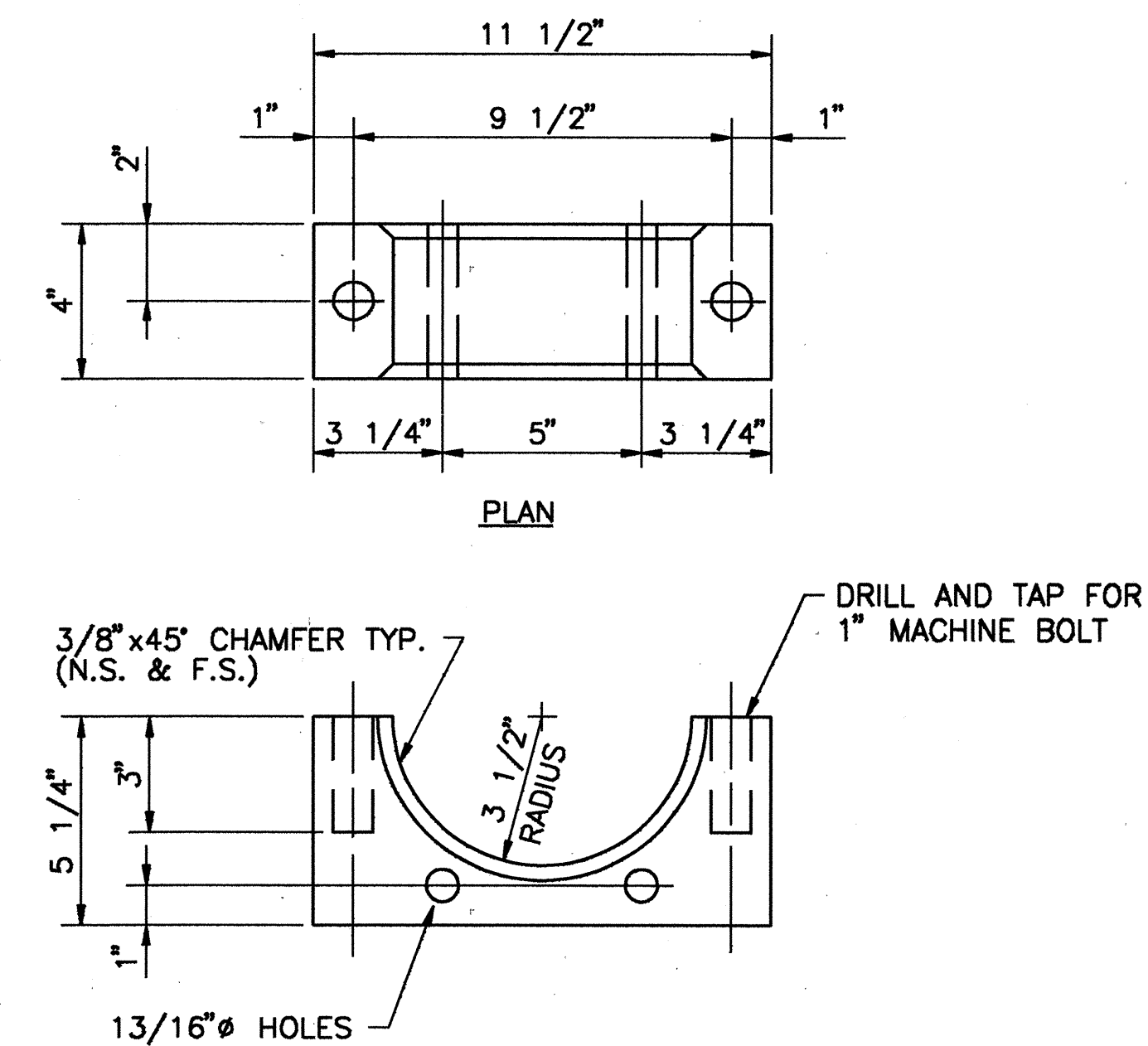
SEE DETAIL A FOR RECEIVER AND GUIDE TOP BLOCK



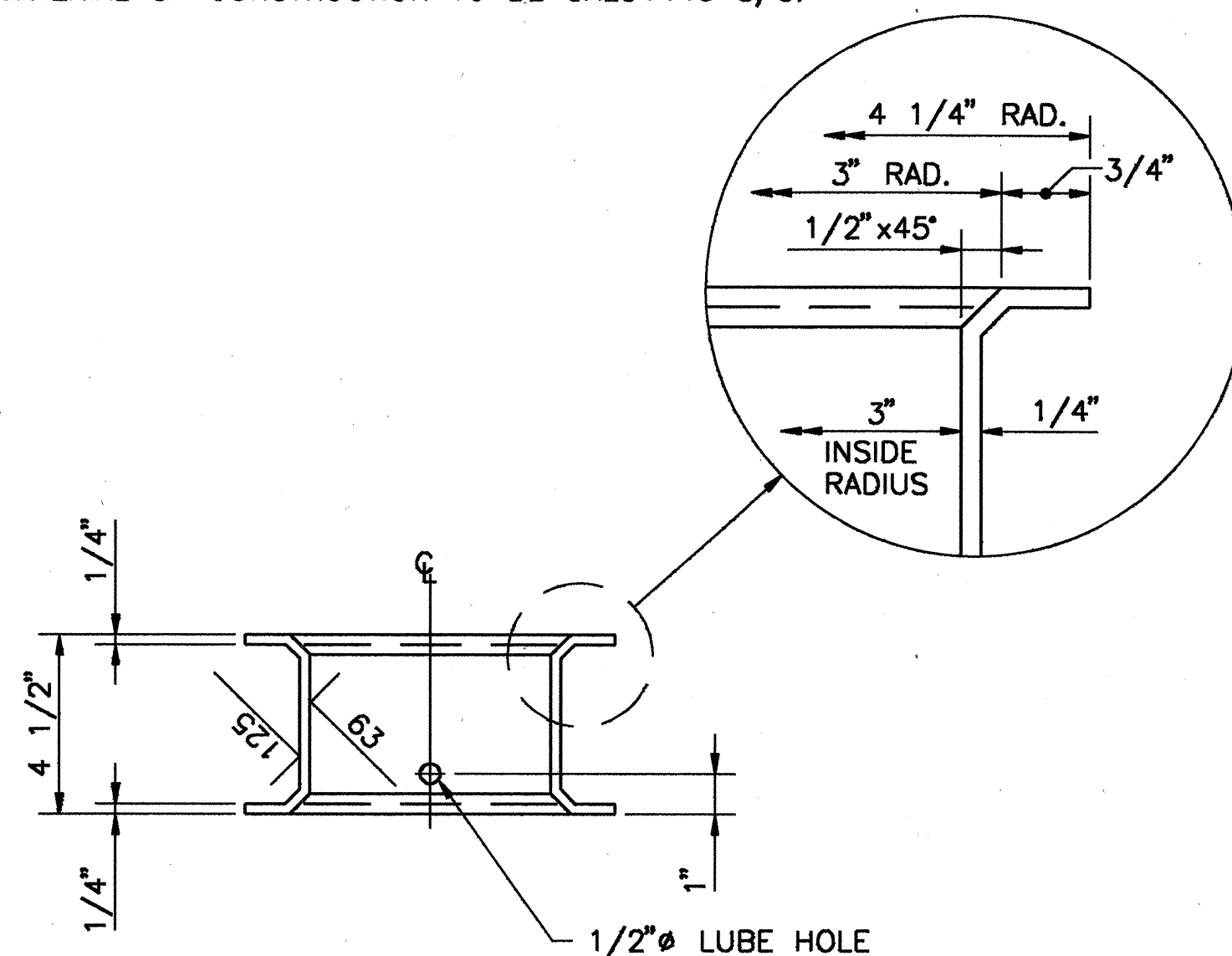
RECEIVER AND GUIDE BLOCK DETAIL



DETAIL A - RECEIVER AND GUIDE TOP

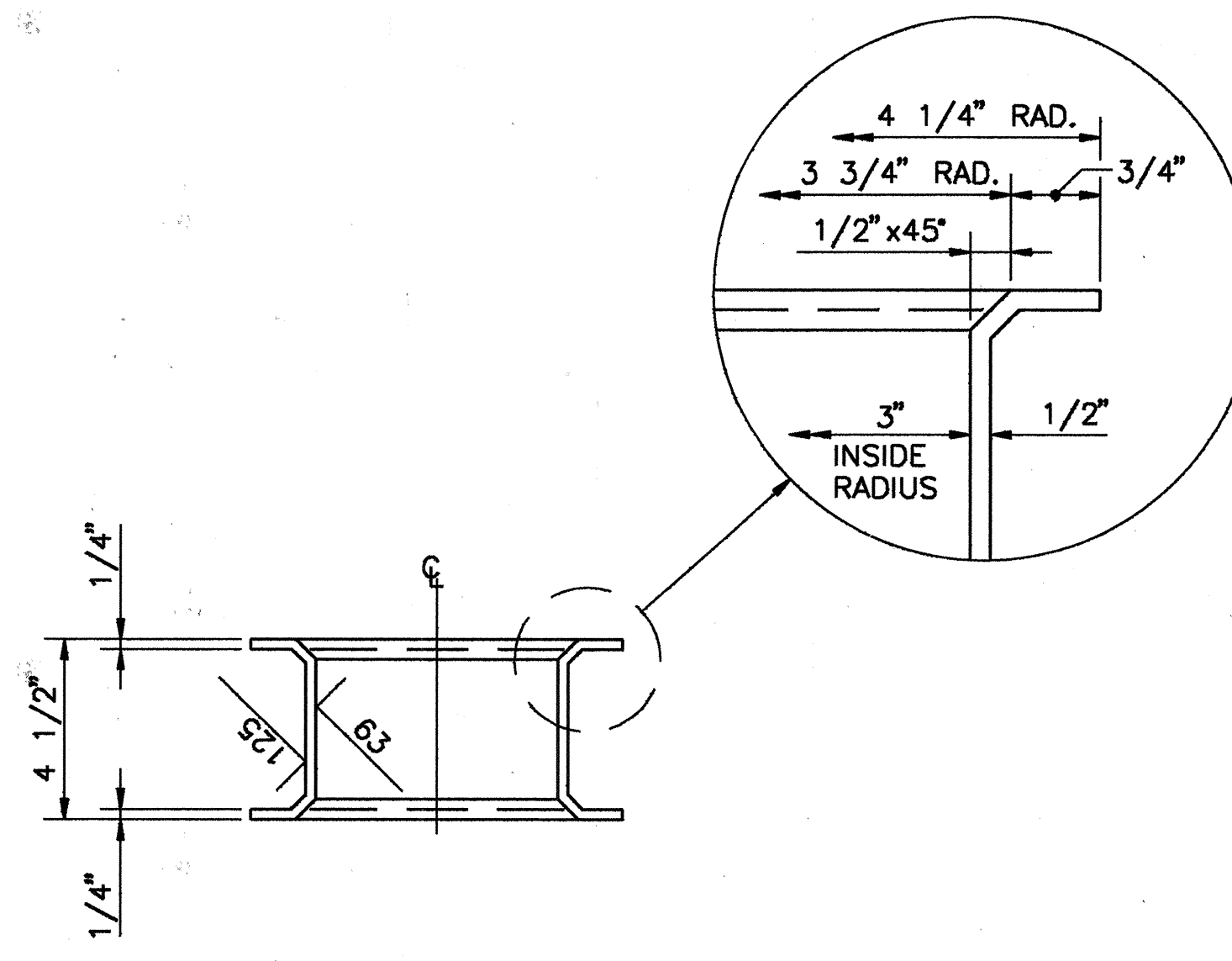


DETAIL B - RECEIVER AND GUIDE BOTTOM



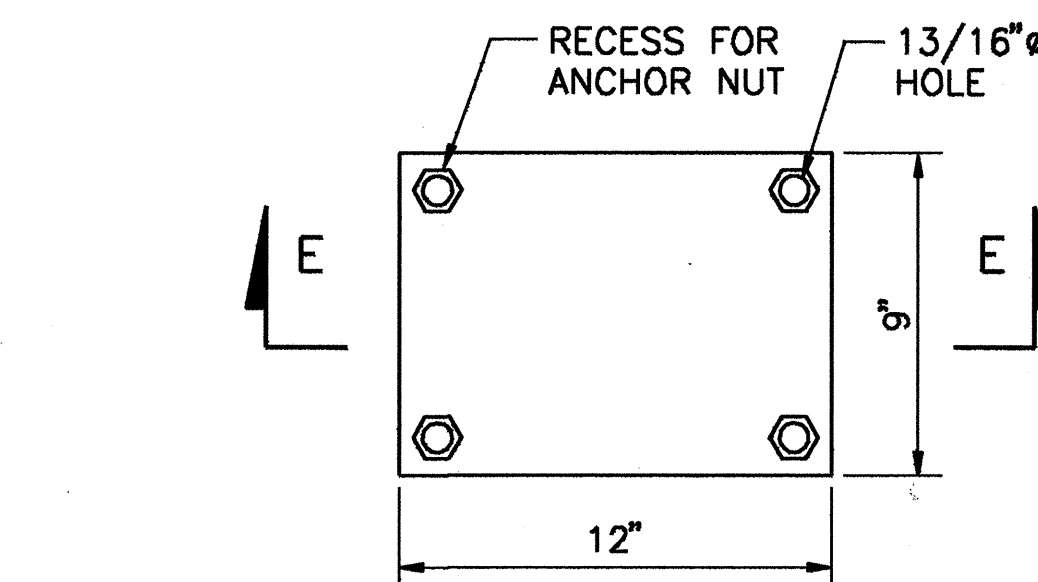
DETAIL C - RECEIVER AND GUIDE SLEEVE TOP

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



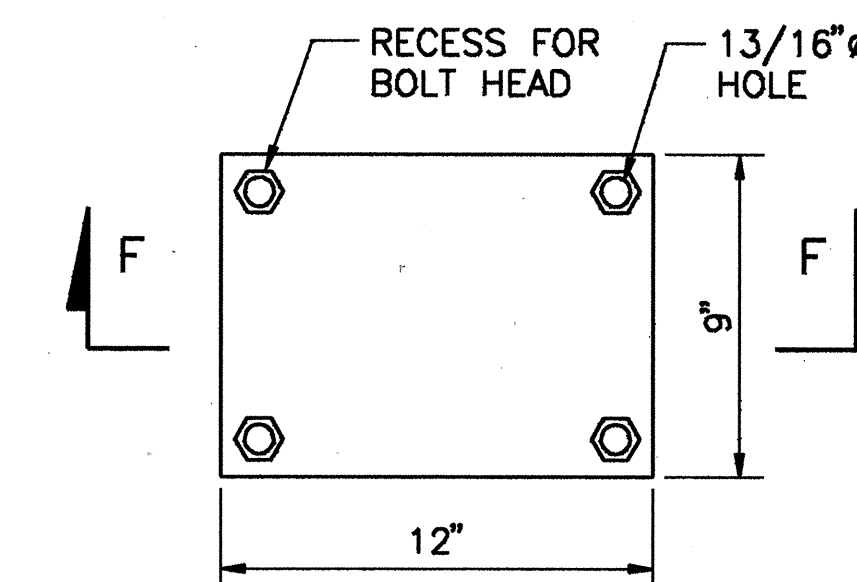
DETAIL D - RECEIVER AND GUIDE SLEEVE BOTTOM

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



SECTION E-E

STRIKE PLATE - TWO REQ'D.



SECTION F-F

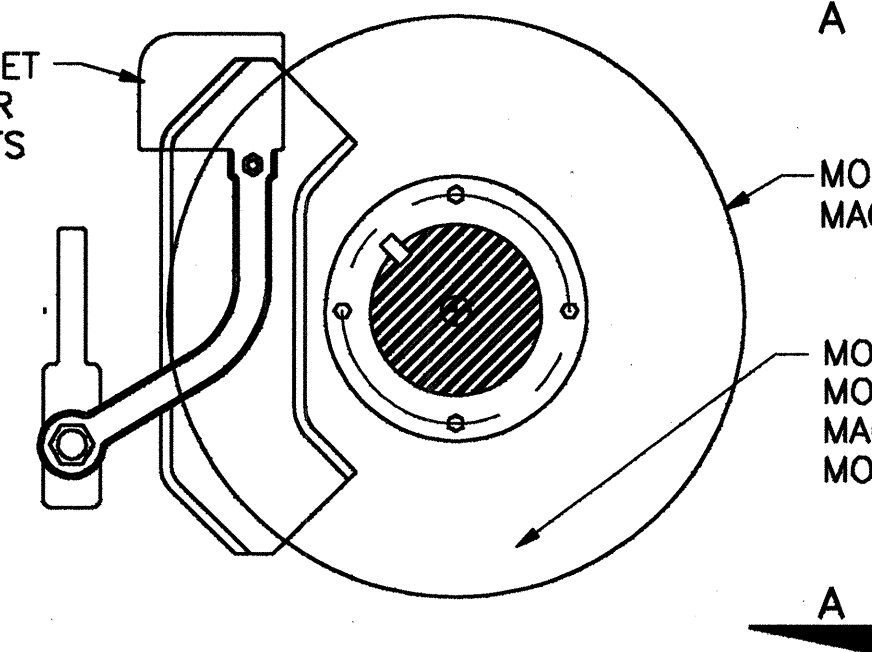
LIVE LOAD SHOE - TWO REQ'D.

- 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:\44089\CADD\MECH
C:\WORK\BMECH4 06/16/95 14:58:01 KTL PRODUCED BY DSA CADD SYSTEM

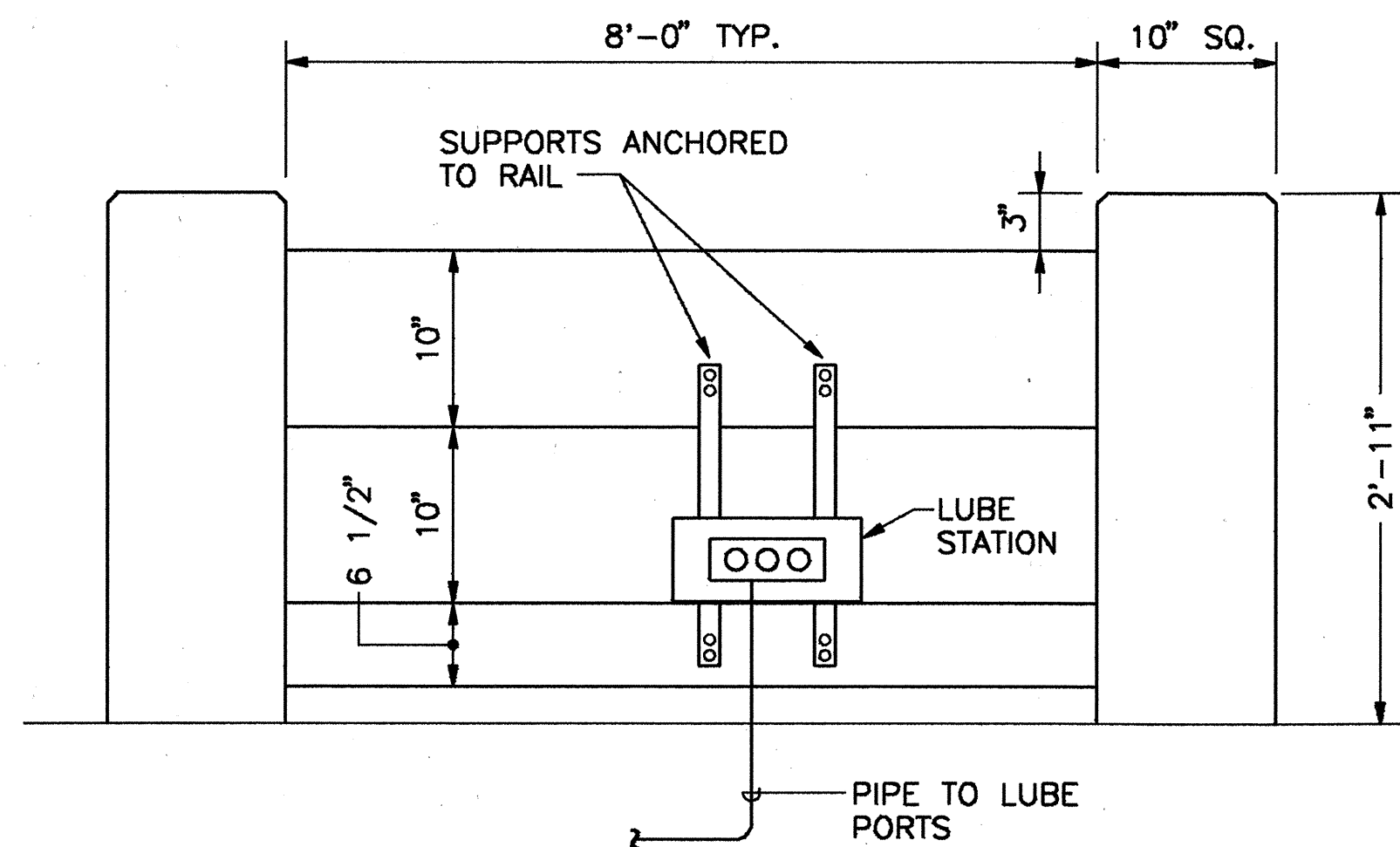
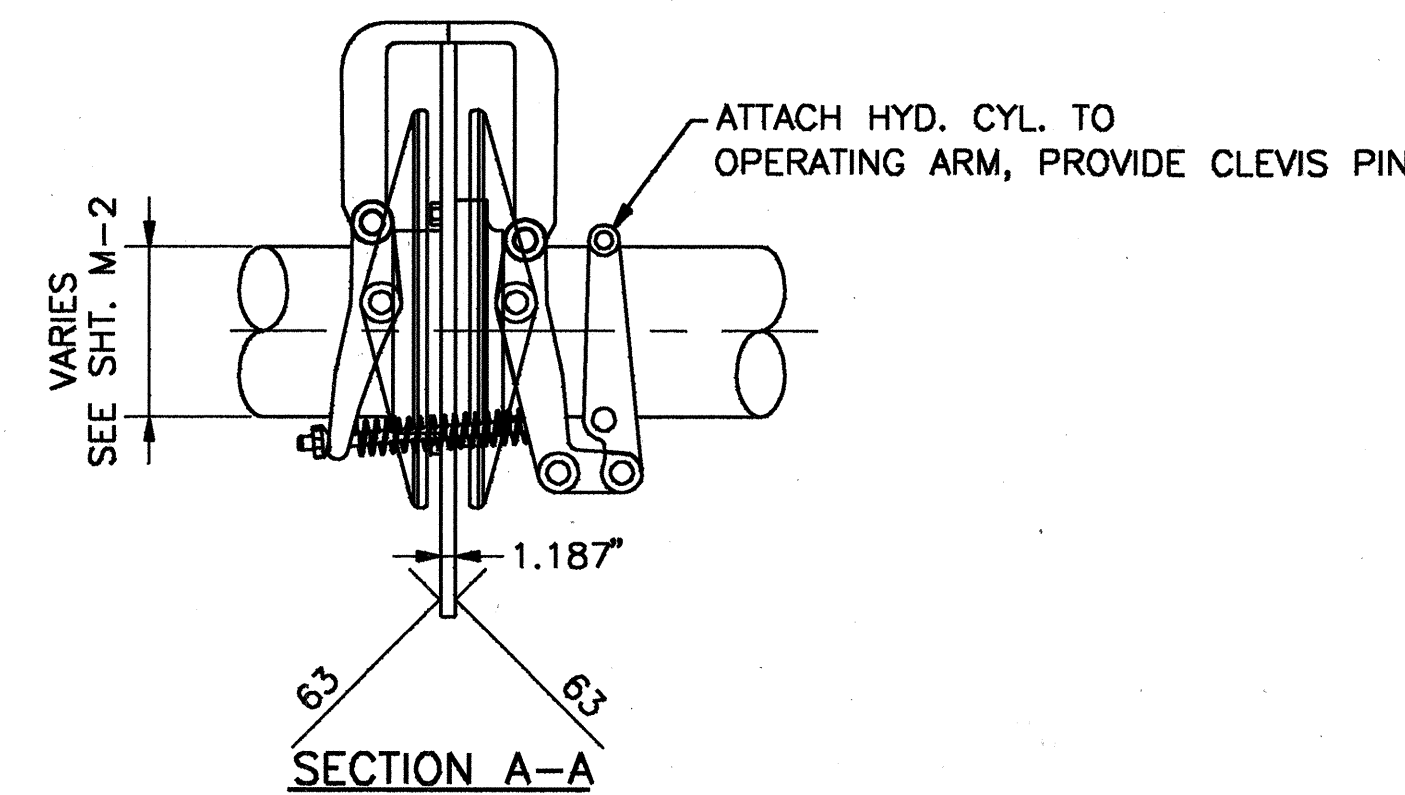
REVISIONS			REVISIONS			SEAL:	Names			DSAGROUP INC.	PINELLAS COUNTY DEPARTMENT OF PUBLIC WORKS	SHEET TITLE: SPAN LOCK DETAILS PROJECT NAME: BECKETT BRIDGE REPAIRS	SHEET M-4
Date	By	Description	Date	By	Description		Drawn by	CLM	5-95				
							Checked by	LET	5-95				
							Designed by	LET	5-95				
							Checked by	RMC	5-95				
							Approved by	R.M. COURET					

SEE SHEET
M-2 FOR
SUPPORTS

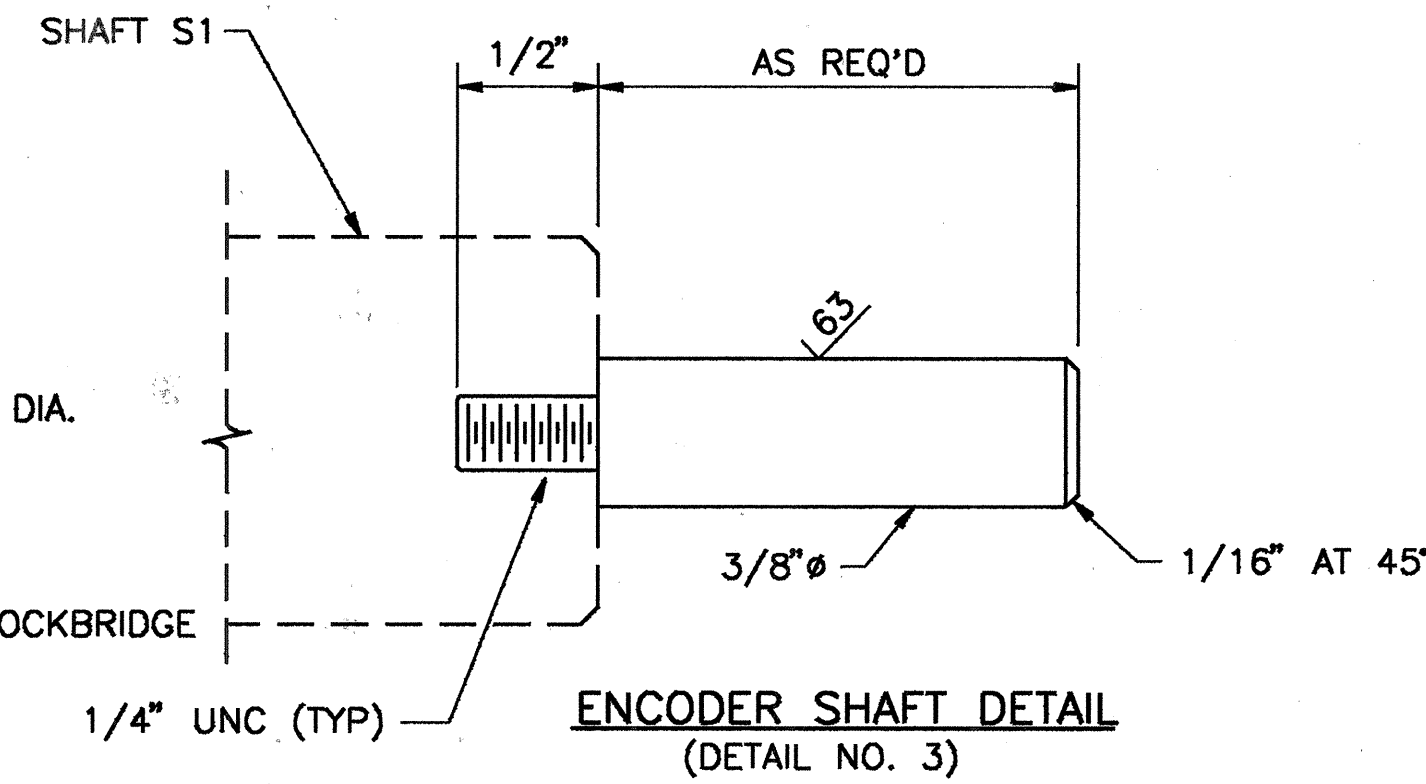


MOTOR BRAKE ROTOR IS 11" DIA.
MACHINERY BRAKE ROTOR IS 11" DIA.
MOTOR BRAKE IS STOCKBRIDGE
MODEL L-11
MACHINERY BRAKE CALIPER IS STOCKBRIDGE
MODEL L-11

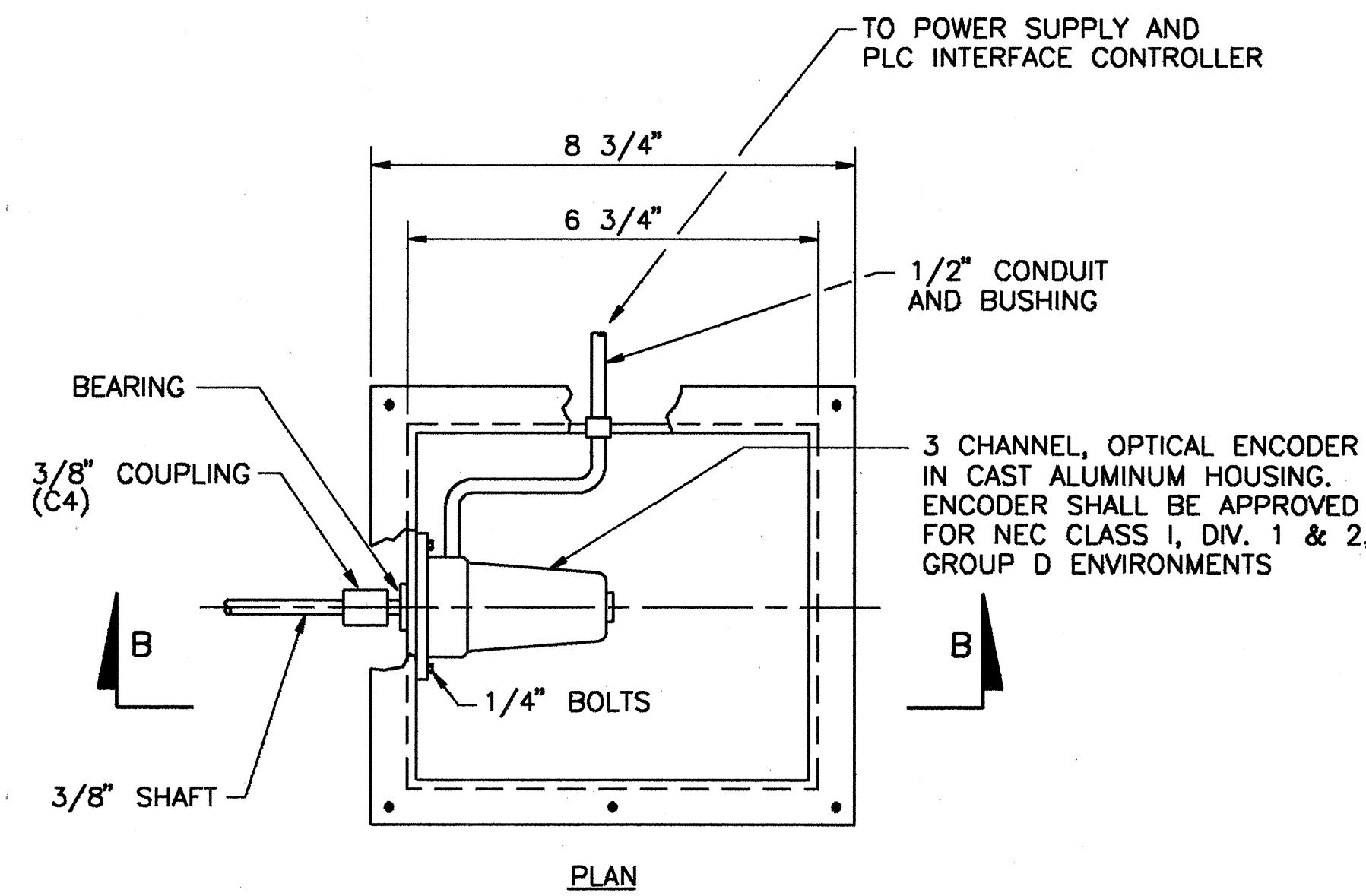
MOTOR AND MACHINERY BRAKE DETAIL
(MACH.=SPRING APPLY, HYDRAULIC RELEASE, 905 PSI RELEASE PRESSURE)
(MOTOR=HYDRAULIC APPLY, 300 PSI HYDRAULIC PRESSURE, SPRING RELEASE)
(DETAIL NO. 1)



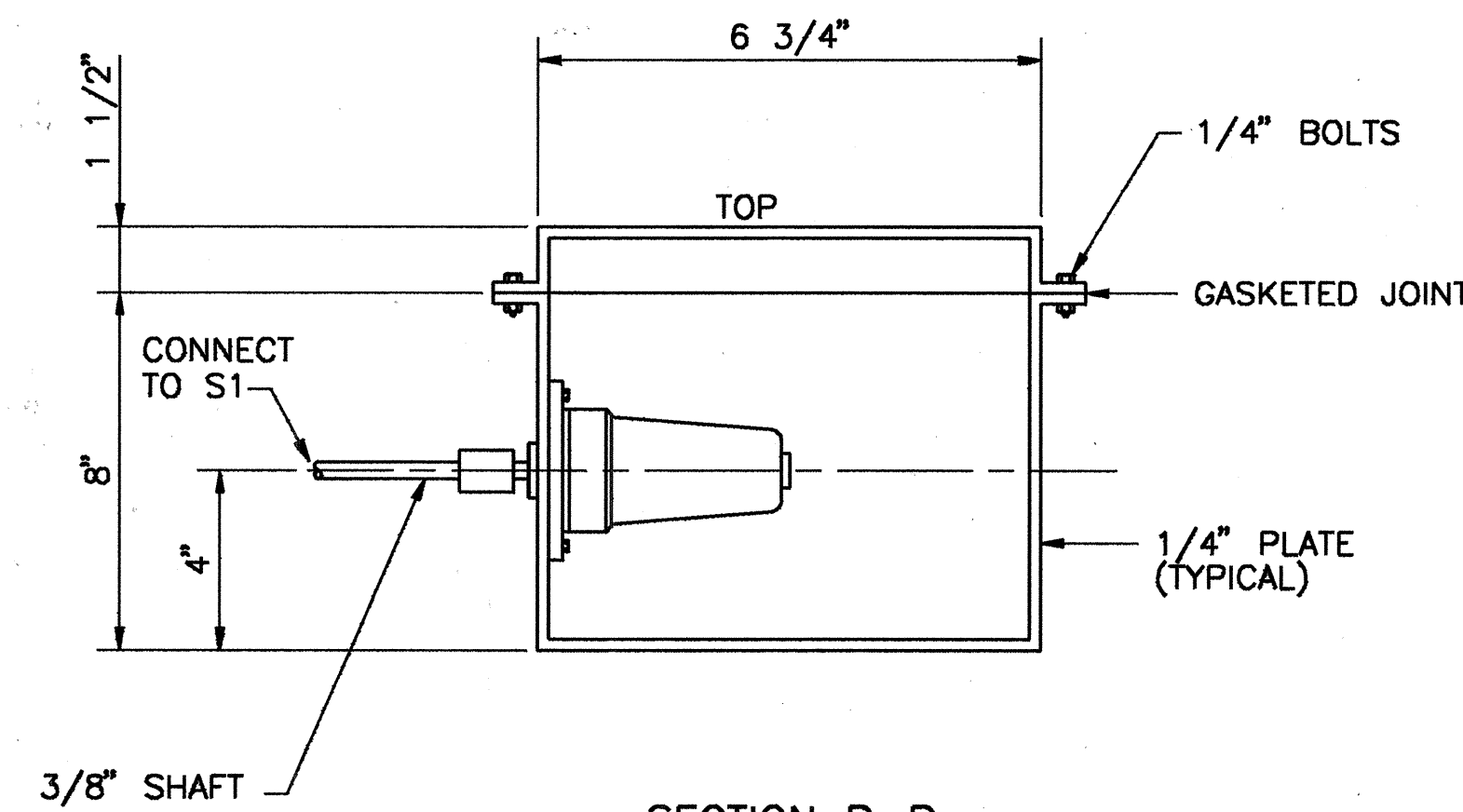
DETAIL OF LUBE STATION MOUNTED ON RAIL
(DETAIL NO. 5)



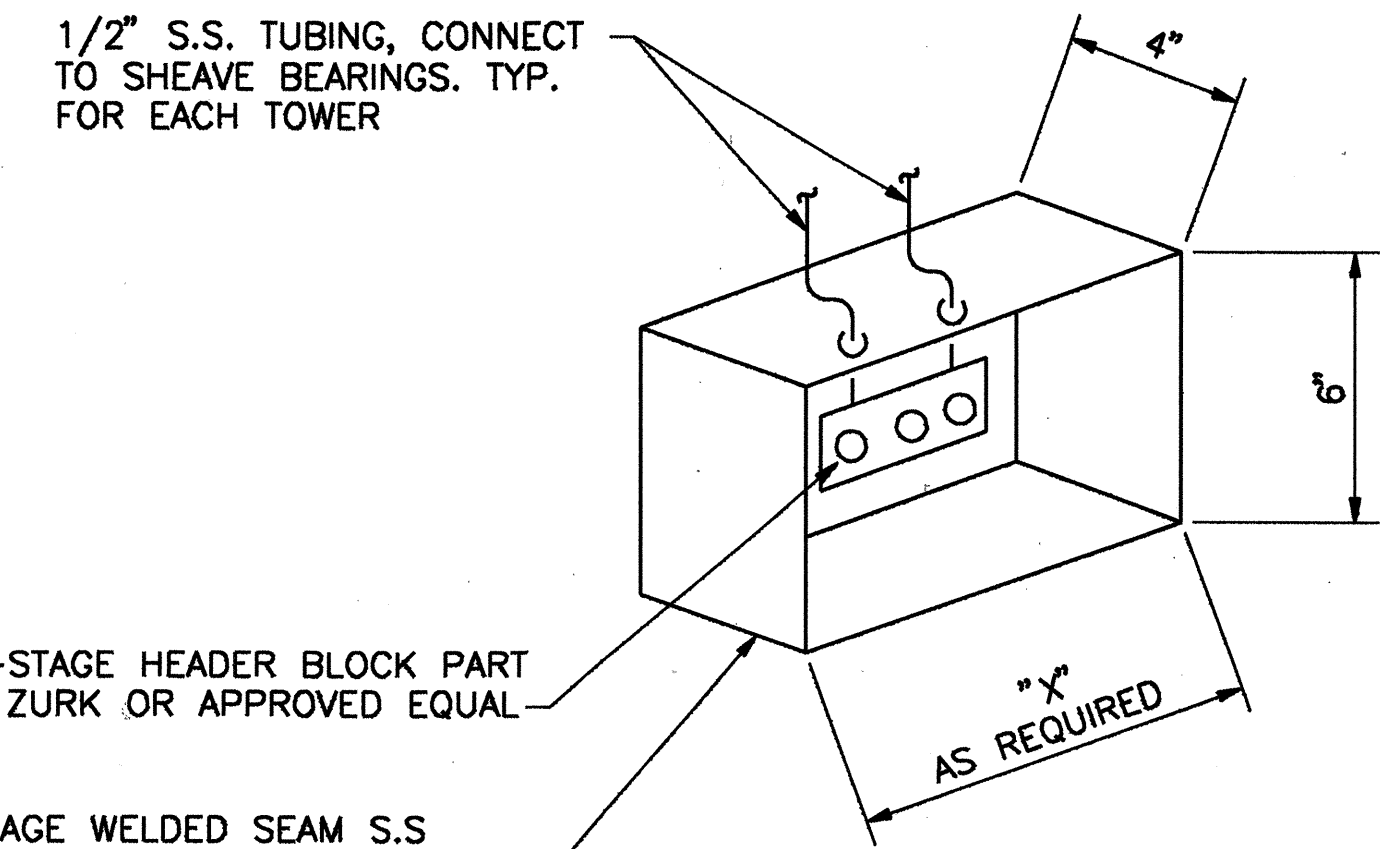
ENCODER SHAFT DETAIL
(DETAIL NO. 3)



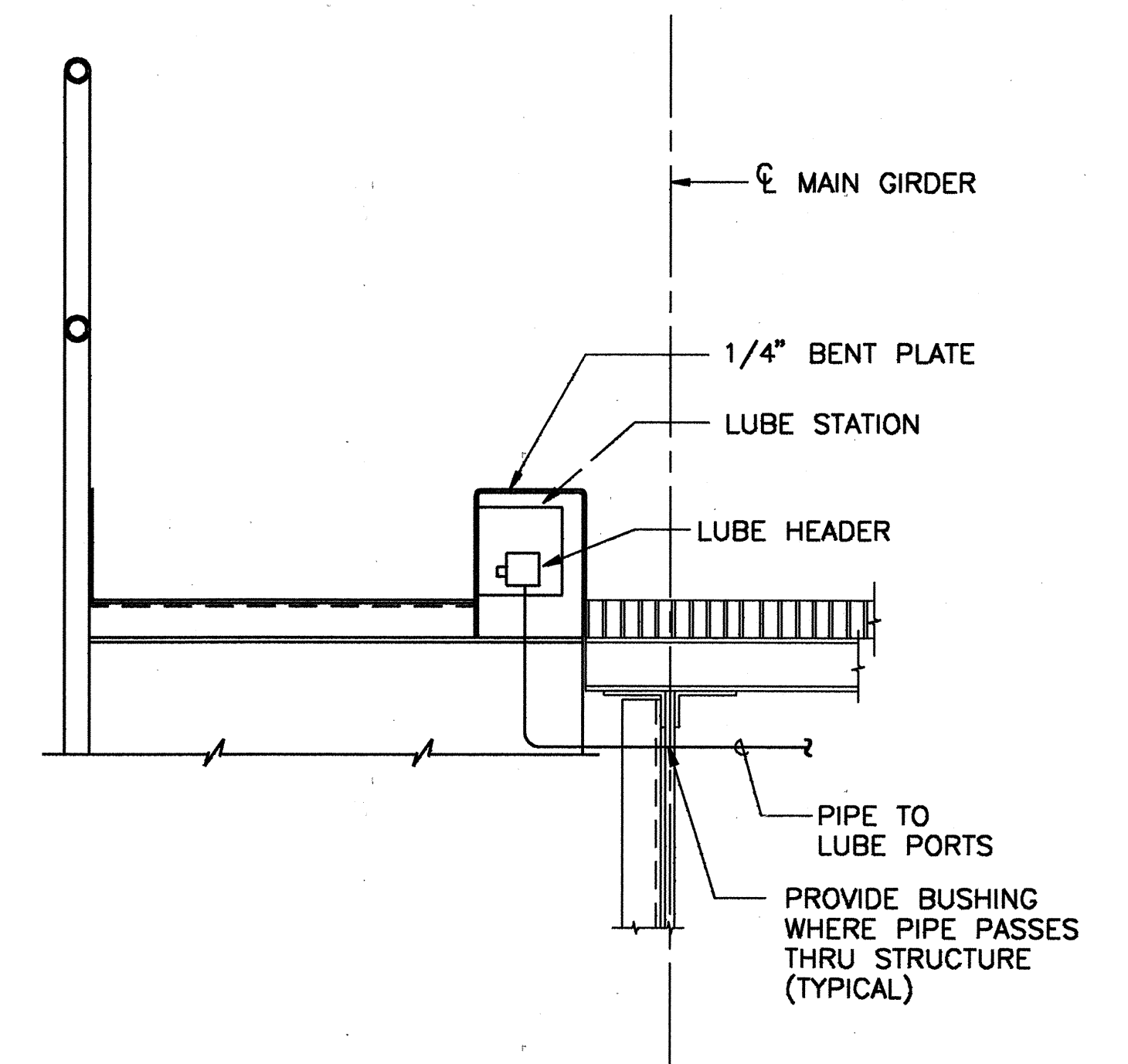
ENCODER GEAR DETAILS
(TYPICAL FOR ONE SHAFT)
(DETAIL NO. 4)



SECTION B-B



LUBRICATION STATION DETAIL
(DETAIL NO. 2)



DETAIL OF LUBE STATION MOUNTED IN METAL CURB
(DETAIL NO. 6)

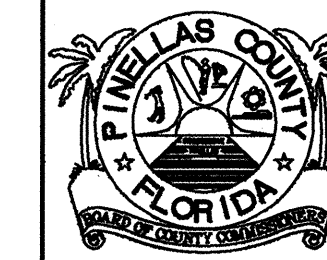
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REVISIONS			REVISIONS		
Date	By	Description	Date	By	Description

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

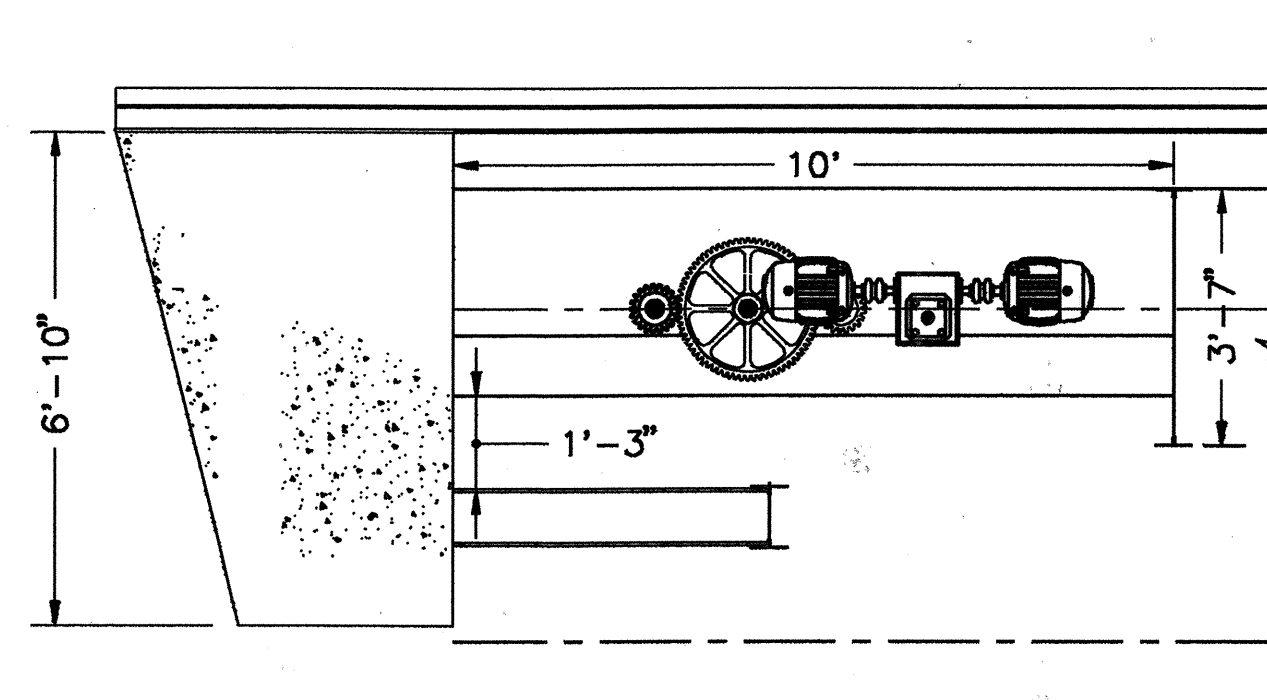


DSA GROUP, INC.
2005 PAN AM CIRCLE
TAMPA, FLORIDA 33607

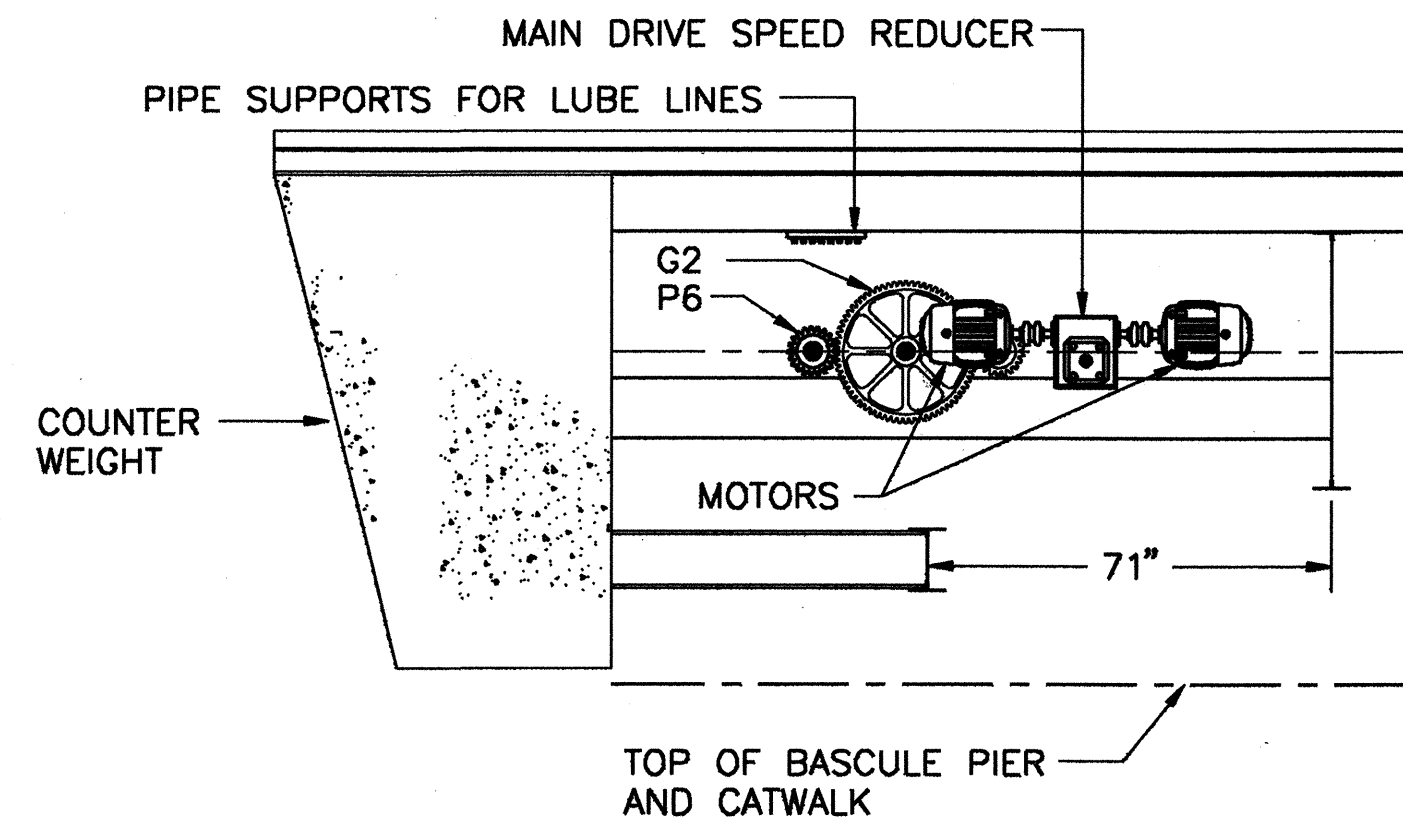


PINELLAS COUNTY
DEPARTMENT OF
PUBLIC WORKS

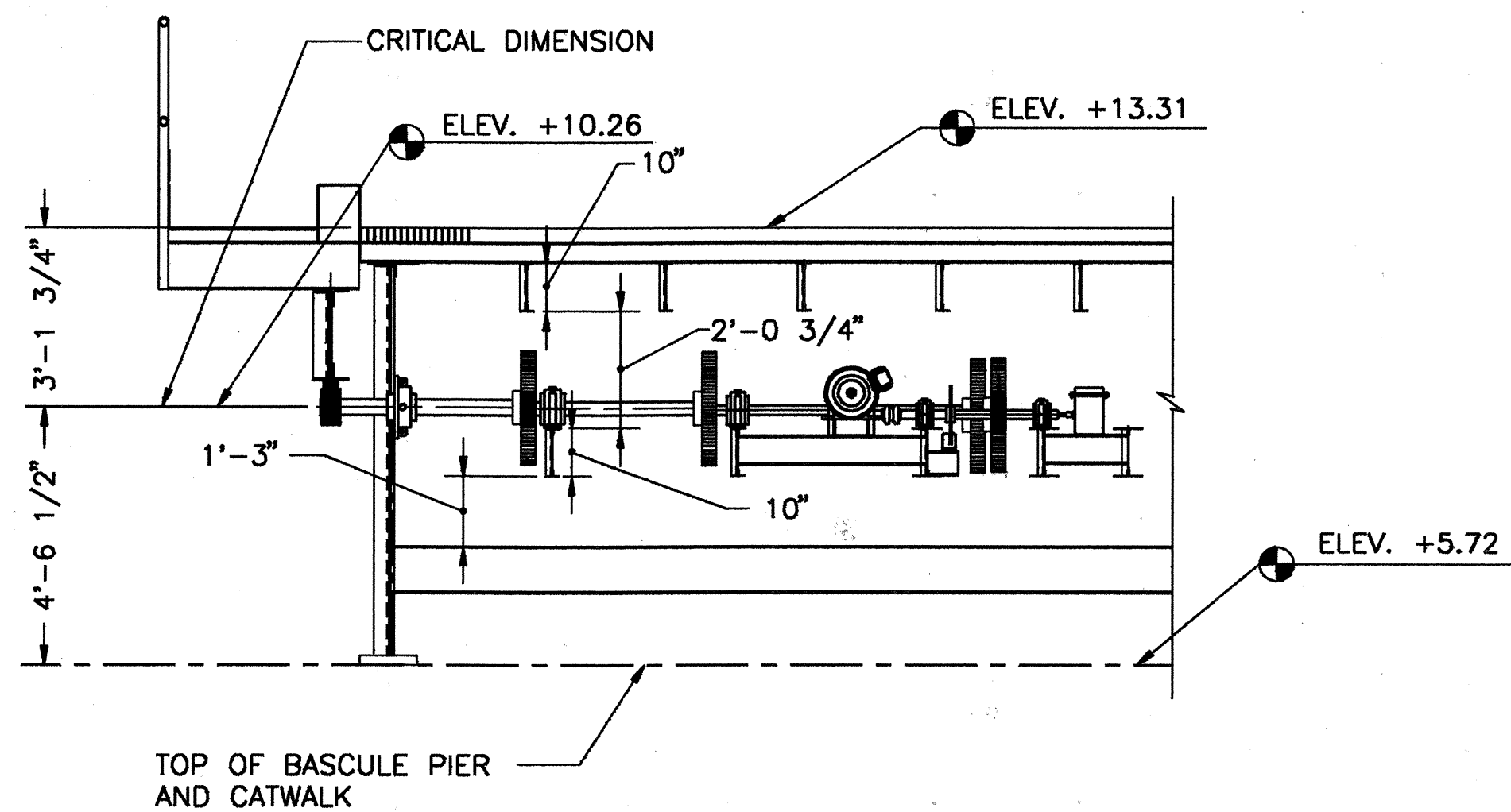
SHEET TITLE:	MISCELLANEOUS DETAILS	SHEET
PROJECT NAME:	BECKETT BRIDGE REPAIRS	M-5



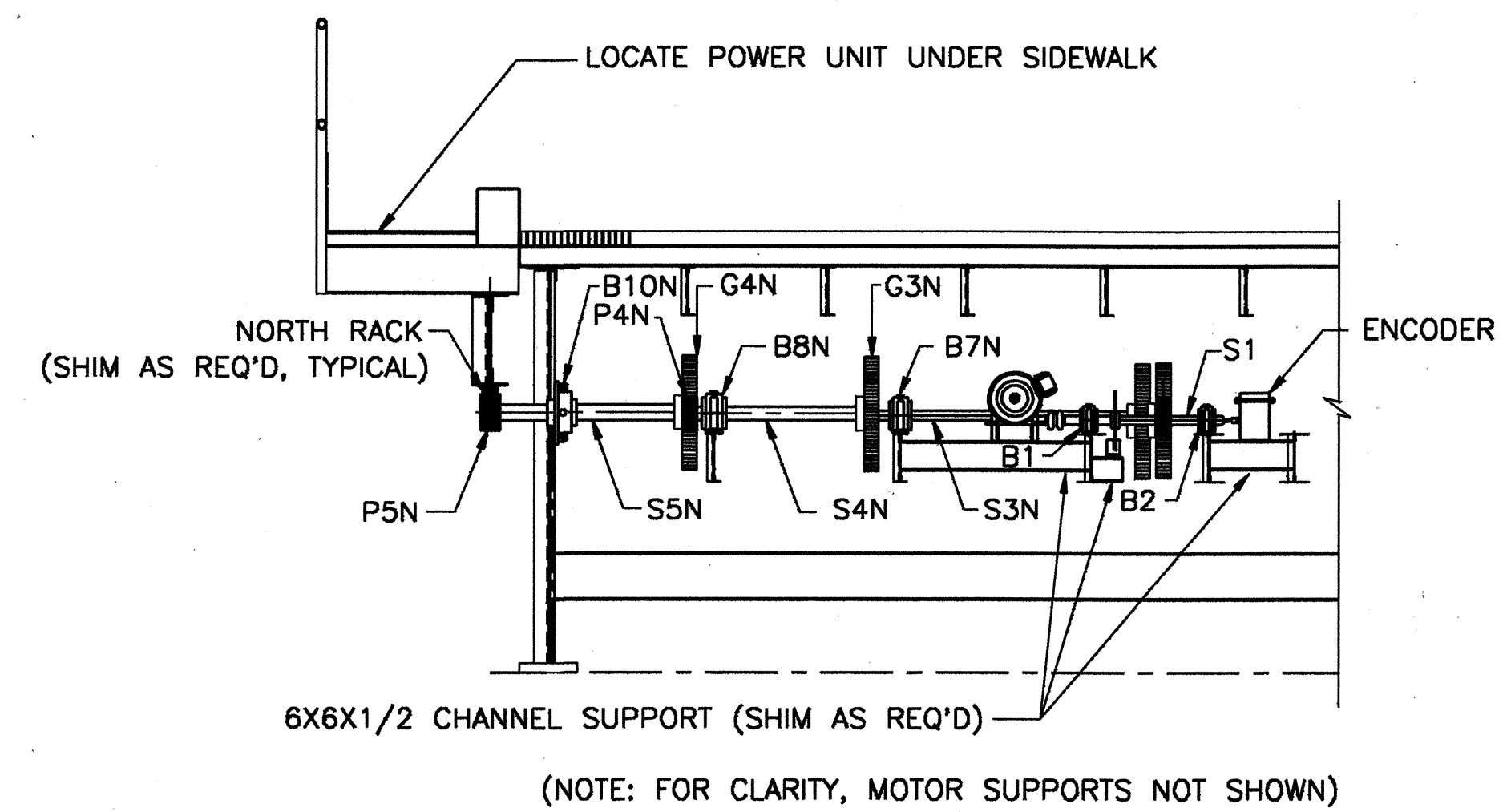
SECTION A-A (DIMENSIONS)
SCALE: 3/8" = 1'-0"



SECTION A-A (PARTS/NOTES)
SCALE: 3/8" = 1'-0"



SECTION B-B (DIMENSIONS)
SCALE: 3/8" = 1'-0"



SECTION B-B (PARTS/NOTES)
SCALE: 3/8" = 1'-0"

NOTE:
REFER TO SHEET M-2 FOR LOCATION OF SECTION CUTS

REVISIONS

Date	By	Description

REVISIONS

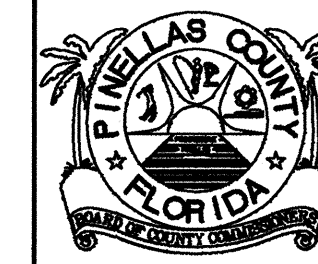
Date	By	Description

SEAL:

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



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

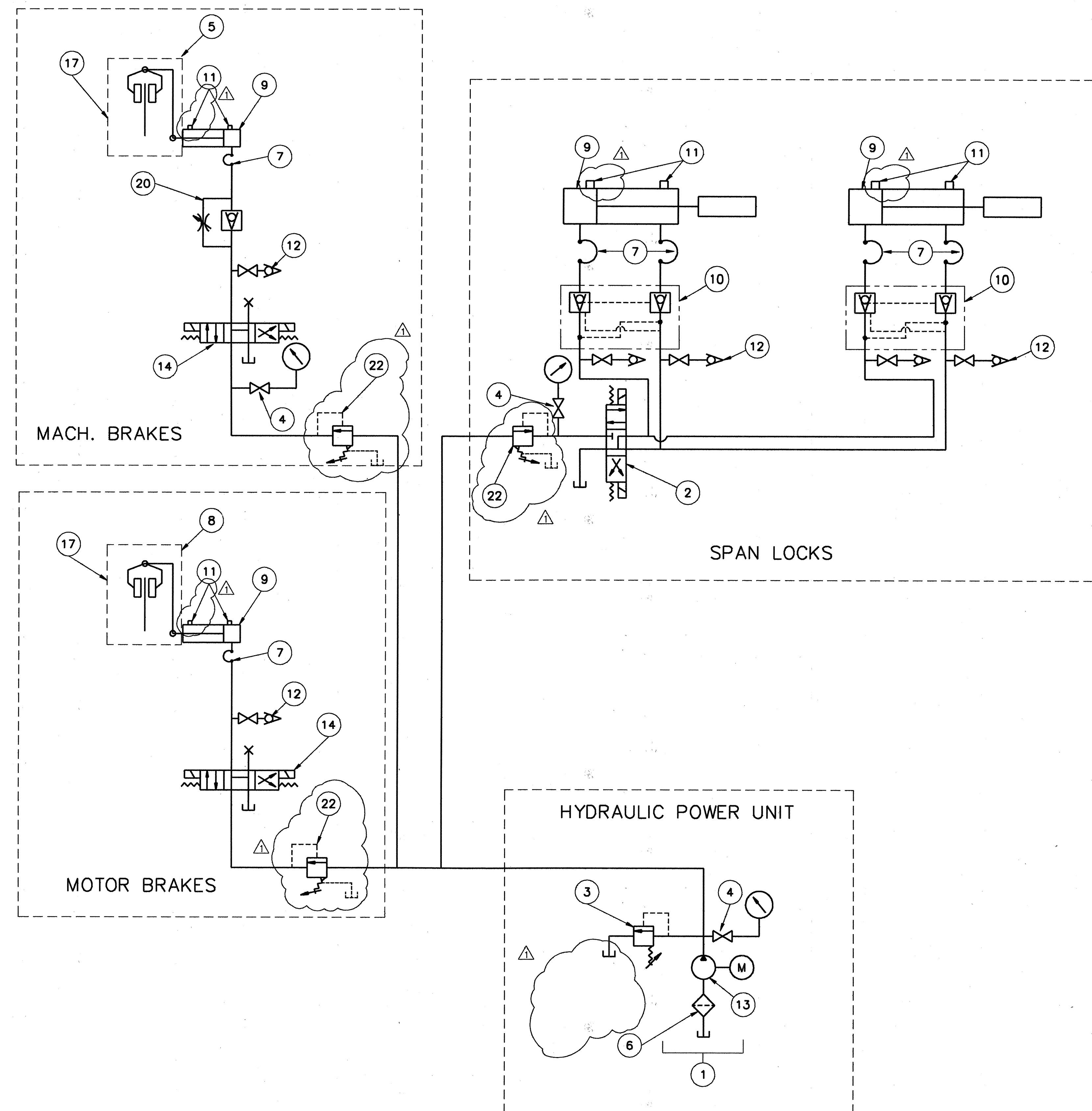


PINELLAS COUNTY
DEPARTMENT OF
PUBLIC WORKS

SHEET TITLE:	SECTIONS AND ELEVATIONS
PROJECT NAME:	BECKETT BRIDGE REPAIRS

SHEET

M-6



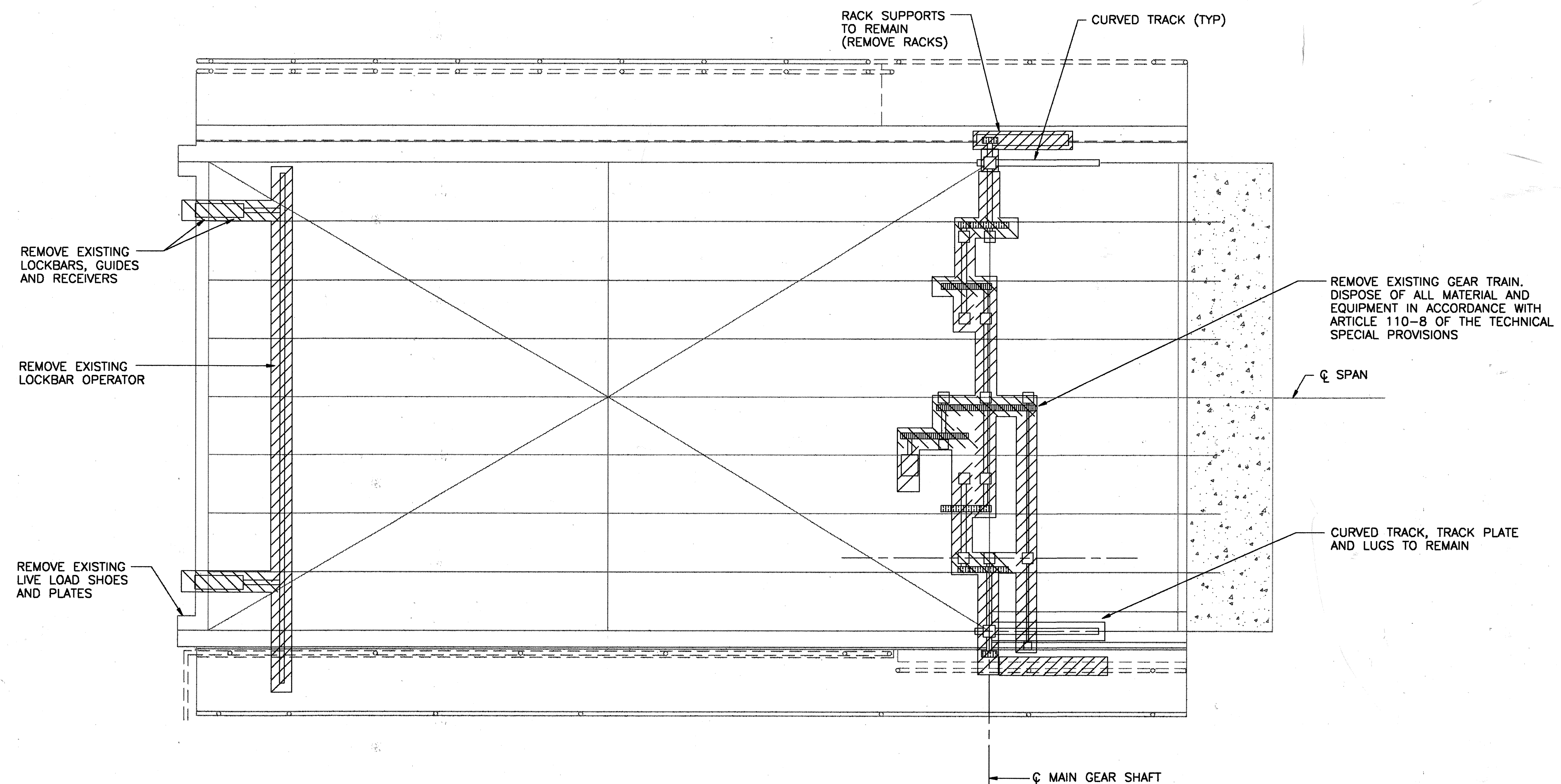
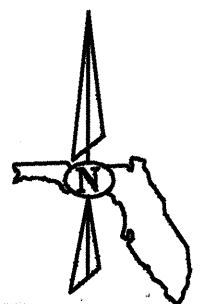
BRAKES & SPANLOCK HYDRAULIC SYSTEM DIAGRAM

BILL OF MATERIAL					
ITEM NO.	NO. REQ'D.	PART NUMBER	DESCRIPTION	BASE MFR	ALTERNATE MFR *
1	1	JIC 10 A	10 GALLON JIC RESERVOIR W/DRIP STAND	MARGO	
** 2	1	D2FWEC	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		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		ROTOR/CALIPER SYMBOL	STOCKBRIDGE	MICO
** 16	1	RCVA	RELIEF VALVE MODULE	PARKER	SUN
*** 17	2	9882K34	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	COMBINATION CHECK VALVE AND NEEDLE VALVE	PARKER	SUN
21	3	EW55	DRIVER BOARD FOR DIRECTIONAL VALVES	PARKER	SUN
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

REVISIONS Date: 1/31/96 By: RMC Description: 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			REVISIONS Date: By: Description:			SEAL: [Signature] 1/31/96			Drawn by: ALC Checked by: LET Designed by: LET Checked by: RMC 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: HYDRAULIC SYSTEM SCHEMATIC PROJECT NAME: BECKETT BRIDGE REPAIRS			SHEET M-7		
---	--	--	--	--	--	---------------------------------	--	--	---	--	--	--	--	--	---	--	--	---	--	--	---------------------	--	--



DEMOLITION PLAN

BY: DSA GROUP, INC. DATE: 05/19/95 09:45:21 A/EV PRODUCED BY DSA CAD SYSTEM

REVISIONS		
Date	By	Description

REVISIONS		
Date	By	Description

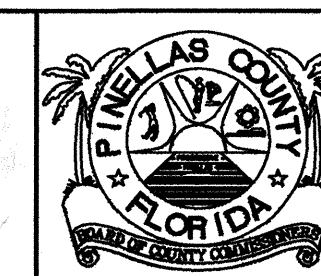
SEAL:

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

R.M. Couret



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



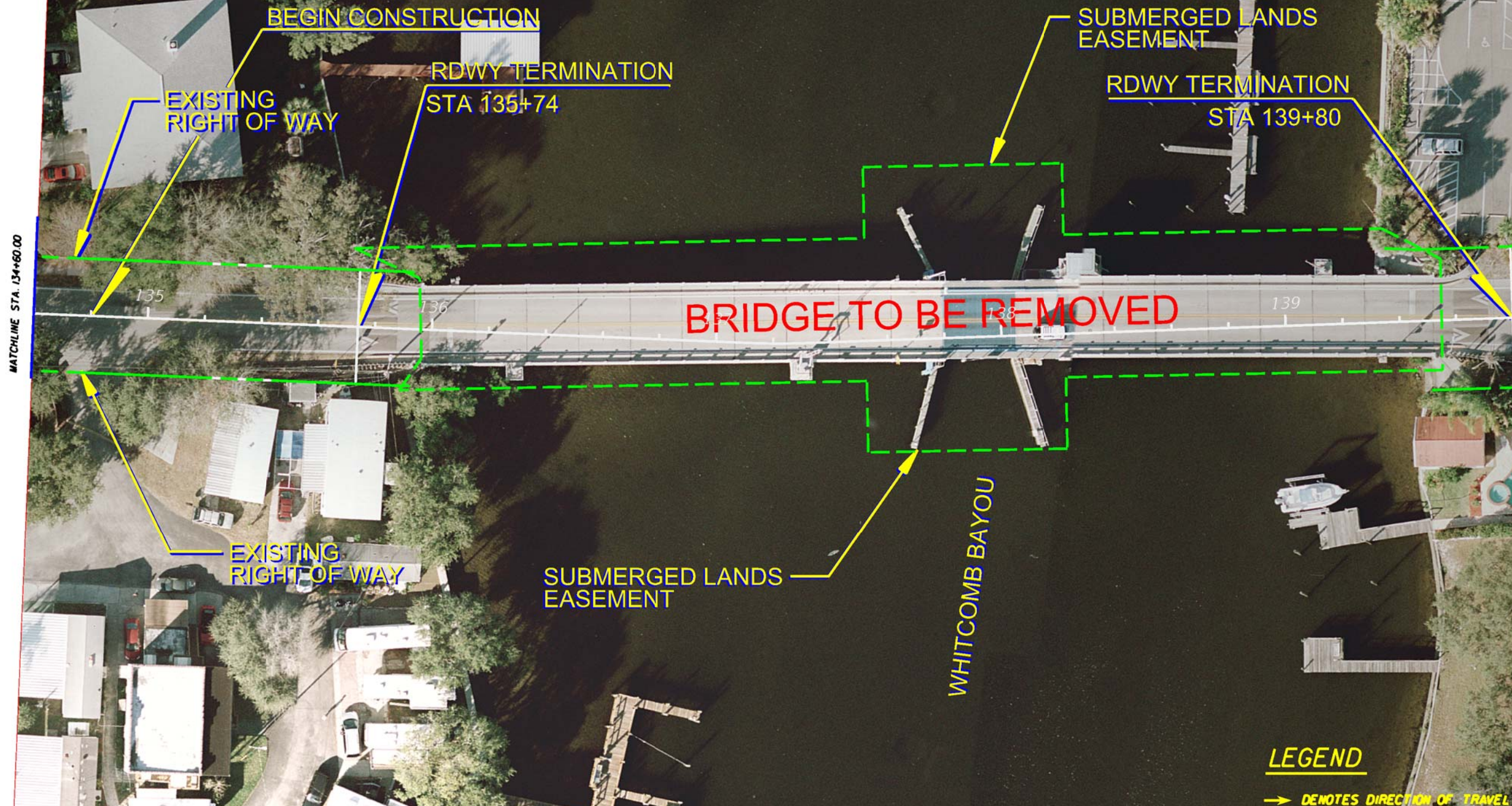
PINELLAS COUNTY
DEPARTMENT OF
PUBLIC WORKS

SHEET TITLE:		SHEET
MACHINERY DEMOLITION		
PROJECT NAME:		M-9
BECKETT BRIDGE REPAIRS		

APPENDIX C:
CONCEPT PLANS AND PROFILES



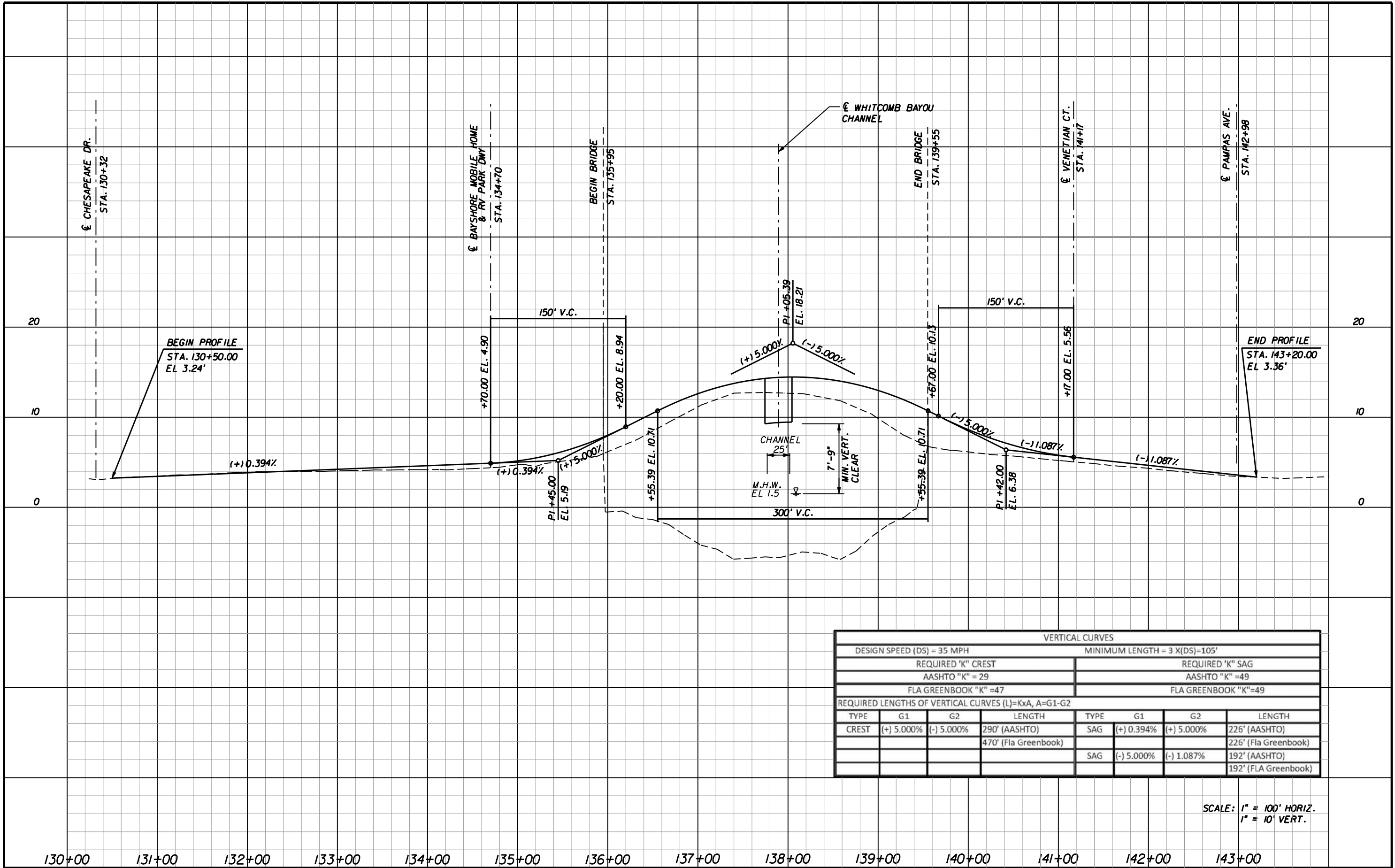
MATCHLINE STA. 134+60.00



**PRELIMINARY
SUBJECT TO CHANGE**







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.



500 N. WESTSHORE BOULEVARD
SUITE 500
TAMPA, FL 33609
CERT. OF AUTHORIZATION #3838



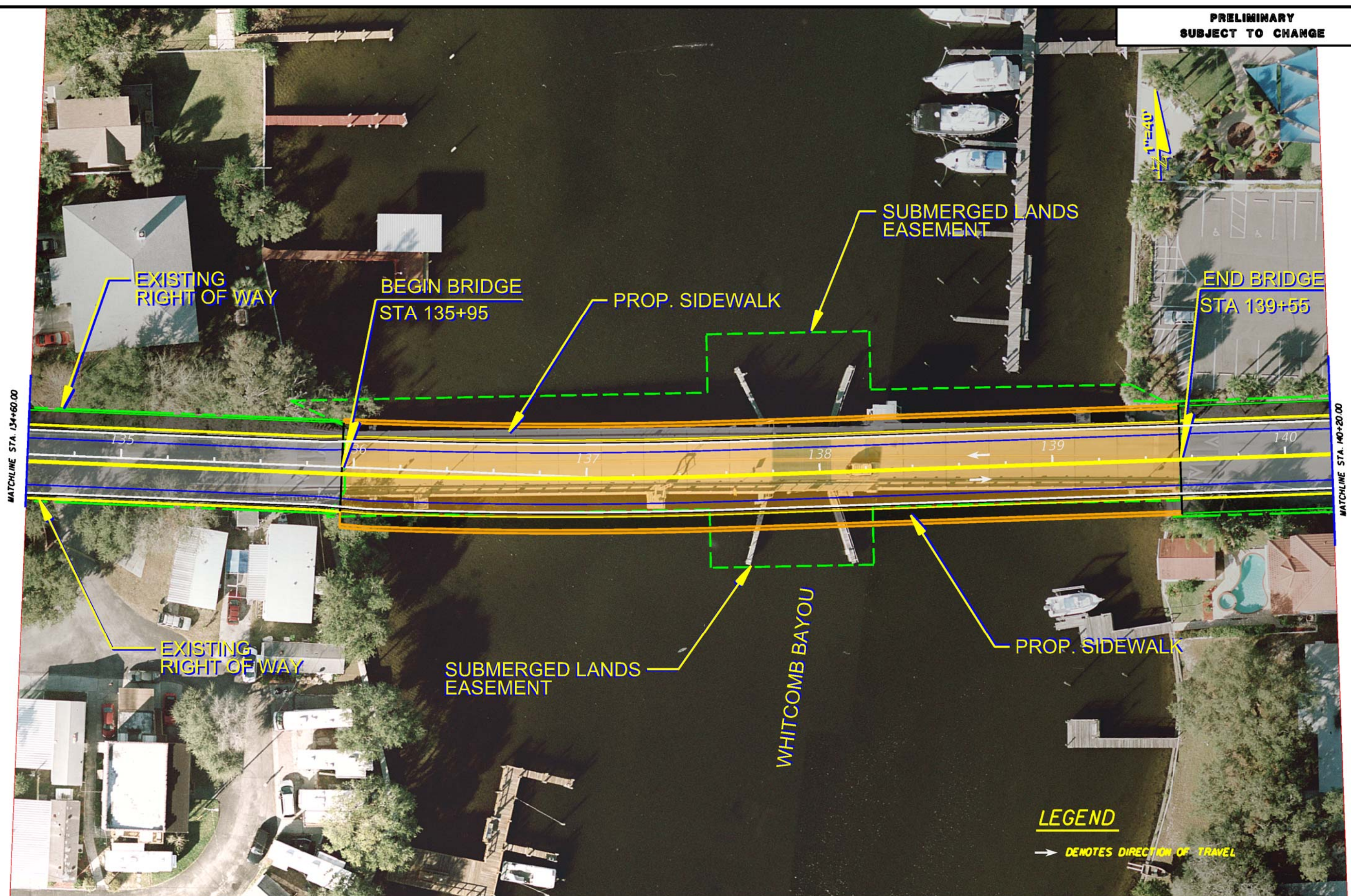
BECKETT BRIDGE (PD&E) STUDY
PINELLAS COUNTY PROJECT NO.: PID 2161

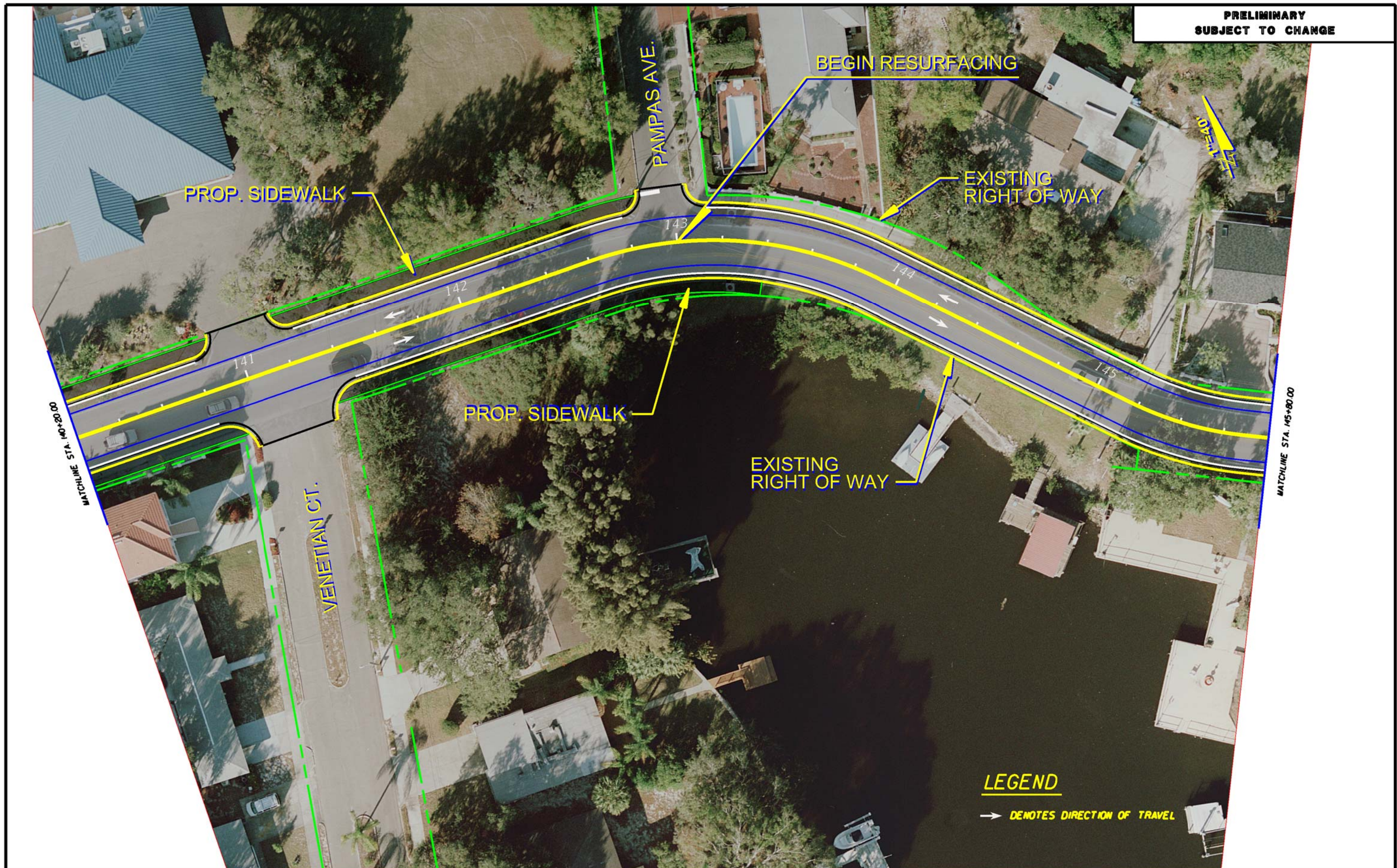
DATE

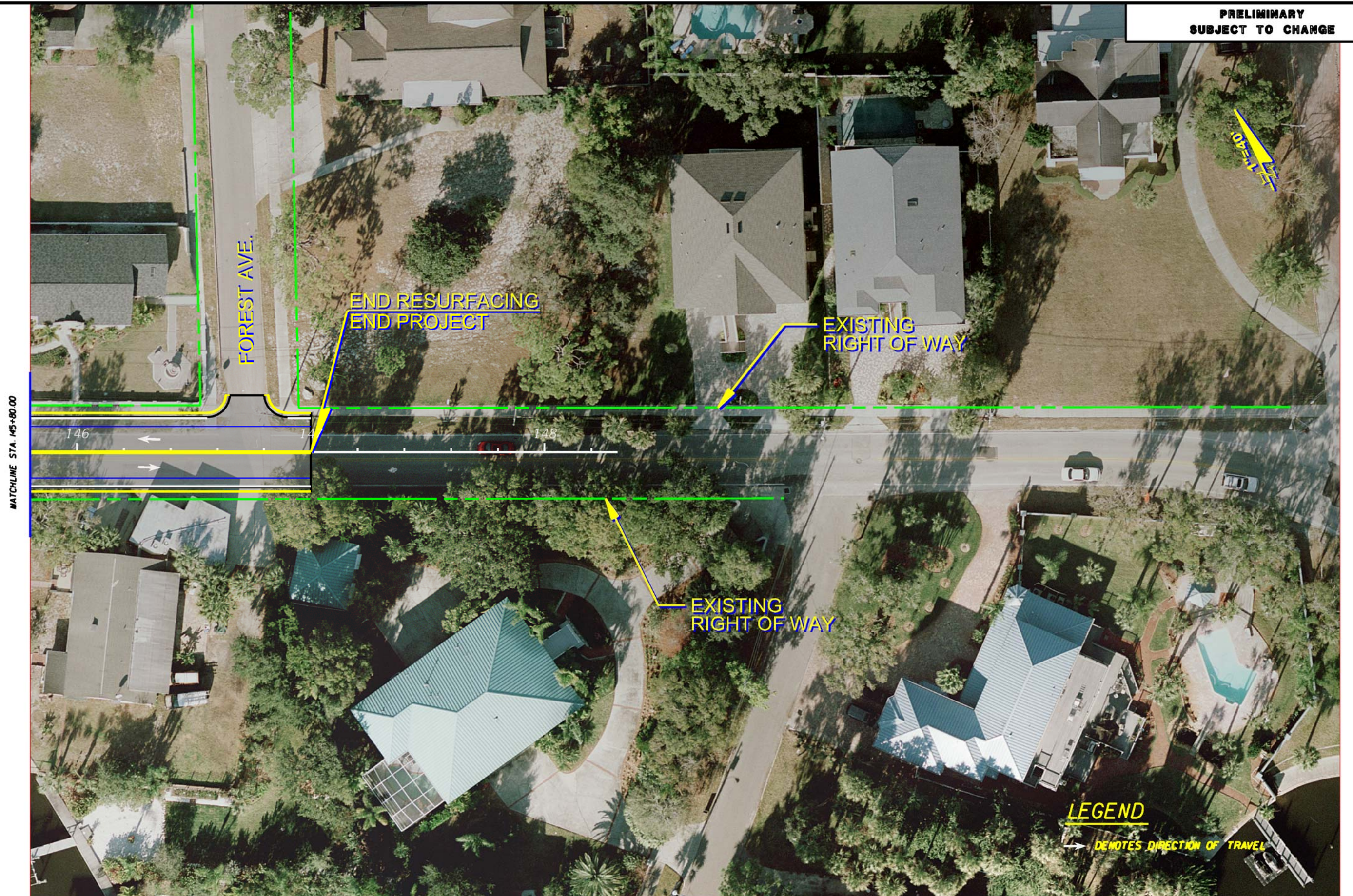
BECKETT BRIDGE PROFILE
LOW LEVEL MOVABLE BRIDGE ALTERNATIVE

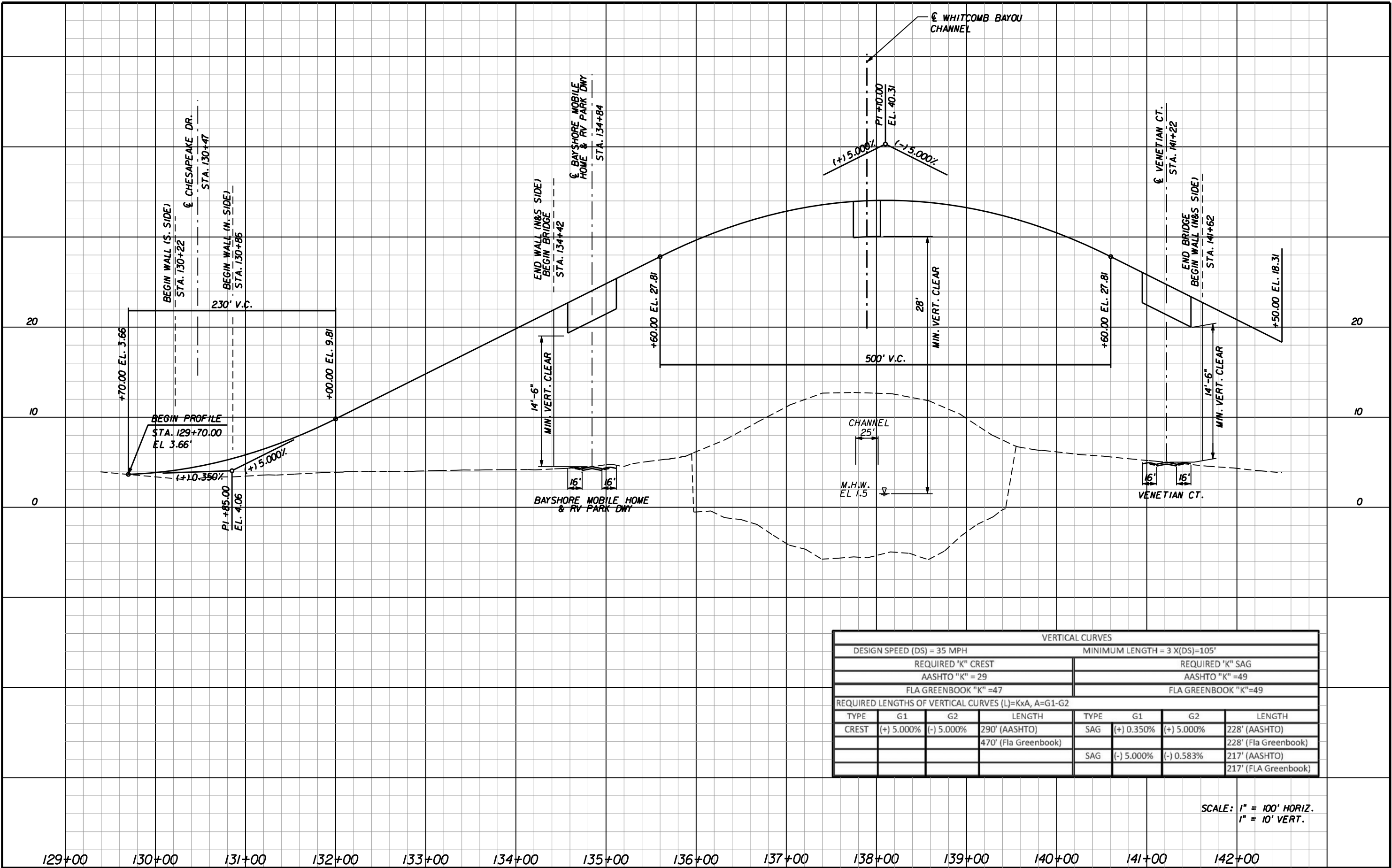
SHEET
NO.











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.



500 N. WESTSHORE BOULEVARD
SUITE 500
TAMPA, FL 33609
CERT. OF AUTHORIZATION #3838



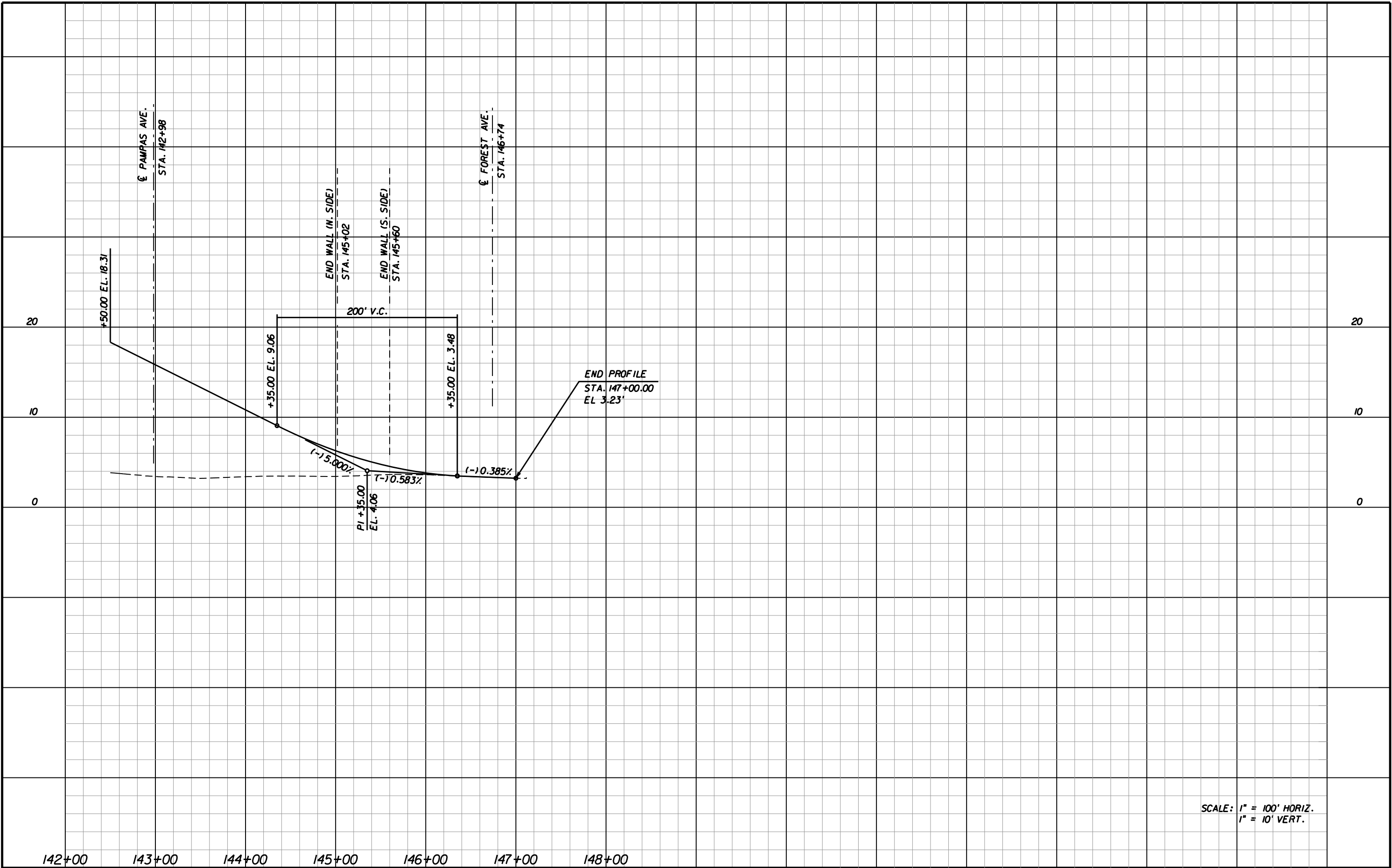
BECKETT BRIDGE (PD&E) STUDY
PINELLAS COUNTY PROJECT NO.: PID 2161

DATE

BECKETT BRIDGE PROFILE
MID-LEVEL FIXED BRIDGE ALTERNATIVE A

SHEET NO.

1



SCALE: 1" = 100' HORIZ.
1" = 10' VERT.



500 N. WESTSHORE BOULEVARD
SUITE 500
TAMPA, FL 33609
CERT. OF AUTHORIZATION #3838



BECKETT BRIDGE (PD&E) STUDY
PINELLAS COUNTY PROJECT NO.: PID 2161

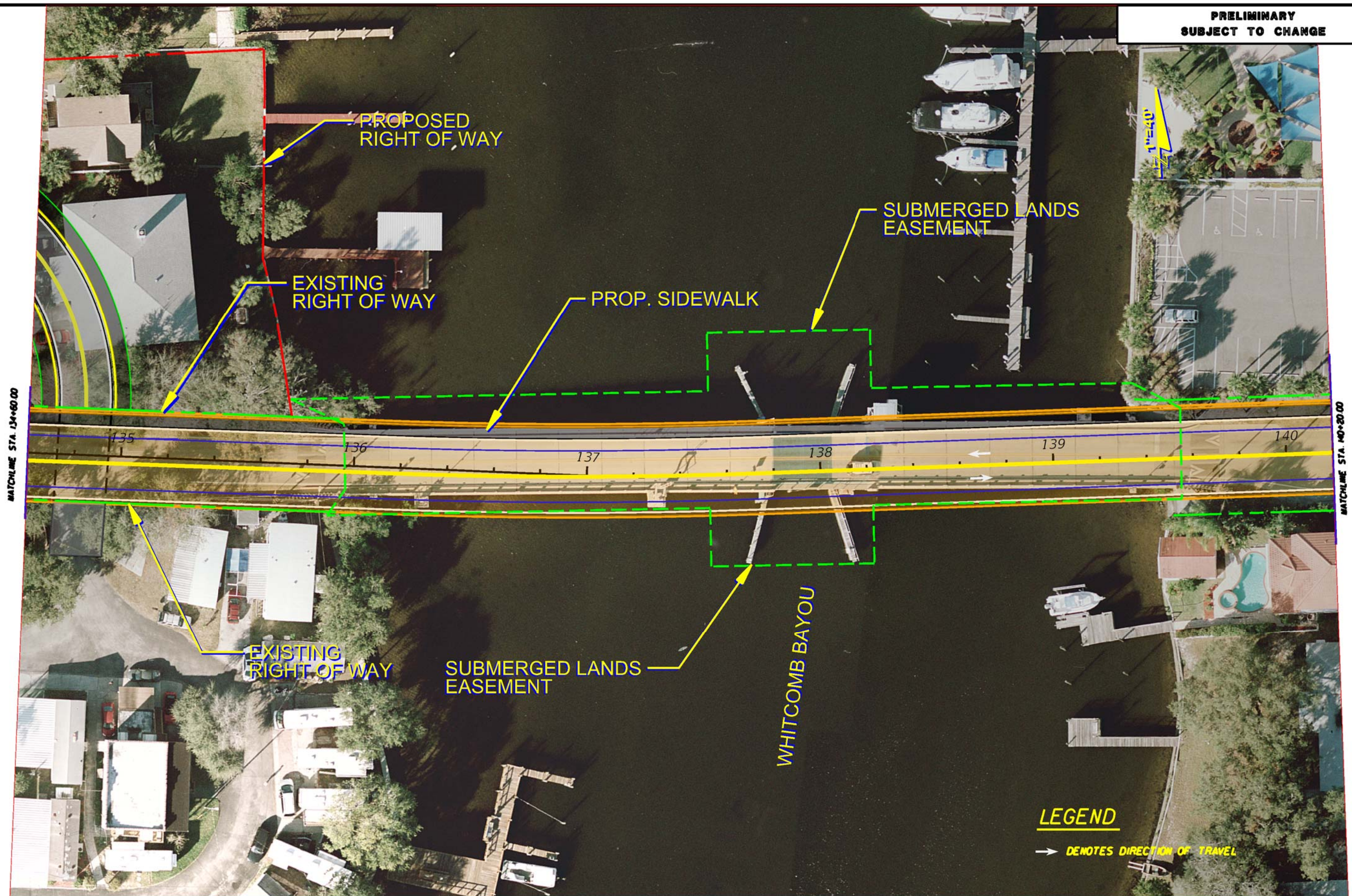
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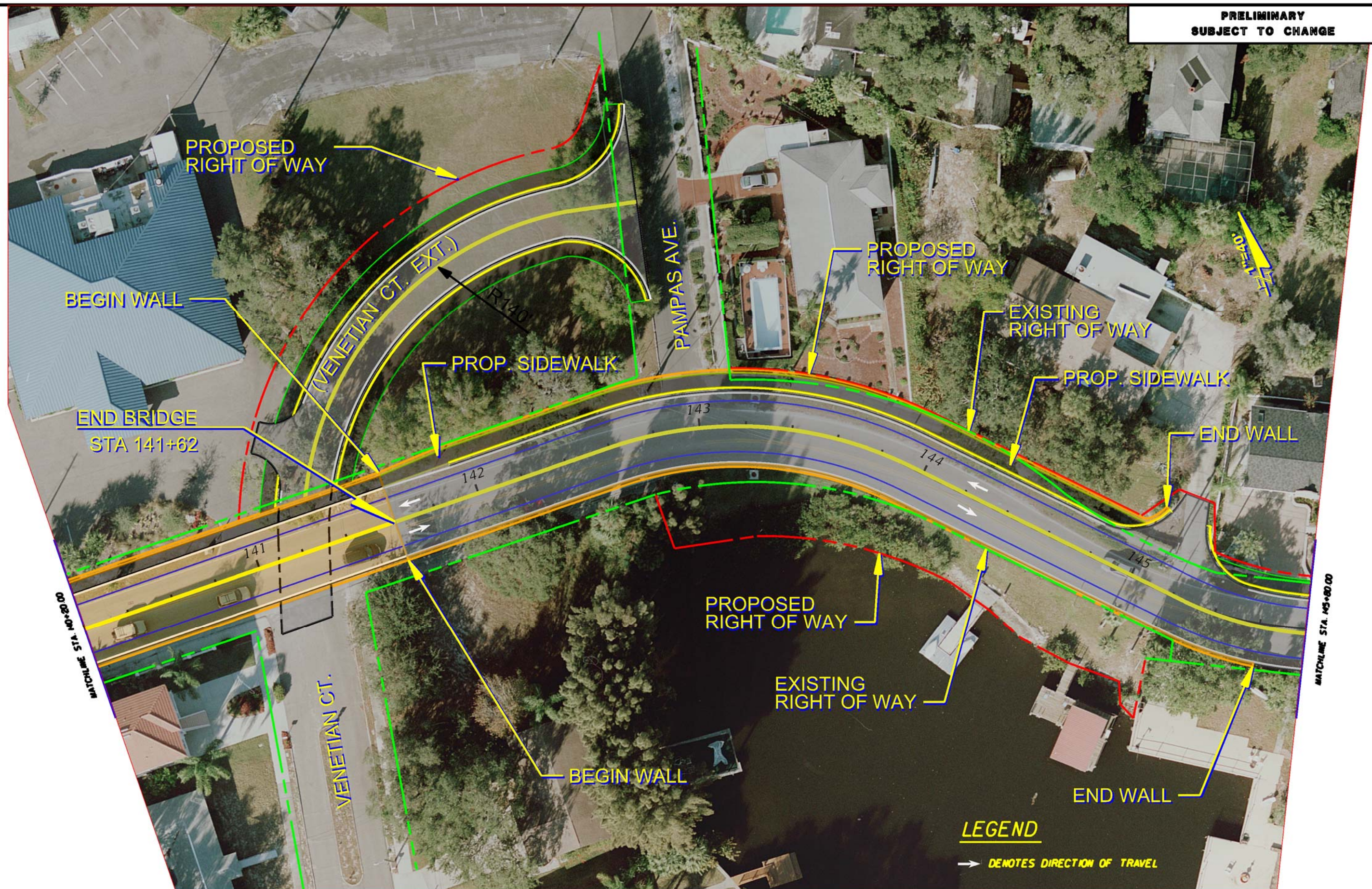
BECKETT BRIDGE PROFILE
MID-LEVEL FIXED BRIDGE ALTERNATIVE A

SHEET
NO.

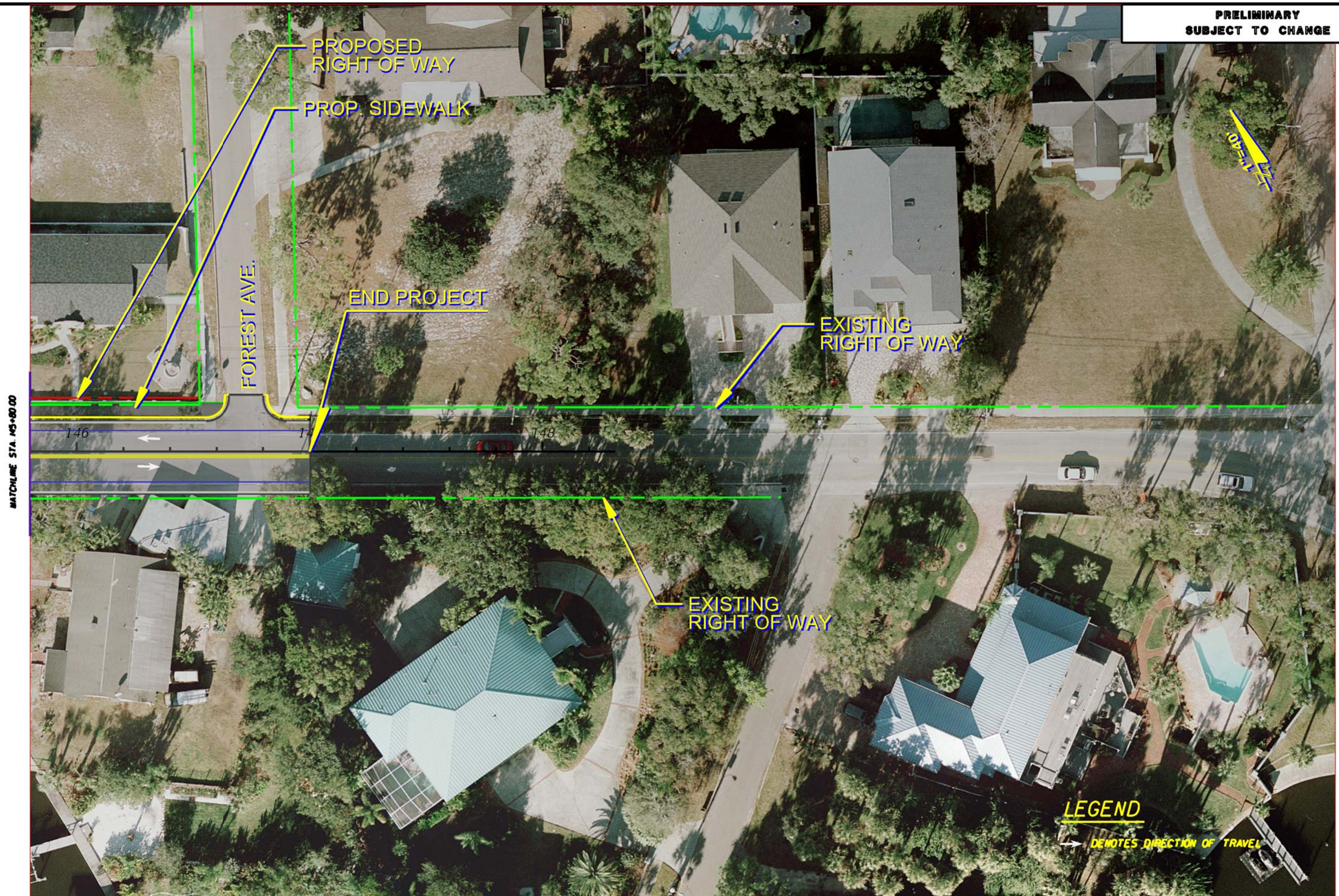
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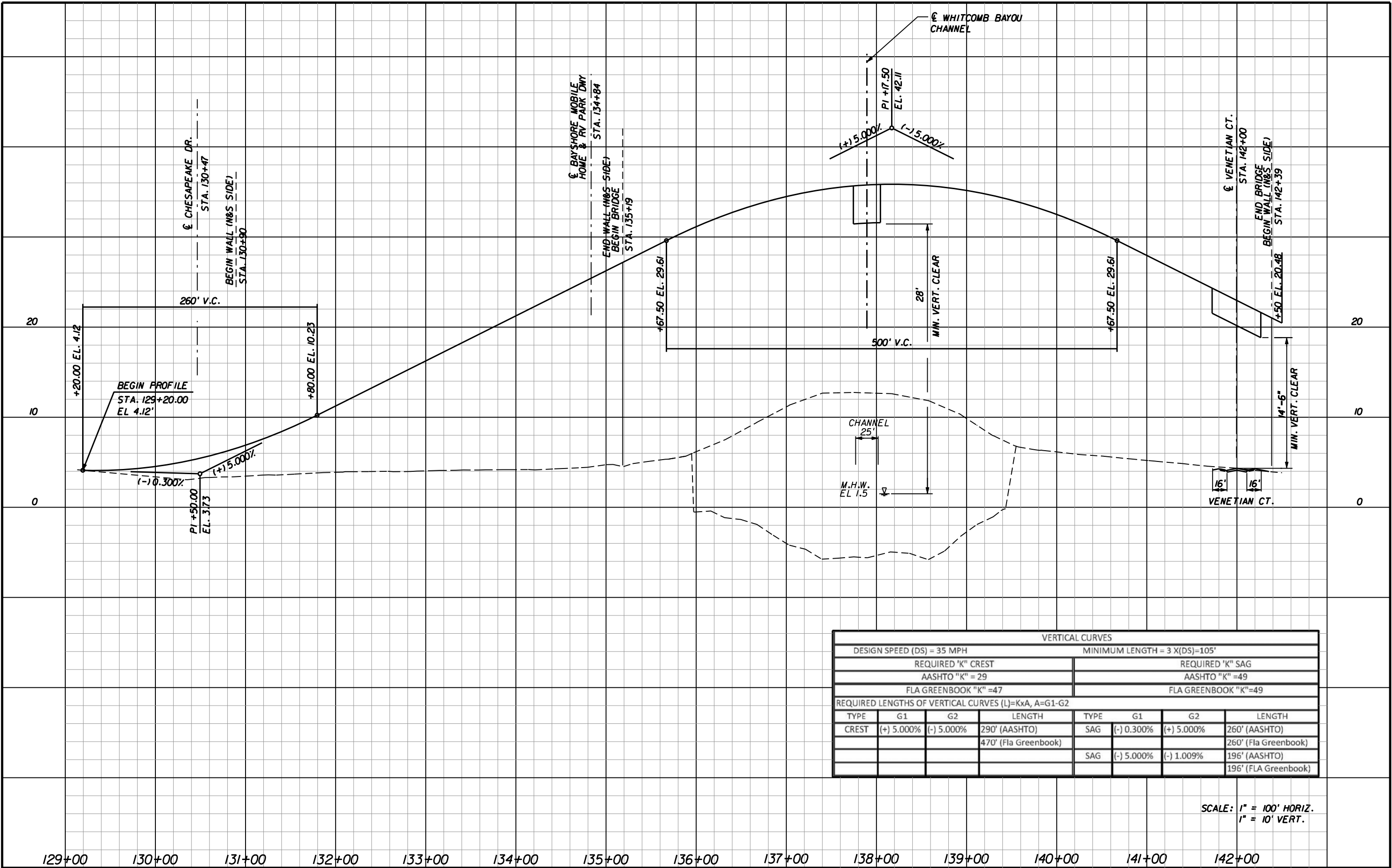






**PRELIMINARY
SUBJECT TO CHANGE**





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.



500 N. WESTSHORE BOULEVARD
SUITE 500
TAMPA, FL 33609
CERT. OF AUTHORIZATION #3838



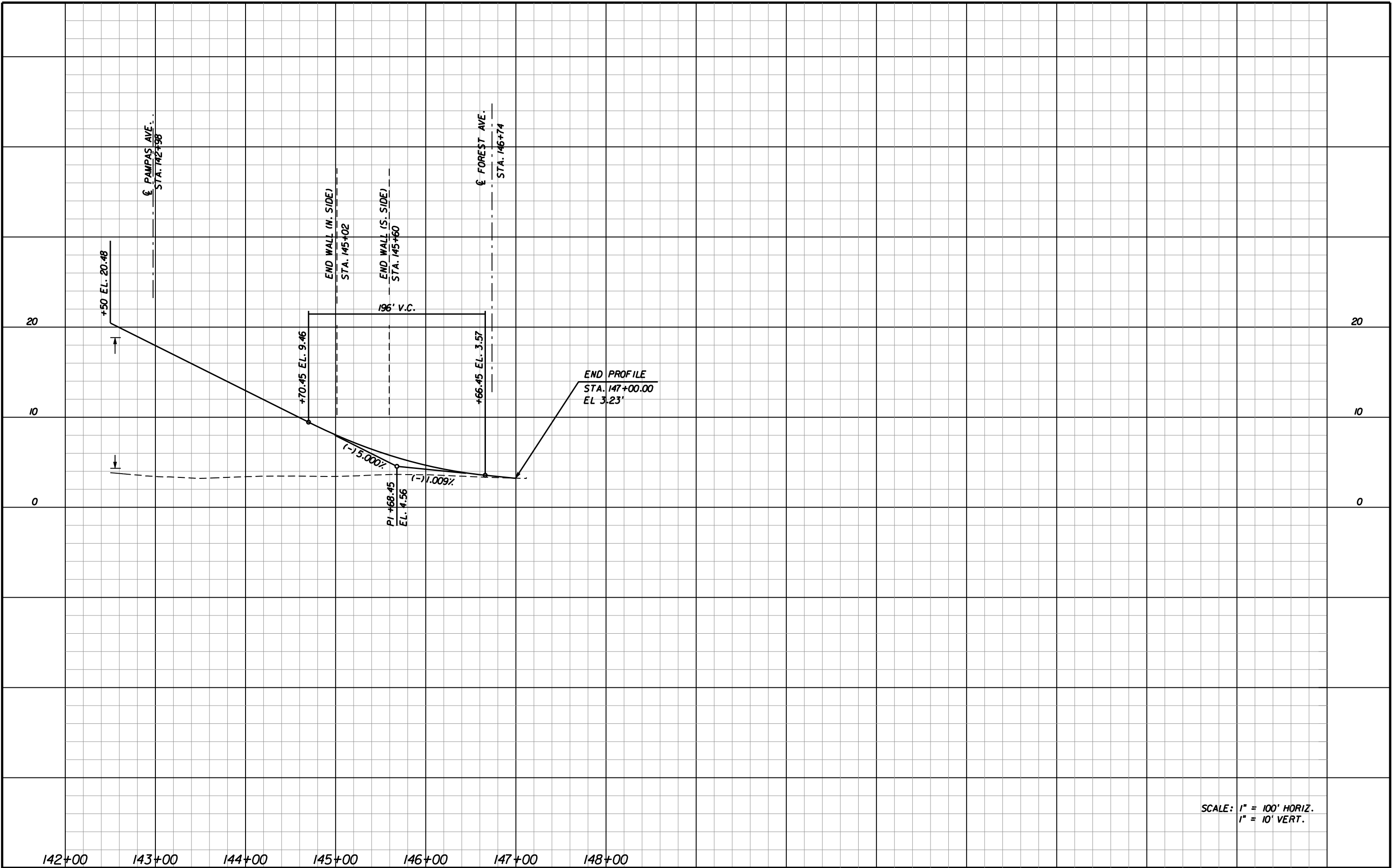
BECKETT BRIDGE (PD&E) STUDY
PINELLAS COUNTY PROJECT NO.: PID 2161

DATE

BECKETT BRIDGE PROFILE
MID-LEVEL FIXED BRIDGE ALTERNATIVE B

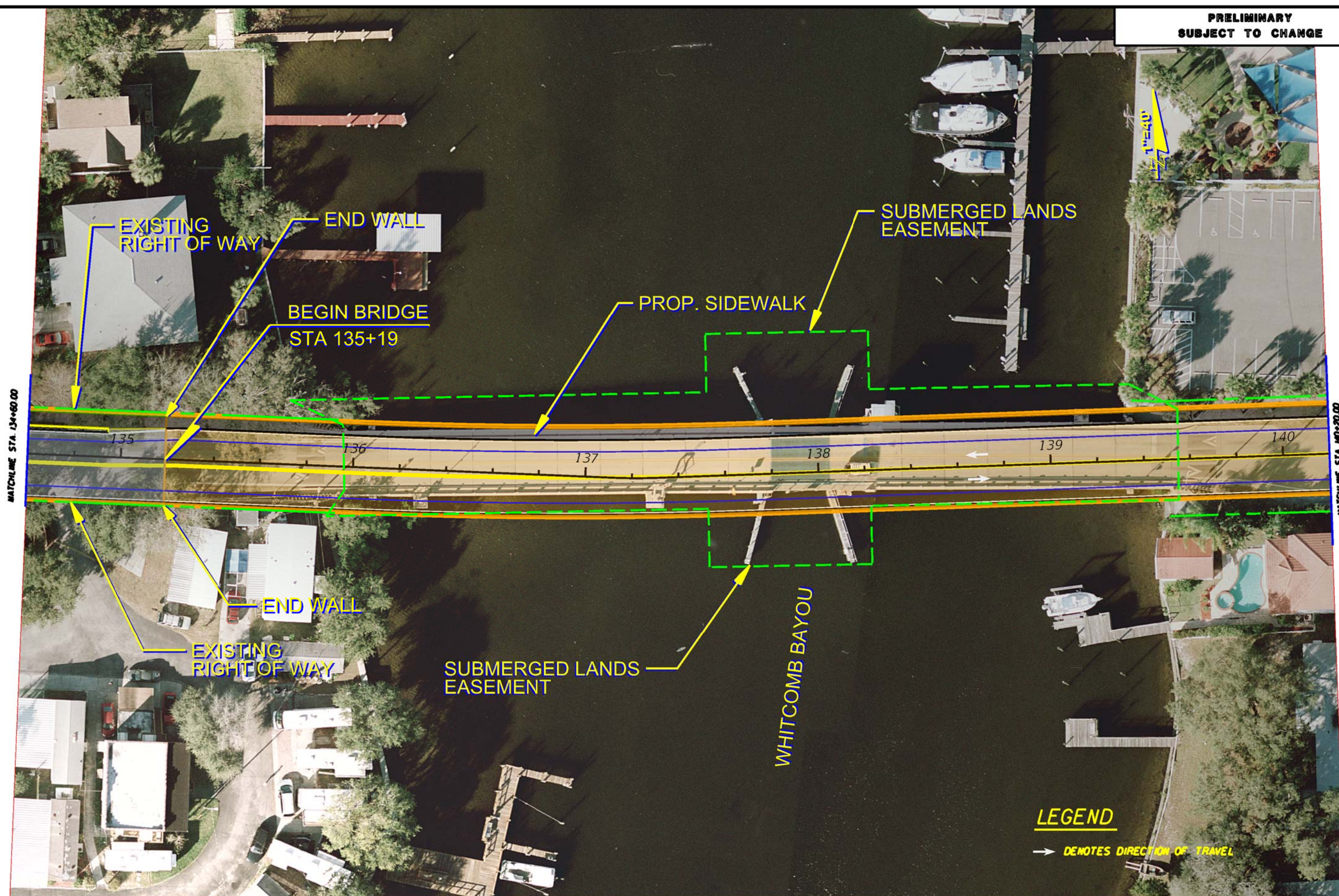
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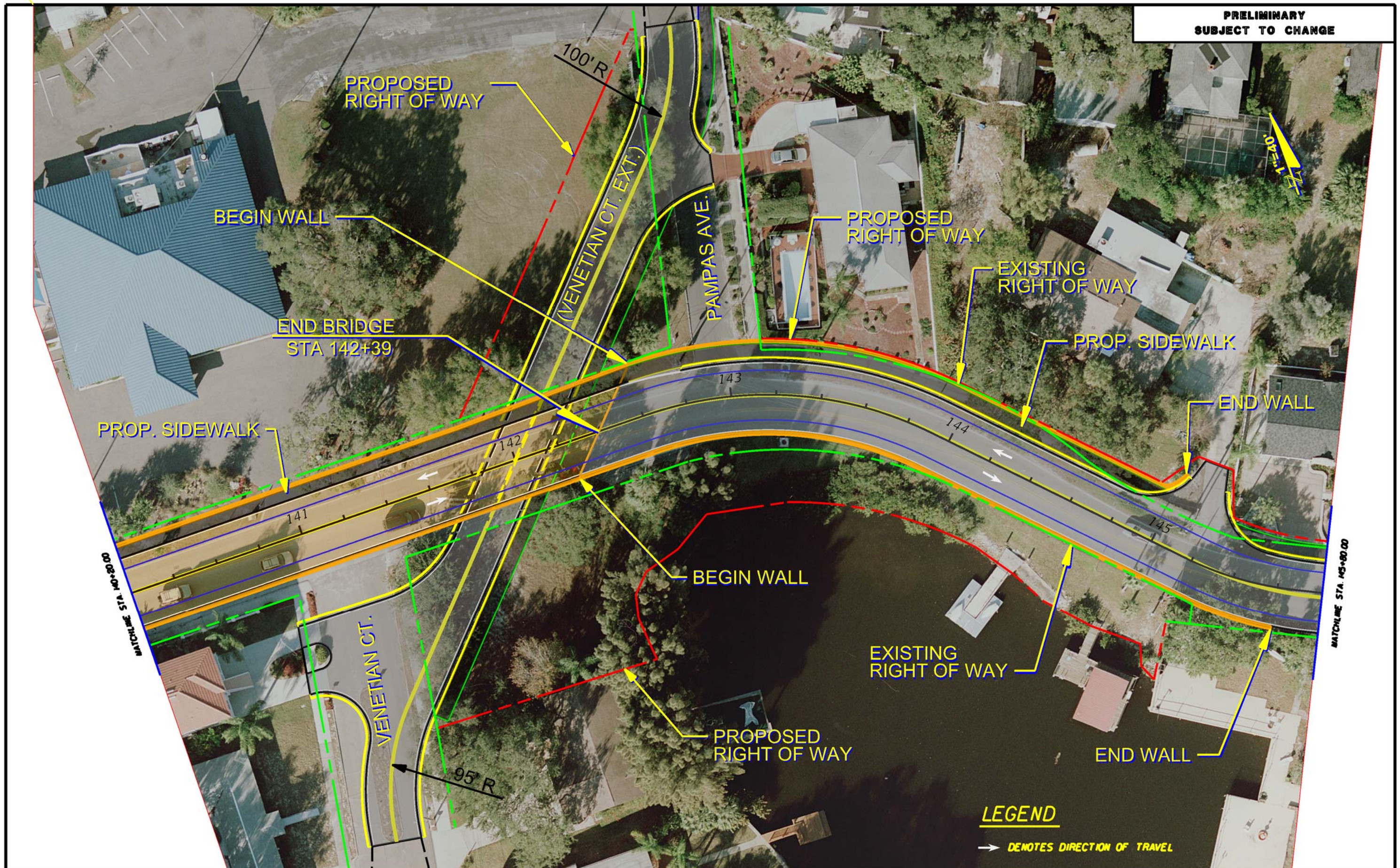
1



SCALE: 1" = 100' HORIZ.
1" = 10' VERT.









APPENDIX D:

SHPO 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 Horrn timer (thornik@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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APPENDIX E:
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) Section 106 Evaluation and Determination of Effects Case Study for Beckett Bridge PD&E from Chesapeake Drive to

Report Title (exactly as on title page) Section 106 Evaluation and Determination of Effects Case Study Report for Beckett Bridge Project Development and Environmental (PD&E) Study from Chesapeake Drive to Forest Avenue, Tarpon Springs, Pinellas County, FL

Report Authors (as on title page, last names first) 1. Janus Research 3. _____
2. _____ 4. _____

Publication Date (year) 2013 **Total Number of Pages in Report** (count text, figures, tables, not site forms) 46

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 Florida Dept of Transportation - District 7

Address/Phone/E-mail 14 South Ft Harrison Avenue, Clearwater, FL 33756

Recorder of Log Sheet Janus Research **Date Log Sheet Completed** 12-26-2013

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 0.26 acres

Number of Distinct Tracts or Areas Surveyed _____

If Corridor (fill in one for each) **Width:** _____ meters 30 feet **Length:** _____ kilometers 0.07 miles

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, uncontrolled ☐ 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.) _____

Newly Recorded Site #'s (Are all originals and not updates? List site #'s without "8". Attach additional pages if necessary.) 8PI2017

Site Forms Used: ☐ Site File Paper Form ☒ Site File Electronic Recording Form

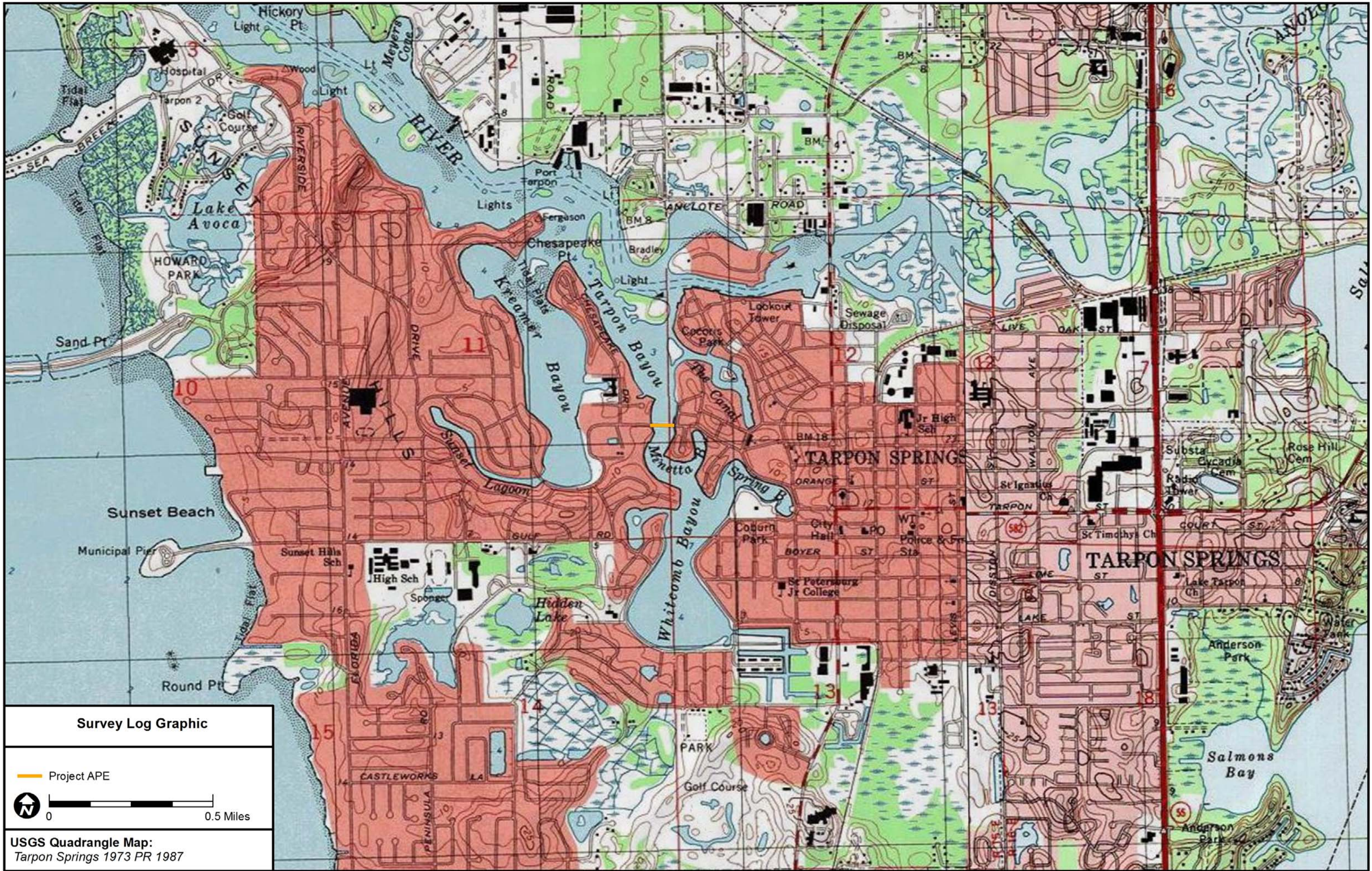
*****REQUIRED: ATTACH PLOT OF SURVEY AREA ON PHOTOCOPY OF USGS 1:24,000 MAP(S)*****

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



USGS Quadrangle Map:
Tarpon Springs 1973 PR 1987