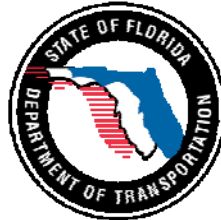


FINAL WETLAND EVALUATION AND BIOLOGICAL ASSESSMENT REPORT

**S.R. 679 (Pinellas Bayway Structure E) at Intracoastal Waterway
Project Development and Environment Study
Pinellas County, Florida**

Work Program Item Segment No: 410755 1



Prepared for:

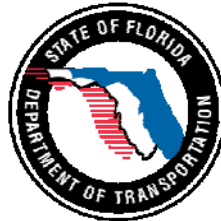
**Florida Department of Transportation
District Seven
11201 North McKinley Drive
Tampa, Florida 33612-6456**

June 2008

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Prepared for:

**Florida Department of Transportation
District Seven
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Prepared by:



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June 2008

EXECUTIVE SUMMARY

The Florida Department of Transportation (FDOT) conducted a Project Development and Environment (PD&E) Study for roadway and bridge improvement alternatives along S.R. 679 (Pinellas Bayway Structure E) at the Gulf Intracoastal Waterway. The project location map (Figure 1-1) illustrates the location and limits of the PD&E Study. The PD&E Study limits encompass the portion of S.R. 679 from south of Madonna Boulevard (milepost 8.366) in Tierra Verde to south of S.R. 682 (milepost 9.454) in Pinellas County, Florida, a distance of 1.0988 miles (mi). Structure E is a low-level bascule structure that spans the Gulf Intracoastal Waterway, a marked federal navigational channel that generally runs between the mainland and the nearly contiguous barrier islands along the Gulf of Mexico.

The PD&E Study documents the need for the improvements, and presents the procedures that FDOT utilized to develop and evaluate various improvement alternatives including rehabilitation and replacement of the existing double-leaf bascule bridge (Bridge Number 150049) known locally as the Tierra Verde Bridge. FDOT collected information relating to the engineering and environmental characteristics essential for alternatives and analytical decisions. FDOT then established design criteria and developed preliminary alternatives. The comparison of alternatives is based on a variety of parameters utilizing a matrix format. This process identified the alternative that would have the least impact, while providing the necessary improvements. The study also solicited input from the community and users of the facility. The design year for the analysis is 2030. Six alternatives were developed and evaluated by the PD&E Study. The Recommended Alternative proposed consists of a high-level, fixed-span replacement bridge over the existing Intracoastal Waterway navigation channel.

The purpose of the Wetland Evaluation and Biological Assessment Report was to determine the impact the proposed project, particularly the Recommended Alternative, may have on surface water and wetland resources and effects to state and federally protected plant and animal species. To assess potential impacts to wetland systems and protected species, a qualified FDOT biologist conducted field evaluations in the winter of 2005/2006 and the spring of 2006.

Five wetland and surface water system types were identified in the project area. As this is a bridge project, the majority of impacts were to surface waters identified as Bays/Estuary (FLUCFCS 540). Mangrove swamps (FLUCFCS 612), shoreline (FLUCFCS 652), salt marsh (FLUCFCS 642), and seagrass (FLUCFCS 911) are the wetland or submerged aquatic communities identified in the project area. The majority of the wetland systems are located on the northern causeway of the bridge. Due to the presence of wetlands and submerged aquatic vegetation (SAV) immediately adjacent to the bridge approaches, particularly at the north end of the project, impacts to wetlands and SAV will be unavoidable.

However, the alignment of the proposed widening of the bridge to the east side of the existing bridge will minimize impacts, particularly to SAV. The anticipated impact from the Recommended Alternative to wetlands and surface waters is 2.59 acres (ac), with 0.06 ac attributable to wetlands and 0.15 ac attributable to SAV. It should be noted that the impacts to surface waters (FLUCFCS 540) includes the entire area of the bay/estuary under the proposed bridge deck although all of that area may not be directly impacted. Wetland impacts resulting from the construction of this project are anticipated to be mitigated pursuant to Section 373.4137 F.S. to satisfy all mitigation requirements of Part IV Chapter 373, F.S. and 33 United States Code 1344. Under Section 373.4137 F.S., mitigation of FDOT wetland impacts will be implemented by the Southwest Florida Water Management District (SWFWMD). The project is currently listed on the FDOT's wetland mitigation inventory, which is provided to the SWFWMD on an annual basis. It is anticipated that FDOT will provide funding to the SWFWMD for implementation of wetland mitigation required for this project.

To determine the occurrence of protected species, the study area was evaluated for suitable habitat for federally protected species by a qualified FDOT environmental scientist. Surveys were then conducted in each habitat type for species known to occur or utilize those habitats. The surveys were performed in the winter of 2005/2006 and the spring of 2006. In addition, random surveys were performed along the corridor for the duration of the study to obtain data on resident and transient species. During these surveys, any evidence of protected species found or direct observations were recorded.

The following federally protected species were identified as potentially occurring within the project area: Gulf sturgeon, smalltooth sawfish, loggerhead turtle, green turtle, leatherback turtle, hawksbill turtle, Kemp's Ridley turtle, piping plover, bald eagle, wood stork and the West Indian manatee.

In addition to the federally protected species, state-only protected species were also identified. These included state-protected wading birds, such as the roseate spoonbill, little blue heron, reddish egret, snowy egret, tricolored heron, and white ibis. The state protected brown pelican, least tern, American oystercatcher, snowy plover, and black skimmer were also identified as potentially occurring in the project area.

The project is anticipated to have "no effect" on the bald eagle and the gulf sturgeon. Bald eagle nests were not identified in the database for the project area or observed in the field. The Gulf sturgeon rarely occurs in the area and spawning activities, the primary concern for its recovery, are within coastal rivers, not bays and estuaries. Due to the minimal and temporary effect to the foraging areas and the lack of suitable nesting areas for the least tern, black skimmer, brown pelican, and American oystercatcher, the project is also anticipated to have no effect on these species.

The remaining species were given a “may affect, not likely to adversely affect” determination. To assure these species will not be adversely affected by the proposed project, the Department will make the following commitments:

- The Department will implement the “Manatee and Sea Turtle Watch Program Guidelines” and “Sea Turtle Construction Conditions” for protection of the five species of marine turtles (green turtle, leatherback turtle, hawksbill turtle, Kemp’s Ridley turtle, loggerhead turtle) potentially occurring in the area. Note that no suitable nesting beaches are found in the project area and protective measures are for turtles in open water only.
- State protected wading birds (i.e., snowy egret, little blue heron, roseate spoonbill, reddish egret, tricolored heron and white ibis) will not be adversely affected because impacts to foraging areas (wetlands) will be compensated for through wetland mitigation efforts.
- The snowy plover and piping plover will not be adversely affected because the minimal impacts to foraging areas will be compensated for through wetland mitigation efforts.
- Impacts to the federally protected wood stork Core Foraging Area (CFA) shall be compensated through the purchase of credits from a U.S. Fish and Wildlife Service-approved mitigation bank or through additional wetland compensation via the FDOT wetland mitigation program. It is also noted that impacts to foraging areas are estimated at less than 0.2 acres.
- “Sea Turtle and Smalltooth Sawfish Construction Conditions” will be implemented to assure that the smalltooth sawfish is not adversely affected by the project.
- “Manatee and Sea Turtle Watch Program Guidelines” will be implemented to assure that the West Indian Manatee will not be adversely impacted by the project.

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Section 1.0

INTRODUCTION

The Florida Department of Transportation (FDOT) conducted a Project Development and Environment (PD&E) Study for roadway and bridge improvement alternatives along S.R. 679 (Pinellas Bayway Structure E) at the Gulf Intracoastal Waterway. The project location map (Figure 1-1) illustrates the location and limits of the PD&E Study.

1.1 PURPOSE

The purpose of the PD&E Study was to provide documented environmental and engineering analyses to assist FDOT and the United States Coast Guard (USCG), the lead federal agency, in reaching a decision as to the type, location, and conceptual design of roadway and bridge improvements to the S.R. 679 crossing of the Gulf Intracoastal Waterway. The PD&E Study also satisfied the requirements of the National Environmental Policy Act (NEPA) and other federal regulations.

The PD&E Study documented the need for the improvements, and presented the procedures FDOT utilized to develop and evaluate various improvement alternatives including rehabilitation and replacement of the existing double-leaf bascule bridge (Bridge Number 150049) known locally as the Tierra Verde Bridge. FDOT collected information relating to the engineering and environmental characteristics essential for alternatives and analytical decisions. FDOT then established design criteria and developed preliminary alternatives. The comparison of alternatives was based on a variety of parameters utilizing a matrix format. This process identified the alternative which would have the least impact, while providing the necessary improvements. The study also solicited input from the community and users of the facility. The design year for the analysis is 2030.

The purpose of the Wetland Evaluation and Biological Assessment Report was to determine the impact the proposed project may have on surface water and wetland resources and effects to state and federally protected plant and animal species.

1.2 PROJECT DESCRIPTION

The PD&E Study limits encompass the portion of S.R. 679 from south of Madonna Boulevard (milepost 8.242) in Tierra Verde to south of S.R. 682 (milepost 9.335) in Pinellas County, Florida, a distance of 1.093 miles (mi). The project is located within Sections 8, 17, and 20, Township 32 South, Range 16 East, and within the Pass-A-Grille Beach United States Geological Survey (USGS) quad map (quad Number 3022).

Structure E is a low-level bascule structure that spans the Gulf Intracoastal Waterway, a marked federal navigational channel which generally runs between the mainland and the nearly contiguous barrier islands along the Gulf of Mexico. S.R. 679 is not part of the National Highway System, the Florida Intrastate Highway System, or the Strategic Intermodal System (SIS); however, the Intracoastal Waterway within the PD&E Study area is on the SIS. In addition, both S.R. 682 and S.R. 679 are designated hurricane evacuation routes by the Florida State Emergency Response Team (SERT).

S.R. 679 was originally constructed in 1961 to join the man-made islands of Tierra Verde with Isla Del Sol in St. Petersburg in Pinellas County. S.R. 679 is a north-south urban minor arterial that provides the only vehicular access to the islands of Tierra Verde and Mullet Key, where Fort Desoto Park is located. S.R. 679 is part of the Pinellas Bayway toll system, which also includes S.R. 682.

Routine bridge inspections have identified some safety and structural problems associated with the age of the existing bridge, including concrete delaminations, spalls, cracks, and other deficiencies. Structure E is functionally obsolete and is rated “scour critical.” It also contains fracture critical elements, meaning that members are subject to tension such that failure could result in collapse of bridge. The service life under normal maintenance conditions is estimated to be 6 years, meaning that under the current normal maintenance program, the bridge will need to be rehabilitated or replaced by year 2011. Improvement alternatives considered for this facility include minor rehabilitation, major rehabilitation (with widening), and replacement with a low-level bascule bridge, a mid-level bascule bridge, or a fixed-bridge.

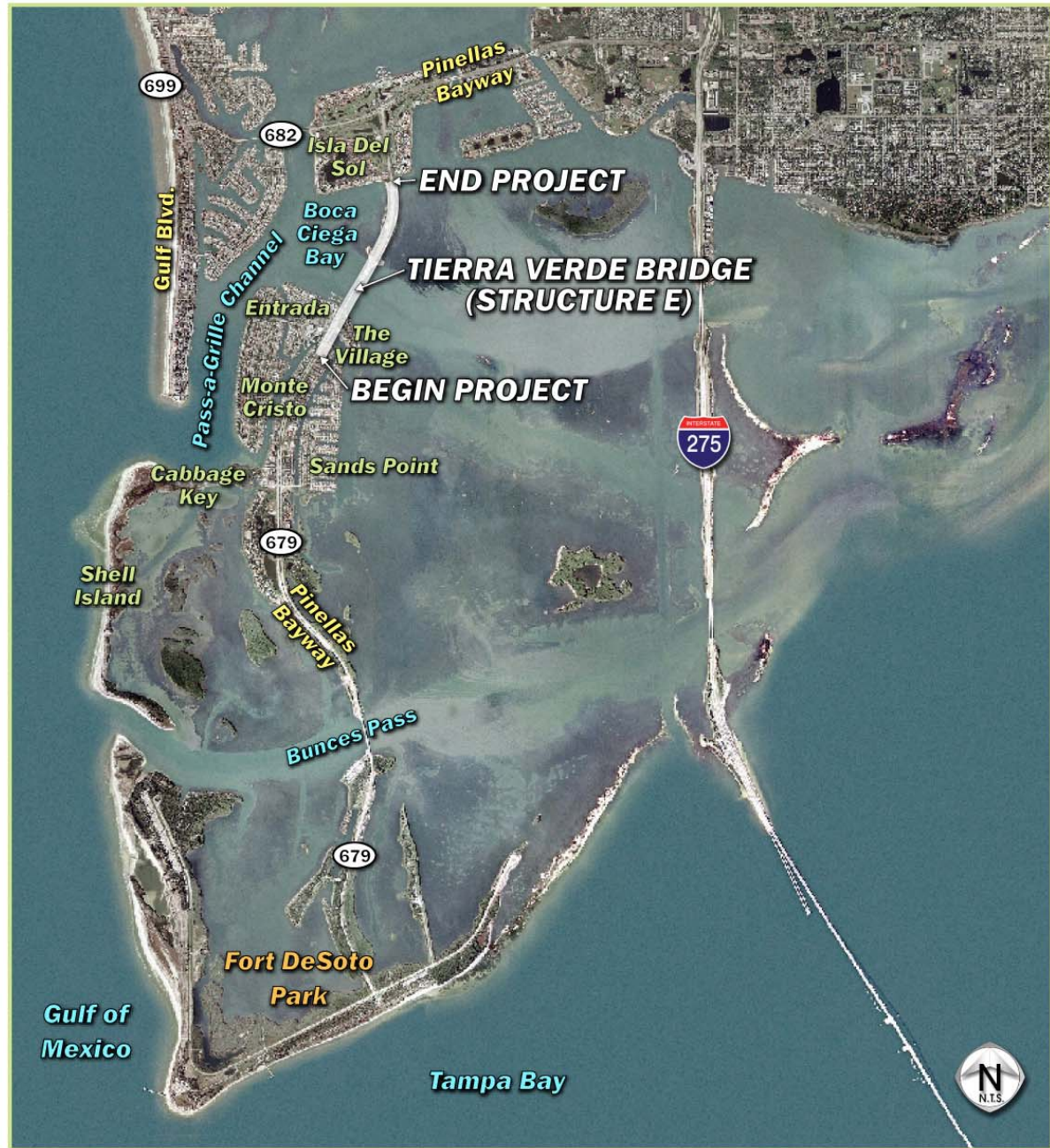
S.R. 679 (Pinellas Bayway Structure E) at Intracoastal Waterway
Bridge No: 150049
Pinellas County, Florida



WPI Segment No : 410755-1

PROJECT LOCATION MAP

Figure 1-1



S.R. 679 (Pinellas Bayway Structure E) at Intracoastal Waterway
Final Wetland Evaluation and Biological Assessment Report

Section 2.0

NEED FOR IMPROVEMENT

2.1 REGIONAL CONNECTIVITY

Structure E (Bridge Number 150049) on S.R. 679 over the Intracoastal Waterway is the only bridge and roadway that provides vehicular access between the mainland and the islands of Tierra Verde and Mullet Key (Fort De Soto Park). S.R. 679 connects to S.R. 682 which runs east-west between Interstate 275 and S.R. 699 (Gulf Boulevard).

2.2 TRANSPORTATION DEMAND

Less than 7 percent of the land area in Pinellas County is currently vacant property suitable for development. This indicates that future growth in the county is expected to be redevelopment and infill development activities. On that basis, the forecasted growth for the barrier islands of Tierra Verde and Mullet Key is expected to be minimal since the community is currently approaching the build-out condition. However, overall county population increases may result in increased usage of the Fort Desoto Park and its recreational facilities, such as the campground and boat ramps. Weekend Average Daily Traffic (WADT) volumes are expected to increase from the existing 2005 WADT volume of 19,300 to the 2030 WADT volume of 23,600. This represents a minimal traffic growth rate, as the islands of Tierra Verde are substantially built-out. Therefore, the need for bridge improvements is not based on capacity needs. The need is based on the structural deficiencies associated with the age of the existing bridge, the functional obsolescence of the bridge, and its scour critical rating.

2.3 STRUCTURAL DEFICIENCIES

The Florida Department of Transportation (FDOT), through routine bridge inspections, has identified safety and structural problems associated with the age of the existing bridge. The structure has numerous cracks and spalls. Severe spalling is located in the deck overhangs and concrete pedestrian railing. Many pile jackets installed during the life of the bridge also show signs of failure. The seawall bulkheads have many spalls and there has been some backfill leakage. The sidewalks and shoulders widths are sub-standard. The guardrails separating the roadway from pedestrians, the concrete post and beam barriers on the fixed spans and the traffic barriers on the bascule spans are all not considered crash-tested barriers and do not meet current structural design standards. The rehabilitation and replacement alternatives for improvements should address these safety and structural issues.

2.4 SAFETY

2.4.1 VEHICLE CRASHES

Review of the vehicle crash data presented in Section 4.0 of this report reveals that the intersection of S.R. 679 with Madonna Boulevard as well as the bridge itself are high crash locations.

2.4.2 NAVIGATIONAL SAFETY

Types of vessels that pass frequently under Structure E include towboats, recreational pleasure and fishing boats, commercial boats, power boats, and sailboats. In addition, the Starlight Princess paddle wheeler and Starlight Majesty have made frequent passes carrying passengers for lunch and dinner cruises. Occasionally, United States Coast Guard (USCG) cutters and tug boats with barges also pass through the channel. A review of data logs provided by the bridge tenders did not indicate a history of boats impacting the bridge or frequent navigational accidents near the bridge.

The USCG guide clearances have been established for the Intracoastal Waterway. They are 21-ft vertical clearance at mean high water (MHW) for drawbridges and 65-ft vertical clearance at MHW for fixed bridges. The horizontal guide clearance is 100 ft between fenders. In comments on the Efficient Transportation Decision Making (ETDM) Programming Screen Summary Report effects to navigation resources, the USCG has established that these clearances will apply to this reach of waterway. The existing horizontal clearance between fenders is 90 ft and the existing vertical clearance when the bridge is closed is 21.5 ft.

2.5 CONSISTENCY WITH TRANSPORTATION PLAN

There are no capacity improvements identified for S.R. 679, including Structure E, in the Pinellas County Metropolitan Planning Organization (MPO) *2025 Long Range Transportation Plan*¹ (2025 LRTP) completed in December 2004 or the *Pinellas County Comprehensive Plan*², which was adopted February 17, 1998, and last amended on December 21, 2004. The Project Development and Environment (PD&E) Study is being conducted due to the structural deterioration of the bridge and potential safety problems.

The 2025 LRTP shows a future designation for S.R. 679 as part of the Pinellas Trail Extension linking the existing Pinellas Trail to the Fort De Soto Park Trail.

2.6 MODAL INTERRELATIONSHIPS

S.R. 679 is not designated as a truck route in the 2025 LRTP and does not provide access to any intermodal facilities or freight activity centers; however, the Intracoastal Waterway within the PD&E Study area is on the Strategic Intermodal System (SIS).

*S.R. 679 (Pinellas Bayway Structure E) at Intracoastal Waterway
Final Wetland Evaluation and Biological Assessment Report*

As explained above, Pinellas County is planning a multi-use path along S.R. 679, which would accommodate pedestrians and bicyclists.

There is currently no bus or fixed-route transit service along S.R. 679. The closest existing bus route is Route 90 which travels along 54th Avenue South /S.R. 682 from east St. Petersburg to St. Pete Beach. The Pinellas County MPO 2025 LRTP indicates that there are no plans to implement transit (bus, rail, trolley, etc) along S.R. 679.

Coordination with Port Manatee, the Port of Tampa and the Port of St. Petersburg indicated that commercial vessel traffic bound to or from these ports does not use the Intracoastal Waterway at this location.

2.7 HURRICANE EVACUATION

S.R. 679 is designated as a hurricane evacuation route for the residential, commercial, and recreation area south of the project. Structure E is the only bridge linking the Tierra Verde and Mullet Key area to the mainland. These areas lie within Evacuation Level A, which is evacuated in the event of a Category 1 hurricane. According to the *Pinellas County Public Works Preparedness and Recovery Plans and Procedures Hurricane Manual*³, “S.R. 679 is considered a priority to maintain uninterrupted flow of traffic upon notice of an evacuation. Emergency repairs to the roadway and bridge will be made in conjunction with removal of debris causing any restrictions in the flow of evacuating traffic.”

While Structure E currently accommodates hurricane evacuation and recovery activities, the evacuation time, reliability, and efficiency of the evacuation activities can be improved with rehabilitation or replacement of the bridge. Furthermore, the addition of shoulders on a replacement structure provides an area for inoperable vehicles to be removed from the traffic stream during an emergency.

2.8 TRANSIT

Currently, no fixed route service exists within the PD&E Study area and no transit improvements are proposed as a part of this project.

Section 3.0

VIABLE ALTERNATIVES

Improvement alternatives considered for this facility include rehabilitation and bridge replacement with a new bascule bridge or a new fixed-span bridge. The alternatives considered are summarized below. Concept plans for each of the bridge replacement alternatives are provided in Appendix A. For more information on each alternative, see the Preliminary Engineering Report (PER).

3.1 ALTERNATIVE 1 – REHABILITATION

The Rehabilitation Alternative is the repair and rehabilitation of the existing bridge in its existing design configuration to keep the bridge operating in a safe condition, maintaining the existing typical section. In order for vehicular traffic to be maintained at all times during construction activities, a temporary bridge is proposed on the east side of the existing bridge, to be removed upon completion of the rehabilitation activities. Temporary roadway approaches would also be constructed and removed.

3.2 ALTERNATIVE 2 – REHABILITATION WITH WIDENING

The Rehabilitation with Widening Alternative includes repair, rehabilitation, and widening of the existing bridge to the east to accommodate a cross section that meets current Florida Department of Transportation (FDOT) geometric design requirements and standards. The proposed typical section features two 12-foot (ft) lanes separated by a 4-ft striped median, two 10-ft shoulders, and two 5-ft (minimum) sidewalks separated from the shoulder by a barrier wall. In essence, the widening consists of construction of a separate new bascule bridge, with its own separate mechanical and electrical systems, immediately adjacent to the existing bridge. The striped median would be incorporated into the cross section to move the northbound vehicular outboard wheel line off the longitudinal joint associated with the tail of each new leaf.

Complete rehabilitation of all the same components and systems of the existing bridge is also included. Vehicular traffic can be maintained at all times during construction activities without a temporary bridge by using the extra width of the widened bridge. As with the Rehabilitation Alternative, the initial concrete repairs, mechanical and electrical system replacement, scour countermeasures, and all new construction would be completed by 2011.

3.3 ALTERNATIVE 3 – LOW-LEVEL BASCULE BRIDGE REPLACEMENT

This concept proposes building a new bascule bridge with a minimum vertical navigational clearance of 21.5 ft at the timber fenders when the bridge is closed. The horizontal clearance between fenders is 100 ft. The proposed typical sections for the bascule bridge and fixed approaches to the replacement bascule bridge include one 12-ft lane and a 10-ft shoulder in each direction. A 5-ft sidewalk is included on the west side, separated from the shoulder by a concrete barrier wall.

An 11-ft sidewalk is provided on the east side to accommodate a planned multi-use path. A 4.5-ft high pedestrian/bicycle railing will be provided on the outside. The overall width of the fixed span is 65 ft, while the bascule bridge width is 63 ft 8 inches (in). The proposed design speed is 50 miles per hour (mph).

3.4 ALTERNATIVE 4 – MID-LEVEL BASCULE BRIDGE REPLACEMENT

This concept proposes a replacement bascule bridge with a minimum vertical navigation clearance of 45 ft and a horizontal clearance of 100 ft. This height would allow approximately 45 percent of the waterway users that currently require the bridge to open to pass without an opening. The proposed typical section includes one 12-ft lane, a 10-ft shoulder, and a 6-ft sidewalk in each direction. The overall width of the fixed span is 61 ft, while the bascule bridge width is 59 ft 8 in. The proposed design speed is 50 mph.

3.5 ALTERNATIVE 5 – HIGH-LEVEL FIXED BRIDGE REPLACEMENT OVER EXISTING CHANNEL

This concept proposes a high-level, fixed-span replacement bridge over the existing Intracoastal Waterway navigation channel. The vertical navigational clearance will be 65 ft, which would allow over 99 percent of waterway users to pass under the bridge. The horizontal clearance between fenders is 100 ft. The proposed typical section includes one 12-ft lane and a 10-ft shoulder in each direction. A 5-ft sidewalk is included on the west side, separated from the shoulder by a concrete barrier wall. An 11-ft sidewalk is provided on the east side to accommodate a planned multi-use path. The overall width of the fixed span is 65 ft. The proposed design speed is 50 mph.

3.6 *ALTERNATIVE 6 – HIGH-LEVEL FIXED BRIDGE REPLACEMENT OVER RELOCATED CHANNEL*

This concept proposes a high-level, fixed-span replacement bridge over the relocated Intracoastal Waterway navigation channel, 400 ft to the north of its existing location. The vertical navigational clearance will be 65 ft, which would allow over 99 percent of waterway users to pass under the bridge. The horizontal clearance between fenders is 100 ft. The proposed typical section includes one 12-ft lane and a 10-ft shoulder in each direction.

A 5-ft sidewalk is included on the west side, separated from the shoulder by a concrete barrier wall. An 11-ft sidewalk is provided on the east side to accommodate a planned multi-use path. The overall width of the fixed span is 65 ft. The proposed design speed is 50 mph.

3.7 *RECOMMENDED ALTERNATIVE*

The Recommended Alternative is Alternative 5. Preliminary concept plans are provided in Appendix A for each alternative.

Section 4.0

NATURAL COMMUNITIES

4.1 UPLAND COMMUNITIES

The project corridor consists of the Pinellas Bayway (S.R. 679) Bridge, which spans the main channel between Tampa Bay and Pass-A-Grille Channel. The southern terminus of the bridge has a concrete seawall with sand and scattered riprap seaward of the bulkhead. The upland portion of the project at the southern terminus is comprised of fill material used to create the island (Tierra Verde). The northern terminus has a concrete seawall bordering both sides of the artificial causeway leading up to the bridge. The upland area associated with the northern terminus is comprised of grassed areas [bahia grass and crow foot grass (*Dactyloctenium aegyptium*)] with scattered fan palms (*Washingtonia robusta*) and cabbage palms (*Sabal palmetto*). Brazilian pepper (*Schinus terebinthifolius*) and castor bean (*Ricinius communis*), nuisance exotic species, are also found in the upland area abutting the bridge. The upland areas within and adjacent to the project corridor provide minimal to no foraging or nesting habitat for wildlife species.

4.2 WETLAND COMMUNITIES

In accordance with Executive Order 11990 “Protection of Wetlands” (May 1977), the proposed project was evaluated for potential impacts to wetlands. Wetland and surface water systems receive federal protection through provisions in the Clean Water Act (1972) and the Section 10 of the Rivers and Harbors Act (1899). The State of Florida also provides protection to wetlands (Chapter 373 Florida Statutes [F.S.]).

In order to determine the real extent of wetlands affected by the proposed project, extensive evaluations of existing data and field reviews were performed. The following section presents the methodology used for identification and mapping of wetlands, an analysis of wetland functions and values, impacts proposed by the project and permitting requirements.

4.2.1 WETLAND EVALUATION METHODOLOGY

To assess potential impacts to wetland systems, a qualified Florida Department of Transportation (FDOT) biologist conducted field evaluations in the winter of 2005/2006 and the spring of 2006. In order to determine the approximate locations and boundaries of existing wetland communities within the project study area, available site-specific data were collected, reviewed and analyzed using the following information:

- United States Department of Agricultural, Natural Resources Conservation Service (NRCS), Pinellas County Soil Survey
- United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) Maps
- United States Geological Survey (USGS), Topographic Quadrangle maps, 7.5-minute series, Pass-A-Grille Map
- Southwest Florida Water Management District (SWFWMD) Land Use Maps (1995) based on the FDOT Florida Land Use, Cover and Forms Classification System (FLUCFCS), (third ed. 1999)
- USFWS Classification of Wetlands and Deepwater Habitats of the United States, 1979
- Aerial Photographs of the study area at 1 inch (in) to 100 feet (ft) scale

Using the above information, the approximate boundaries of wetland communities were mapped on black and white aerials. Since both the SWFWMD and NWI mapping are conducted at a relatively coarse level of spatial accuracy (1:24,000 scale), more accurate wetland maps were created based on field reviews and aerial photo-interpretation using the 1:100 scale photography. Each wetland community was then labeled using the FLUCFCS and NWI classification systems. Ground-truthing of wetland boundaries was accomplished by implementing the State of Florida wetland delineation methodology (Florida Administrative Code [(F.A.C.] 62-340) and the United States Army Corps of Engineers (USACE) methodology (*Corps of Engineers Wetlands Delineation Manual*).

A list of land use types was developed using the FDOT *Florida Land Use, Cover, and Forms Classification System* codes. This system was applied during the field mapping process to distinguish wetland types (Table 4-1). Exotic plant infestations, hydrologic conditions, shifts in historical plant communities, and any other disturbances, such as canals, power lines, etc. were noted. Attention was also given to identifying wildlife and signs of wildlife usage at each wetland and adjacent upland habitat.

4.2.2 *EXISTING WETLAND AND SURFACE WATER SYSTEMS*

Five wetland and surface water systems were identified in the project area, and are described in detail in the following section. These areas were mapped onto the Concept Plans (Appendix A) and evaluated for ecological quality. Table 4-1 summarizes the FLUCFCS codes and USFWS codes for these five systems. A total of 6.9 acres of wetland exist within the project area. Seagrass beds are located within the project corridor, but their acreage is not included in this estimate. Although the boundary of the

seagrass beds are known, detailed seagrass surveys are recommended during design to more accurately locate and quantify the amount of seagrass within those boundaries.

**Table 4-1
Natural Land Use Types and Area within S.R. 679
(Pinellas Bayway Structure E)**

FLUCFCS CODE	FLUCFCS DESCRIPTION	USFWS CODE	USFWS DESCRIPTION
540	Bays and Estuaries	E1UB	Estuarine, Subtidal, Unconsolidated Bottom
612	Mangrove Swamps	E2SS3P	Estuarine, Tidal, Scrub-Shrub, Broad-Leaved Evergreen, Irregularly Flooded
642	Saltwater Marshes	E2EM1P	Estuarine, Tidal, Emergent, Persistent, Irregularly Flooded
652	Shorelines	E2US2N/P	Estuarine, Tidal, Unconsolidated Shore, Sand, Regularly Exposed/Irregularly Flooded
911	Seagrass	E2AB3M	Estuarine, Tidal, Aquatic Bed, Rooted Vascular, Irregularly Exposed

**FLUCFCS =Based on Florida Land Use Cover Forms Classification System², third ed. 1999.*

***USFWS = Based on US Fish and Wildlife Service Classification of Wetlands and Deepwater Habitats of the United States, 1979.*

4.2.2.1 Bays and Estuaries

FLUCFCS – 540 (Bays and Estuaries)

USFWS – E1UB (Estuarine, Subtidal, Unconsolidated Bottom)

Surface water categories are represented in the project area as bays and estuaries. Bays and estuaries comprise approximately 35.9 acres of the project area. The project is located within Boca Ciega Bay, classified as an Aquatic Preserve and Outstanding Florida Water (OFW) under section 62-302.700, F.A.C., and afforded protection under sections 62-4.242(2) and 62-302.700, F.A.C. Direct impacts to this surface water must be demonstrated clearly to be in the public interest as part of the Environmental Resource Permit (ERP) application process. The project spans the Pass-A-Grille Channel, a navigable waterway under the jurisdiction of the United States Coast Guard (USCG) and a Federal Channel under the jurisdiction of the USACE. The submerged lands of Boca Ciega Bay are also sovereign state lands, requiring a public easement from the Florida

Department of Environmental Protection (FDEP) Board of Trustees of the Internal Improvement Trust Fund (TIITF).

4.2.2.2 Mangrove Swamps

FLUCFCS – 612 (Mangrove Swamps)

USFWS – E2SS3P (Estuarine, Tidal, Scrub-Shrub, Broad-Leaved Evergreen, Irregularly Flooded)

Mangrove swamps are a coastal, hardwood community composed primarily of red mangroves (*Rhizophora mangle*) and black mangroves (*Avicennia germinans*). The major associates in this area include white mangroves (*Laguncularia racemosa*), buttonwoods (*Conocarpus erectus*), sea myrtle (*Baccharis halimifolia*), and marsh elder (*Iva frutescens*). Mangrove swamps comprise 3.8 acres of the project area.

4.2.2.3 Saltwater Marsh

FLUCFCS - 642 (Saltwater Marsh)

USFWS – E2EM1P (Estuarine, Tidal, Emergent, Persistent, Irregularly Flooded)

Saltwater marshes are intertidal areas colonized by grasses and other salt-tolerant plants. The dominant plants in these systems are typically emergent, herbaceous species, although shrubs can also be locally abundant. Low marshes are regularly flooded zones and often comprised of a single species of plants such as smooth cordgrass (*Spartina alterniflora*). The saltwater marshes found with the project area are more typical of a high marsh system as the areas are irregularly flooded. The saltwater marshes are interspersed between mangroves systems and within the shoreline areas and are only found on the northern portion of the project. Species observed include seaside goldenrod (*Solidago sempervirens*), seaside oxeye (*Borrchia frutescens*), fimbry (*Fimbristylis sp.*), seashore dropseed (*Sporobolus virginicus*), and seaside heliotrope (*Heliotropium curassavicum*). Saltwater marshes comprise 1.3 acres within the project area.

4.2.2.4 Shorelines

FLUCFCS – 652 (Shorelines)

USFWS – E2US2N/P (Estuarine, Tidal, Unconsolidate Shore, Sand, Regularly Exposed /Irregularly Flooded)

The shoreline areas are sandy areas which are regularly exposed and have minimal vegetation. Shoreline areas are located on the northern causeway of the bridge only. Shoreline areas comprise 1.8 acres of the project area.

4.2.2.5 Seagrass

FLUCFCS – 911 (Seagrass)

USFWS – E2AB3M (Estuarine, Tidal, Aquatic Bed, Rooted Vascular, Irregularly Exposed)

Seagrasses are submerged flowering plants found in shallow, sheltered coastal systems anchored in the mud or sand bottoms. Seagrass beds are located on both the east and west side of the northern portion of the bridge, adjacent to the existing causeway. There is also a bed identified to the east side of the southern portion of the bridge, adjacent to the existing causeway. The species of seagrass identified in the project area consisted of shoalweed (*Halodule wrightii*) and turtle grass (*Thalassia testudinum*). Although the boundaries of the seagrass areas are known, the total acreage of seagrass located in the project area was not calculated as detailed surveys within those boundaries have not yet been conducted.

4.3 UNIFORM MITIGATION ASSESSMENT METHOD (UMAM)

Wetland functionality (i.e., quality) was evaluated using the Uniform Mitigation Assessment Method (UMAM). The assessment areas included all wetland area within the Study Area. UMAM provides a measurement of wetland functionality through identifying wetland impacts as units of functional loss caused by the proposed project. Conversely, UMAM is also used to determine mitigation for proposed impacts. Mitigation is calculated in units of wetland relative functional gain, where this value should, at a minimum, offset project wetland functional loss. However, specific mitigation information is not yet available for the proposed project since such information is typically developed during project design. Therefore, UMAM values represented in this Study represent impacts to wetlands only (i.e., functional loss).

UMAMs were performed on representative seagrass beds and on representative mangrove swamps within the project area. Wetland functional values were 0.8 for the seagrass beds and 0.5 for the mangrove fringe. The UMAM data sheets are provided in Appendix B.

4.4 ANALYSIS OF POTENTIAL WETLAND IMPACTS

Since most of the project area is over Boca Ciega Bay or within areas that can be claimed by the SWFWMD and USACE as jurisdictional wetland, wetland impacts will be unavoidable if the project needs are to be met. Design efforts will minimize or avoid wetland and surface water impacts to the greatest extent practicable. Since wetland and surface water impacts are unavoidable, an analysis of potential wetland involvement was performed. This analysis determined wetland impact areas for each of the six alternatives

under consideration for this project. Table 4-2 provides the estimated impact acreage for each of the alternatives considered.

**Table 4-2
Wetland and Surface Water Impact Acreage by Alternative**

ALT No.	FLUCFCS CODE					Total Impact Acreage
	540	612	642	652	911	
1	0.00	0.00	0.00	0.00	0.00	0.00
2	0.86	0.00	0.00	0.00	0.00	0.86
3	2.86	0.24	0.16	0.08	0.59	3.93
4	2.86	0.24	0.16	0.08	0.59	3.93
5 (RA)	2.38	0.01	0.04	0.01	0.15	2.59
6	2.38	0.01	0.04	0.01	0.15	2.59

**RA=Recommended Alternative*

Table 4-2 presents impacts for each alternative by FLUCFCS designation. Direct impacts to wetlands were calculated based upon anticipated earthwork that will affect wetlands through filling and/or, excavating soils and/or removing wetland vegetation. However, impacts to FLUCFCS 540 were based on the proposed width of the bridge structure over the bay, not on direct impacts for the foundations or structures directly impacting the bay bottom. As the area under the majority of the bridge is barren bottom, shading impacts from the bridge structure are not considered.

For Alternative 6, there will also be additional impacts to FLUCFCS 540 from the excavation necessary for the relocated channel. However, as some of the bay bottom is already at the required depth of 12 ft, excavation is not anticipated for the length of the relocated channel but will only be done in areas shallower than 12 ft. As the exact path and topography of the bottom is not yet determined, impacts from the relocation of the channel have not been included in this report.

Alternatives 1 and 2, representing the rehabilitation options, have the least amount of impact area with 0.0 ac and 0.86 acres, respectively. However, of the replacement alternatives, the high-level fixed alternatives (Alternatives 5 and 6) have less anticipated

wetland impacts than the bascule bridge replacement alternatives (Alternatives 3 and 4). In particular, the impacts to the vegetated communities, including seagrass, are less with the fixed-bridge options than for the bascule bridge alternatives. It should be noted that the majority of impact is to surface waters and that the vegetated wetland impacts for bridge replacement alternatives range from 0.20 acres to 1.07 acres.

4.5 WETLAND MITIGATION

In accordance with the Federal Highway Administration (FHWA) policy as contained in 23 Code of Federal Regulations (CFR) 777.11, the full range of mitigation options were considered in developing this project to avoid long-term and short-term adverse impacts to wetland resources and to avoid new construction in wetlands wherever there is a practicable alternative. Mitigation policies have been established by the USACE, the FDEP, and the water management districts. Options for mitigating the loss of wetlands include mitigation banking, upland and/or wetland preservation, and wetland restoration, enhancement, and creation.

Mitigation in the form of a transfer of funds per acre of impact to the SWFWMD is also an option available through Chapter 373.4137 F.S. These funds are used to finance mitigation programs managed and implemented by the SWFWMD. This Chapter states in part that "...mitigation for the impact of transportation projects proposed by the Department of Transportation can be more effectively achieved by regional, long-range mitigation planning rather than on a project-by-project basis. It is the intent of the Legislature that mitigation to offset the adverse effects of these transportation projects be funded by the Department of Transportation and be carried out by the Department of Environmental Protection and the water management districts...".

Wetland impacts resulting from the construction of this project are anticipated to be mitigated pursuant to Section 373.4137 F.S. to satisfy all mitigation requirements of Part IV Chapter 373, F.S. and 33 United States Code (U.S.C.) 1344. Under Section 373.4137 F.S., mitigation of FDOT wetland impacts will be implemented by the SWFWMD. The project is currently listed on the FDOT's wetland mitigation inventory, which is provided to the SWFWMD on an annual basis. It is anticipated that FDOT will provide funding to the SWFWMD for implementation of wetland mitigation required for this project.

4.6 CONSTRUCTION AND WETLANDS

To further minimize wetland impacts and effects to local water quality, specific measures will be implemented during construction. Short-term construction related impacts will be minimized by adherence to FDOT's "*Standard Specifications for Road and Bridge Construction*." These specifications include measures known as Best Management Practices which include the use of siltation barriers, dewatering structures, and

containment devices that will be implemented for controlling turbid water discharges outside of construction limits.

4.7 REQUIRED PERMITS AND REVIEW AGENCIES

The USACE and the SWFWMD/FDEP regulate wetlands within the project area. Normally, SWFWMD is the lead State agency on transportation projects. However, Alternative 6 requires the relocation of a channel that may result in significant dredging activity. As the FDEP is responsible for permitting dredging projects and the associated water quality issues, FDEP could be requested to be the lead agency if Alternative 6 is chosen as the Preferred Alternative. It will be determined at the time of permit application which agency will take the lead on this project. The USFWS, United States Environmental Protection Agency (EPA), National Marine Fisheries Service (NMFS), and the Florida Fish and Wildlife Conservation Commission (FFWCC) review and comment on wetland permit applications. It is currently anticipated that the following permits will be required for this project:

Permit Issuing Agencies

Environmental Resource Permit (ERP)	SWFWMD or FDEP
Section 404 Dredge and Fill Permit	USACE
National Pollutant Discharge Elimination System Permit (NPDES)	FDEP
United States Coast Guard Bridge Permit	USCG

Impacts to wetlands and surface waters due to the construction of the Recommended Alternative are estimated at 2.59 acres. Of those, 0.21 acre is attributable to vegetated wetlands, the remainder being to surface waters. The SWFWMD/FDEP requires an ERP when construction of any project results in the creation of a water management system or in impacts to waters of the state. The ERP required for this project may be elevated to an Individual level by SWFWMD as the project requires the relocation of the federal channel, is located within an Aquatic Preserve and an OFW, and/or has seagrass impacts.

In conjunction with the ERP application process, the project will also require authorization through the granting of a public easement to utilize sovereign submerged lands from the FDEP TITF. Although this is a proprietary issue rather than a regulatory matter, the approval of the easement has been linked to the ERP process and may impact permitting schedules.

Because a USCG Bridge Permit is required, the USCG has agreed to be the lead federal agency and will include Section 404 permit requirements within their review. Compliance with Section 404(b)(1) guidelines includes verification that all wetland impacts have first been avoided to the greatest extent possible, that unavoidable impacts have been minimized to the greatest extent possible, and that unavoidable impacts have been mitigated in the form of wetlands creation, restoration, and/or enhancement.

Because the USCG will function as the lead federal agency, the USACE is anticipated to review the project under Nationwide 15 for “*United States Coast Guard Approved Bridges*.” However, if Alternative 6 is chosen to proceed into design, the relocation of the federal channel will require further USACE approval in addition to the Section 404 guidelines.

Any project that results in the clearing of one or more acres of land requires a NPDES Permit from the FDEP, pursuant to 40 CFR Parts 122 and 124. In association with this permit, a Stormwater Pollution Prevention Plan (SWPPP) will also be required. The primary function of the NPDES requirements is to assure that sediment and erosion is controlled during construction of the project. These permits typically utilize Best Management Practices to assure compliance. Control of sedimentation from dredging of the relocated channel will be of utmost concern for this project.

4.8 *ESSENTIAL FISH HABITAT (EFH) ASSESSMENT*

4.8.1 *MAGNUSON-STEVENSON ACT*

Under the requirements of the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) of 1996, Essential Fish Habitat (EFH) Assessment is required for the proposed project. EFH is defined as the water and substrate necessary for fish spawning, breeding, feeding, and growth to maturity. The Act established standards for fishery conservation and management, and created eight regional Fishery Management Councils (FMC) to apply the national standards in the fishery management plans (FMP).

Another provision of the MSFCMA requires that the FMC identify and protect EFH for every species managed by a FMP (50 CFR 600). The MSFCMA also requires federal agencies to provide consultation on activities that may adversely affect EFH designated in the FMP. The NMFS, a service of the United States Department of Commerce, National Oceanic and Atmospheric Administration (NOAA), is responsible for implementing this mandate. Consultation with the NMFS is required as part of this process.

4.8.2 *EFH INVOLVEMENT*

Any land development activity may have direct (e.g., physical disruption) or indirect (e.g., loss of prey species) effects on EFH and be site-specific or habitat-wide. The potential adverse effect must be evaluated individually and cumulatively. The NMFS provides comments and recommendations to the responsible federal permitting agency. That information is considered by the permitting agency, and may be included in the recommendations as part of the Section 404 permit conditions.

According to NOAA guidelines for EFH (1998), EFH assessments must include:

- A description of the proposed action
- An analysis of the effects, including cumulative effects, of the action on EFH, the managed species, and associated species by life history stage
- The federal agency's reviews regarding the effects of the action on EFH
- Proposed mitigation, if applicable

A description of the proposed action has been provided in Sections 1.0 through 3.0 of this document. The sections below include the analysis of effects and the federal agency's reviews regarding those effects on the EFH.

4.8.3 ANALYSIS OF EFFECTS ON EFH

Interagency coordination between the FDOT and the NMFS resulted in a list of Major EFH categories for managed species in the Gulf of Mexico. Table 4-3 contains a list of the species considered to potentially utilize the project area.

Impacts to the unconsolidated bottom portions of the bay are considered to be temporary in nature and not anticipated to have a significant impact to EFH for most of the alternatives. However, the relocation of the channel for Alternative 6 only will result in permanent impacts to the bottom in areas where dredging is to occur. If Alternative 6 is chosen, those impacts should be evaluated when the exact position of the relocated channel and amount of dredging is known. The proposed project will potentially impact sparse beds of submerged aquatic vegetation (SAV), tidal marshes, mangroves communities and shoreline. With the Recommended Alternative, impacts to the vegetated communities will be approximately 0.21 acres, with 0.15 acres attributed to seagrass impacts.

The potential for shellfish harvesting was also evaluated. The project area is within a prohibited zone for shellfish harvesting and, therefore, will have no impact to the shellfish fishery.

Table 4-3
Managed Fisheries Species Anticipate to Occur in Pinellas County
and Potentially Occurring within the Study Area

Management Plan	Scientific Name	Common Name
Shrimp Fishery Management Plan	<i>Penaeus aztecus</i>	brown shrimp
	<i>Pandalus jordani</i>	pink shrimp
	<i>Pleoticus robustus</i>	royal red shrimp
	<i>Penaeus setiferus</i>	white shrimp
Red Drum Fishery Management Plan	<i>Sciaenops ocellatus</i>	red drum
Reef Fish Fishery Management Plan	<i>Mycteroperca bonaci</i>	black grouper
	<i>Mycteroperca microlepis</i>	gag grouper
	<i>Lutjanus griseus</i>	gray snapper
	<i>Balistes capriscus</i>	gray triggerfish
Stone Crab Fishery Management Plan	<i>Menippe mercenaria</i>	stone crab
Spiny Lobster Fishery Management Plan	<i>Panulirus spp.</i>	spiny lobster

Seagrass impacts are looked at carefully by the NMFS, and mitigation will have to fully compensate for the loss of the seagrass areas in the project area. During the development of the mitigation plan to be provided through SWFWMD, in accordance with Section 373.4137 F.S., the NMFS will be a part of the interagency team that reviews any plans proposed by SWFWMD as mitigation. With appropriate mitigation provided, this project is not anticipated to adversely affect EFH.

Section 5.0

PROTECTED SPECIES

In accordance with Section 7(c) of the Endangered Species Act of 1973 (as amended), the project study area has been evaluated for the potential presence of protected plant and animal species. Literature reviews and habitat evaluations were conducted to identify protected species that may inhabit the study area. Potentially occurring protected species were identified based on the Florida Natural Areas Inventory (FNAI) database and data on species occurrence from the Florida Fish and Wildlife Conservation Commission (FFWCC) and the US Fish and Wildlife Service (USFWS). The protected animal species identified to potentially occur in the project area are listed in Table 5-1 below. However, no federally protected plant species were observed or are known to occur within the project corridor. Therefore, this section will focus exclusively on protected animal species.

The following sections discuss species that may occur, and the potential effects the proposed project may have on each species. When applicable, specific avoidance and mitigation measures are discussed for species that otherwise may be affected by the proposed project.

Table 5-1
Protected Species Known to Occur in Pinellas County
and Potentially Occurring within the Study Area

Scientific Name	Common Name	Federal Status	State Status
<u>FISH</u>			
<i>Acipenser oxyrhynchus</i>	Gulf sturgeon	T	SSC
<i>Pristis pectinata</i>	smalltooth sawfish	E	
<u>REPTILES</u>			
<i>Caretta caretta</i>	loggerhead turtle	T	T
<i>Chelonia mydas</i>	green turtle	E	E
<i>Dermochelys coriacea</i>	leatherback turtle	E	E
<i>Eretmochelys imbricate</i>	hawksbill turtle	E	E
<i>Lepidochelys kempii</i>	Kemp's Ridley turtle	E	E

**Table 5-1 (continued)
Protected Species Known to Occur in Pinellas County
and Potentially Occurring Within The Study Area**

Scientific Name	Common Name	Federal Status	State Status
BIRDS			
<i>Ajaia ajaja</i>	roseate spoonbill		SSC
<i>Charadrius melodus</i>	piping plover	T	T
<i>Charadrius alexandrinus</i>	snowy plover		T
<i>Rynchops niger</i>	black skimmer		SSC
<i>Egretta caerulea</i> *	little blue heron		SSC
<i>Egretta rufescens</i>	reddish egret		SSC
<i>Egretta thula</i> *	snowy egret		SSC
<i>Egretta tricolor</i> *	tricolored heron		SSC
<i>Eudocimus albus</i> *	white ibis		SSC
<i>Haematopus palliatus</i>	American oystercatcher		SSC
<i>Haliaeetus leucocephalus</i>	southern bald eagle	T	T
<i>Mycteria americana</i>	wood stork	E	E
<i>Pelecanus occidentalis</i> *	brown pelican		SSC
<i>Sterna antillarum</i> *	least tern		T
MAMMALS			
<i>Trichechus manatus</i> *	West Indian manatee	E	E

FEDERAL STATUS

E Endangered: species in danger of extinction throughout all or a significant portion of its range.

T Threatened: species likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

STATE STATUS

E Endangered: species, subspecies, or isolated population so few or depleted in number or so restricted in range that it is in imminent danger of extinction.

T Threatened: species, subspecies, or isolated population facing a very high risk of extinction in the future.

SSC Species of Special Concern is a species, subspecies, or isolated population that is facing a moderate risk of extinction in the future.

* Observed in project area.

5.1 FIELD EVALUATION METHODS

To determine the occurrence of protected species, the study evaluated suitable habitat for federally protected species by a qualified FDOT environmental scientist. Surveys were then conducted in each habitat type for species known to occur or utilize those habitats. The surveys were performed in the winter of 2005/2006 and the spring of 2006. In addition, random surveys were performed along the corridor for the duration of the study to obtain data on resident and transient species. During these surveys, any evidence of protected species found or direct observations recorded.

5.2 RESULTS OF PROTECTED SPECIES SURVEYS

5.2.1 FISH

5.2.1.1 Gulf Sturgeon (*Acipenser oxyrinchus desotoi*)

The Gulf sturgeon, a federally and state protected species, forages in the Gulf of Mexico and associated estuaries and spawns in major coastal rivers with limestone outcrops. Non-breeding sturgeons have been infrequently observed in Tampa Bay, although none were observed in field reviews. The major threat to this species is loss of high quality spawning areas due to damming of coastal rivers. As the project is not within a spawning area and the presence of the Gulf sturgeon in Tampa Bay is considered infrequent, the project is anticipated to have “no effect” on the Gulf sturgeon.

5.2.1.2 Smalltooth Sawfish (*Pristis pectinata*)

The NMFS (NOAA Fisheries) listed the smalltooth sawfish as an endangered species in 2003. The smalltooth sawfish inhabit shallow coastal waters of tropical seas and estuaries throughout the world. They are typically found in shallow waters close to shore over muddy or sandy bottoms. Historically, the population was common throughout the Gulf of Mexico from Texas to Florida. However, currently, they are found mostly in the Everglades region of south Florida. Although the smalltooth sawfish was not observed in the area and the data as to its occurrence in the area are inconclusive, specific construction guidelines will be followed during the project for this species. With these guidelines in place, the project “may affect, not likely to adversely affect” the smalltooth sawfish.

5.2.2 REPTILES

Five marine turtle species potentially occur in the project area: the Atlantic loggerhead turtle (*Caretta caretta*), green turtle (*Chelonia mydas*), the leatherback turtle (*Dermochelys coriacea*), the hawksbill turtle (*Eretmochelys imbricata*), and Kemp’s Ridley turtle (*Lepidochelys kempii*). The U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) share jurisdiction of marine turtles, with

NFMS having lead responsibility for the conservation and recovery of sea turtles in the marine environment, and USFWS having lead responsibility for turtles on nesting beaches. As no suitable nesting beaches are present for marine turtles in the project area, NFMS will be responsible for any issues regarding marine turtles on this project.

5.2.2.1 Atlantic Loggerhead Turtle (*Caretta caretta*)

The loggerhead turtle, a federally and state protected species, is found in marine coastal and oceanic waters throughout Florida. Nesting has been documented in Pinellas County. However, no suitable nesting habitat is present in the vicinity of the project. Although no individuals of this species were observed during the field surveys, the species is anticipated to occur in the area. The FDOT will implement the Marine Wildlife Safety Plan that has been utilized for similar projects in the past. With these safety measures in place, the proposed project “may affect, not likely to adversely affect” the Atlantic loggerhead sea turtle.

5.2.2.2 Atlantic Green Turtle (*Chelonia mydas*)

The Atlantic green turtle, protected as an endangered species both federally and by the state, is found in estuarine, marine coastal, and oceanic waters and is present in Florida year-round. Nesting occurs primarily along the Atlantic coast with a few nests known on the southwestern coast and panhandle. However, no suitable nesting habitat is present in the vicinity of the project. Although no green turtles were observed during field surveys, the species is anticipated to occur in the area. Therefore, the FDOT will implement the Marine Wildlife Safety Plan for protection of marine turtles within the project area. With these safety measures in place, the proposed project “may affect, not likely to adversely affect” the Atlantic green turtle.

5.2.2.3 Atlantic Hawksbill Turtle (*Eretmochelys imbricata*)

The Atlantic hawksbill turtle is federally and state protected as an endangered species. No individuals of this species were observed during the field surveys and no suitable nesting habitat is present in the vicinity of the project. This species is not known to nest along the western shore of Florida, although rare nesting events have been recorded on the southeastern coast and in the Florida Keys. However, the species does have the potential to occur in the area within coastal waters. Therefore, the FDOT will implement the Marine Wildlife Safety Plan for protection of marine turtles within the project area. With these safety measures in place, the proposed project “may affect, not likely to adversely affect” the Atlantic hawksbill turtle.

5.2.2.4 Leatherback Turtle (*Dermochelys coriacea*)

The leatherback turtle, a federally and state protected endangered species, is rarely seen in coastal waters, tending to remain in oceanic waters unless nesting. However, nesting

has not been observed for this species on the west Florida coastline except in the panhandle. No individuals of this species were observed during the field surveys. No suitable nesting habitat exists for this species in the vicinity of the project. Although unlikely, the species has the potential to occur in the project area. Therefore, the FDOT will implement the Marine Wildlife Safety Plan for protection of marine turtles within the project area. With these safety measures in place, the proposed project “may affect, not likely to adversely affect” the leatherback turtle.

5.2.2.5 *Kemp’s Ridley Turtle (Lepidochelys kempii)*

The Kemp’s Ridley turtle, protected both federally and by the state, is found in coastal waters statewide, although rare along the southeastern coast. Waters along the entire Gulf coast are considered important for the growth of the young. No suitable nesting habitat exists for this species within the project area. However, the Kemp’s Ridley turtle does have the potential to occur in the project area. Therefore, the FDOT will implement the Marine Wildlife Safety Plan for protection of marine turtles within the project area. With these safety measures in place, the proposed project “may affect, not likely to adversely affect” the Kemp’s Ridley turtle.

5.2.3 *BIRDS*

5.2.3.1 *Piping Plover (Charadrius melodus)*

The piping plover is protected federally and by the State as a threatened species. No individuals of this species were observed during the field surveys. This species winters in Florida, but does not breed in Florida. It is most commonly found on beach or shoreline habitats. Potential foraging habitat in the project vicinity exists along the shoreline of the causeway associated with the northern portion of the bridge. Critical Habitat for winter migration has been designated by the USFWS for this species. However, the project is not within a Critical Habitat area for this species. No nesting or roosting habitat will be affected and impacts to potential foraging areas are minimal. Wetland mitigation will be provided for unavoidable habitat losses resulting from the proposed project. Therefore, this project “may affect, not likely to adversely affect” this species.

5.2.3.2 *Snowy Plover (Charadrius alexandrinus)*

The snowy plover is protected by the state as a threatened species. This species is restricted to dry, sandy beaches where they nest in shallow depressions, usually near some vegetation or debris. This species breeds commonly along the gulfcoast beaches of the panhandle, less so in Pinellas County. Potential foraging habitat in the project vicinity exists along the shoreline of the causeway associated with the northern portion of the bridge. No nesting or roosting habitat will be affected and impacts to potential foraging areas are minimal. Wetland mitigation will be provided for unavoidable habitat

losses resulting from the proposed project. Therefore, this project may affect, but is not likely to adversely affect this species.

5.2.3.3 *Black Skimmer (Rynchops niger)*

The black skimmer is protected by the state as a species of special concern (SSC). This species is a resident along most of the Florida coasts, although most prevalent in south Florida and the Florida Keys in the winter. The black skimmer nests primarily on sandy beaches, small coastal islands, and dredge spoil islands although it has also been known to nest on gravel rooftops. Although some suitable nesting habitat exists within the project area, human recreational activities are prevalent in the area and nesting is considered unlikely. In addition, impacts to potential nesting habitat would be negligible. Therefore, this project will have no effect on the black skimmer.

5.2.3.4 *Bald Eagle (Haliaeetus leucocephalus leucocephalus)*

The bald eagle is protected federally and by the state as a threatened species. The FFWCC database was reviewed for potential bald eagle nests in the area. The closest known nest is more than four miles away from the project site. No nests were observed in the project area during field reviews.

Since nest locations can change over time, the FDOT will resurvey the project corridor and review existing databases during all design/permitting phases of this project. These surveys will identify any changes to current nest information, which will then result in modification of construction activities, as necessary, to reduce or eliminate any effects to this species. However, since no eagle nests currently occur within 660 feet of the study area, the project will have “no effect” on the bald eagle.

5.2.3.5 *American Oystercatcher (Haematopus palliatus)*

The American oystercatcher is protected by the state as a SSC. Although some suitable nesting habitat exists within the project area, human recreational activities are prevalent in the area and nesting is considered unlikely. In addition, impacts to potential nesting or foraging habitat are negligible. Therefore, this project will have no effect on the American oystercatcher.

5.2.3.6 *Wood Stork (Mycteria americana)*

The wood stork is protected at the state and federal level as an endangered species. This wading bird nests in colonies, typically in swamps that are proximal to seasonally isolated wetlands. These colony sites may also be used for roosting during the non-nesting season, resulting in year-round use by the wood stork.

The USFWS guidelines for wood stork colony protection state that impacts to appropriate wetland systems within an 18.6-mile radius of a colony may directly affect colony

productivity. The radius area, known as the Core Foraging Area (CFA), is defined as the distance storks may fly from the colony to capture prey for their young. Wood storks rely upon wetland systems that provide high concentrations of prey items (e.g., fish and amphibians) during the nesting season. Wetland systems that provide this foraging condition have a specific hydrologic regime. Therefore, not all wetlands within a CFA may qualify as appropriate foraging habitat for nesting purposes. However, appropriate wetlands that are impacted within the CFA must be compensated for within that same CFA or at a USFWS-approved mitigation bank. Prior to this policy change, the USFWS allowed project-related wetland mitigation efforts to compensate for all foraging habitat impacts.

No colonies or wood stork roosts were identified within the study area during the field evaluations. The FFWCC maintains a colony location database, which identifies two active wood stork colonies within 18.6 mi of the project corridor. The colony identification numbers are 615113 (17.82 miles away) and 615336 (18.5 miles away). Wetlands supporting the proper hydrologic regime for foraging purposes may be affected throughout the study area.

If it is concluded that suitable wetlands are impacted, the FDOT will coordinate with the USFWS to propose compensation to offset effects to the wood stork colonies. It is anticipated that with this effort, the proposed project “may affect, not likely to adversely affect” the wood stork or its habitat.

5.2.3.7 *Brown Pelican (Pelicanus occidentalis)*

The brown pelican is protected by the state as a SSC. Individuals of this species were observed during field surveys in the project area. Although some suitable nesting habitat exists within the project area, human recreational activities are prevalent in the area and nesting is considered unlikely. In addition, impacts to potential nesting habitat are minimal. Therefore, this project will have no effect on the brown pelican.

5.2.3.8 *Least Tern (Sterna antillarum)*

The least tern is a state protected threatened species. This species was observed during the field surveys. It prefers to nest on open, sandy, sparsely vegetated substrate such as coastal beaches, dunes or islands, but will nest on man-made or artificial areas including construction sites, surface-mined areas, and roof tops. Although some suitable nesting habitat exists within the project area, human recreational activities are prevalent in the area and nesting is considered unlikely. In addition, impacts to potential nesting habitat would be negligible. Therefore, this project will have no effect on the least tern.

5.2.3.9 State Protected Wading Birds and Colonies

Birds in this category include those not treated above, but that may occur in the study area. These birds are commonly observed in urban areas, but are provided protection by the FFWCC, which list all as SSC. Additionally, nesting and roosting colony sites for all bird species that congregate in this manner, are protected by the FFWCC. They include wading birds such as the roseate spoonbill (*Ajaia ajaja*), little blue heron (*Egretta caerulea*), reddish egret (*Egretta rufescens*), snowy egret (*E. thula*), tricolored heron (*E. tricolor*), and white ibis (*Eudocimus albus*). These species have the potential to occur due to the presence of suitable foraging habitat. However no colonies occur within the study area.

Additionally, the FFWCC maintains a statewide database of known wading bird colonies. This database was reviewed to determine the proximity and potential effects the project may have on colonies. Several colonies occur within Pinellas County, however, the closest is more than one half mile from the study area. Due to its distance, wading bird colonies will not be affected by the proposed project. Therefore, the proposed project will have no effect on wading bird colonies.

During field evaluations some wading birds were observed foraging. Forage areas may be lost due to construction of the bridge approaches. Mitigation will be provided for unavoidable habitat losses resulting from the proposed project. Therefore, this project may affect, but is not likely to adversely affect protected wetland-dependent birds.

5.2.4 MAMMALS

5.2.4.1 Florida Manatee (*Trichechus manatus*)

The Florida manatee is protected as endangered by the federal and state government. The manatee occurs in coastal waters and larger rivers in southwest Florida and was observed in the project area. Critical Habitat has not been designated within the project area. However, manatees are anticipated to travel in the project vicinity.

Protection measures to assure there is no adverse affect to the manatee will be implemented. The new bridge structure is not anticipated to negatively impact manatee habitat; however, installation may create hazards during the construction period. These issues will be addressed through the implementation of the “Manatee and Sea Turtle Watch Program Guidelines”, which includes standard protection measures during construction (Appendix C). Through implementation of these guidelines, the manatee will not be adversely affected by the project. Therefore, the proposed project “may affect, not likely to adversely effect” the manatee.

Section 6.0

SUMMARY AND COMMITMENTS

6.1 WETLAND INVOLVEMENT

Five wetland and surface water system types were identified in the project area. As this is a bridge project crossing the intracoastal waterway, the majority of impacts were to surface waters identified as Bays/Estuary (Florida Land Use, Cover and Forms Classification System [FLUCFCS] 540). Mangrove swamps (FLUCFCS 612), shoreline (FLUCFCS 652), salt marsh (FLUCFCS 642), and seagrass (FLUCFCS 911) were the wetland or submerged aquatic communities identified in the project area. The majority of the wetland systems are located on the northern causeway of the bridge. Due to the presence of wetlands and submerged aquatic vegetation (SAV) immediately adjacent to the bridge approaches, particularly at the north end of the project, impacts to wetlands and SAV will be unavoidable. However, the alignment of the proposed widening of the bridge to the east side of the bridge will minimize impacts, particularly to SAV. The anticipated impact from the Recommended Alternative to wetlands and surface waters is 2.59 acres, with 0.21 acres attributable to wetlands and SAV. It should be noted that the impacts to surface waters (FLUCFCS 540) includes the entire area of the bay/estuary under the proposed bridge deck although all of that area may not be directly impacted. The project is located in Boca Ciega Bay, designated as both an Aquatic Preserve and an Outstanding Florida Water (OFW). To minimize impacts and affects to local water quality, specific measures will be implemented during construction. Short-term construction related impacts will be minimized by adherence to the Florida Department of Transportation's (FDOT's) "*Standard Specifications for Road and Bridge Construction.*" These specifications include measures known as Best Management Practices which include the use of siltation barriers, dewatering structures, and containment devices that will be implemented for controlling turbid water discharges outside of construction limits.

For approval of impacts to wetlands and water quality, the project will involve coordination with the Southwest Florida Water Management District (SWFWMD), the United States Coast Guard (USCG), the Florida Department of Environmental Protection (FDEP), and the United States Army Corps of Engineers (USACE). The National Marine Fisheries Service (NMFS) will also be an integral part of the federal permitting process as seagrass impacts and the essential fish habitat (EFH) are involved. Finally, the project is within sovereign submerged lands and will require a public easement from the FDEP. While this is also a proprietary approval, it is linked to the Environmental Resource Permit (ERP) application process, and is also anticipated to affect the permitting timeframe.

Wetland impacts resulting from the construction of this project are anticipated to be mitigated pursuant to Section 373.4137 Florida Statutes (F.S.) to satisfy all mitigation requirements of Part IV Chapter 373, F.S. and 33 United States Code (U.S.C.) 1344. Under Section 373.4137 F.S., mitigation of FDOT wetland impacts will be implemented by SWFWMD. The project is currently listed on the FDOT's wetland mitigation inventory, which is provided to the SWFWMD on an annual basis. It is anticipated that FDOT will provide funding to the SWFWMD for implementation of wetland mitigation required for this project.

6.2 PROTECTED SPECIES

The following federally protected species were identified as potentially occurring within the project area.

- Gulf sturgeon
- smalltooth sawfish
- loggerhead turtle
- green turtle
- leatherback turtle
- hawksbill turtle
- Kemp's Ridley turtle
- piping plover
- bald eagle
- wood stork
- West Indian manatee

In addition to the federally protected species, state-only protected species were also identified. These included state-protected wading birds, such as the roseate spoonbill, little blue heron, reddish egret, snowy egret, tricolored heron, and white ibis. The state protected brown pelican, least tern, American oystercatcher, snowy plover, and black skimmer were also identified as potentially occurring in the project area.

The project is anticipated to have "no effect" on the bald eagle and the Gulf sturgeon. Bald eagle nests were not identified in the database for the project area or observed in the field. The Gulf sturgeon rarely occurs in the area and spawning activities, the primary concern for its recovery, are within coastal rivers, not bays and estuaries. Due to the minimal and temporary effect to the foraging areas and the lack of suitable nesting areas

for the least tern, black skimmer, brown pelican, and American oystercatcher, the project is also anticipated to have no effect on these species.

The remaining species were given a “may affect, not likely to adversely affect” determination. To assure these species will not be adversely affected by the proposed project, the Department will make the following commitments:

- The Department will implement the “Manatee and Sea Turtle Watch Program Guidelines” and “Sea Turtle Construction Conditions” for protection of the five species of marine turtles (green turtle, leatherback turtle, hawksbill turtle, Kemp’s Ridley turtle, loggerhead turtle) potentially occurring in the area. Note that no suitable nesting beaches are found in the project area and protective measures are for turtles in open water only.
- State protected wading birds (i.e., snowy egret, little blue heron, roseate spoonbill, reddish egret, tricolored heron and white ibis) will not be adversely affected because impacts to foraging areas (wetlands) will be compensated for through wetland mitigation efforts.
- The snowy plover and piping plover will not be adversely affected because the minimal impacts to foraging areas will be compensated for through wetland mitigation efforts.
- Impacts to the federally protected wood stork Core Foraging Area (CFA) shall be compensated through the purchase of credits from a United States Fish and Wildlife Service-USFWS) approved mitigation bank or through additional wetland compensation via the FDOT wetland mitigation program. It is also noted that impacts to foraging areas are estimated at less than 0.2 acres.
- “Sea Turtle and Smalltooth Sawfish Construction Conditions” will be implemented to assure that the smalltooth sawfish is not adversely affected by the project.
- “Manatee and Sea Turtle Watch Program Guidelines” will be implemented to assure that the West Indian Manatee will not be adversely impacted by the project.

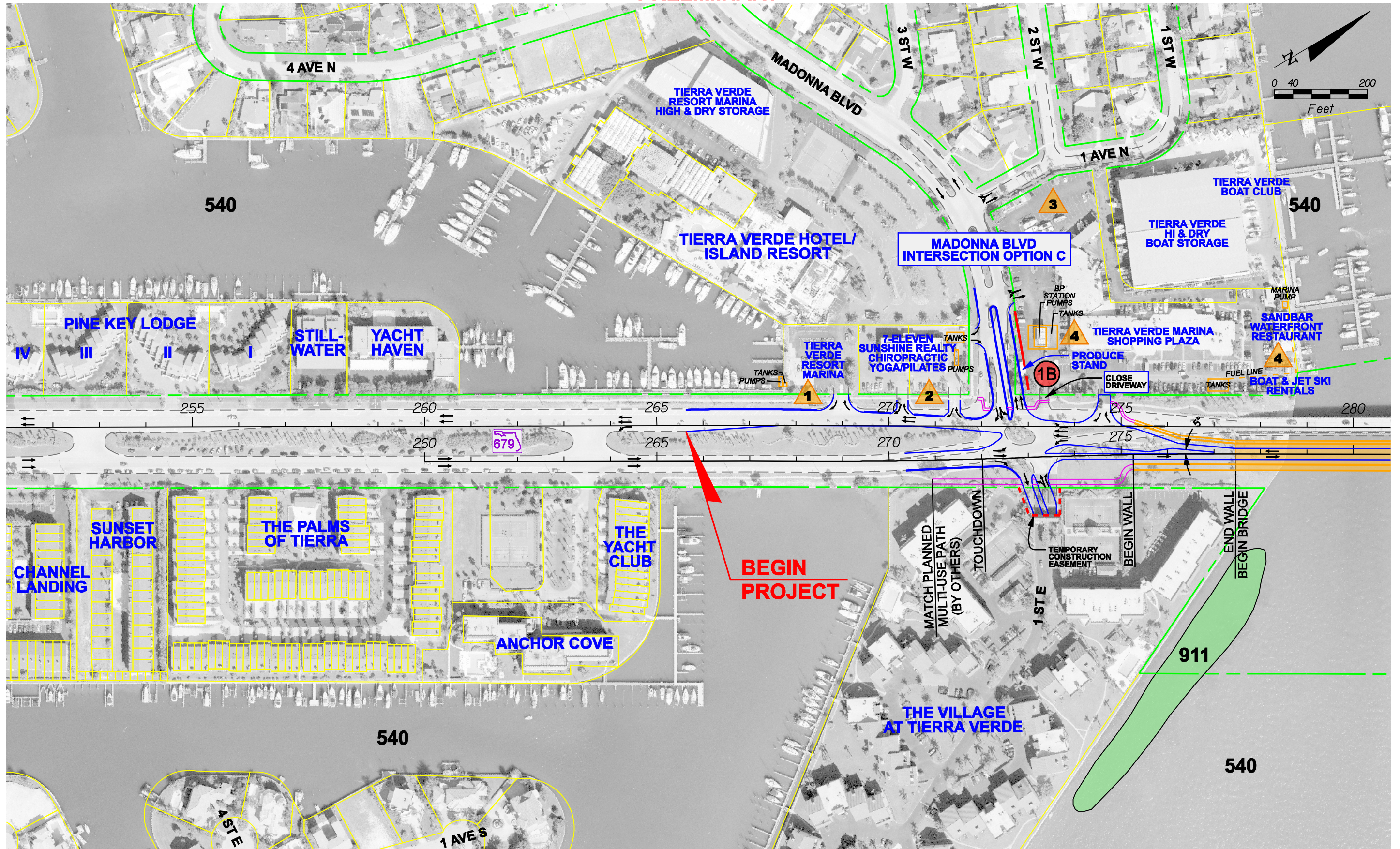
APPENDICES

- Appendix A: Conceptual Plans**
- Appendix B: UMAM Forms**
- Appendix C: Manatee and Sea Turtle Watch
Program Guides
Sea Turtle and Smalltooth Sawfish
Construction Conditions**
- Appendix D: Marine Wildlife Safety Plan**

APPENDIX A
CONCEPTUAL PLANS

PRELIMINARY

FLIGHT DATE: MAY 7, 2005



ALTERNATIVE 3: LOW-LEVEL BASCULE BRIDGE OVER EXISTING CHANNEL

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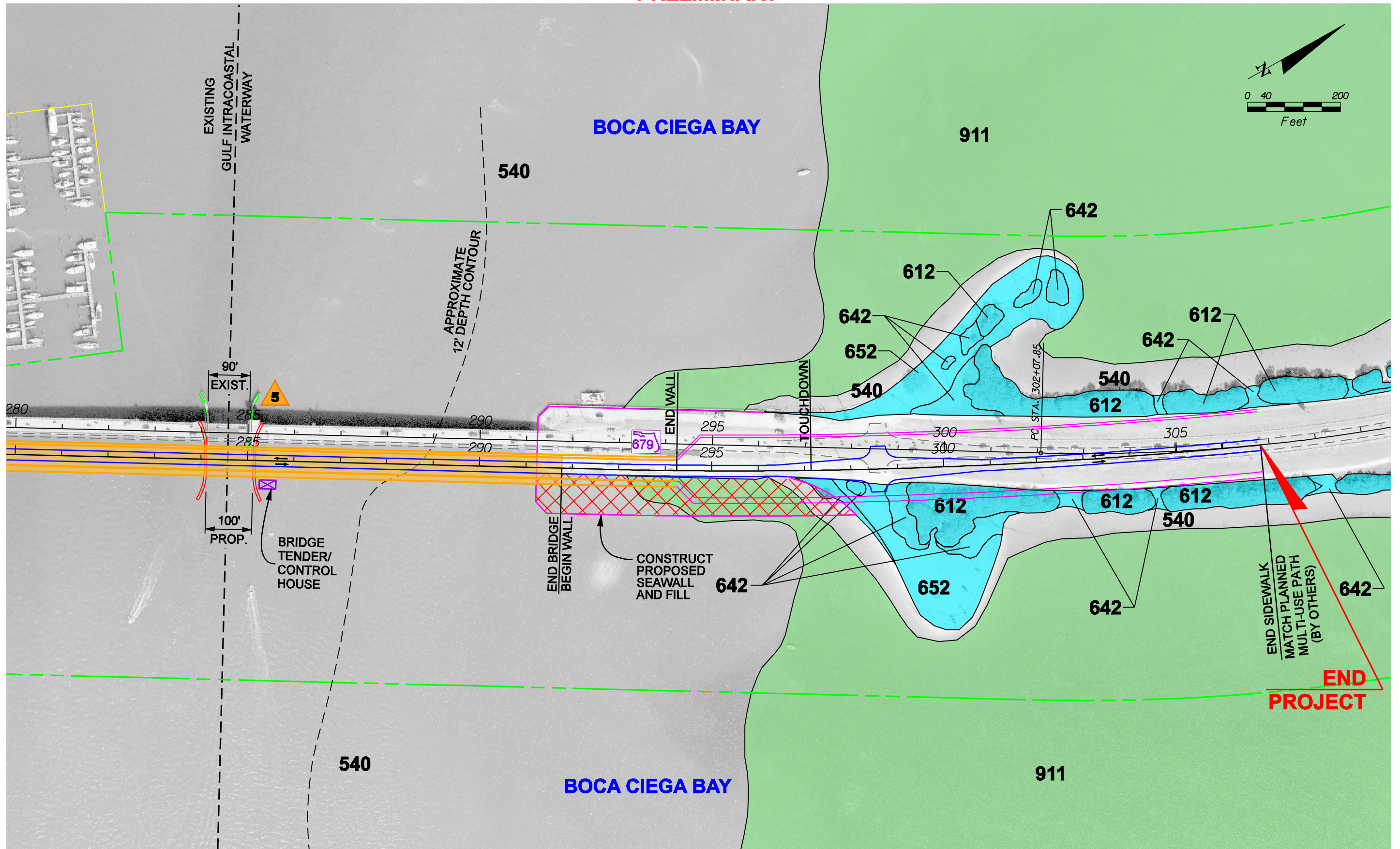
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	EXISTING RIGHT-OF-WAY	612	FLUCFC CODES
	PROPOSED RIGHT-OF-WAY		WETLANDS
	PROPOSED EDGE OF PAVEMENT		SEAGRASS
			POTENTIAL CONTAMINATION SITE
			NUMBER OF BUSINESS RELOCATIONS

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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
S.R. 679	PINELLAS	410755-1-22-01

S.R. 679 (PINELLAS BAYWAY STRUCTURE E)
 AT INTRACOASTAL WATERWAY
 CONCEPT PLANS

SHEET NO.
1



ALTERNATIVE 3: LOW-LEVEL BASCULE BRIDGE OVER EXISTING CHANNEL

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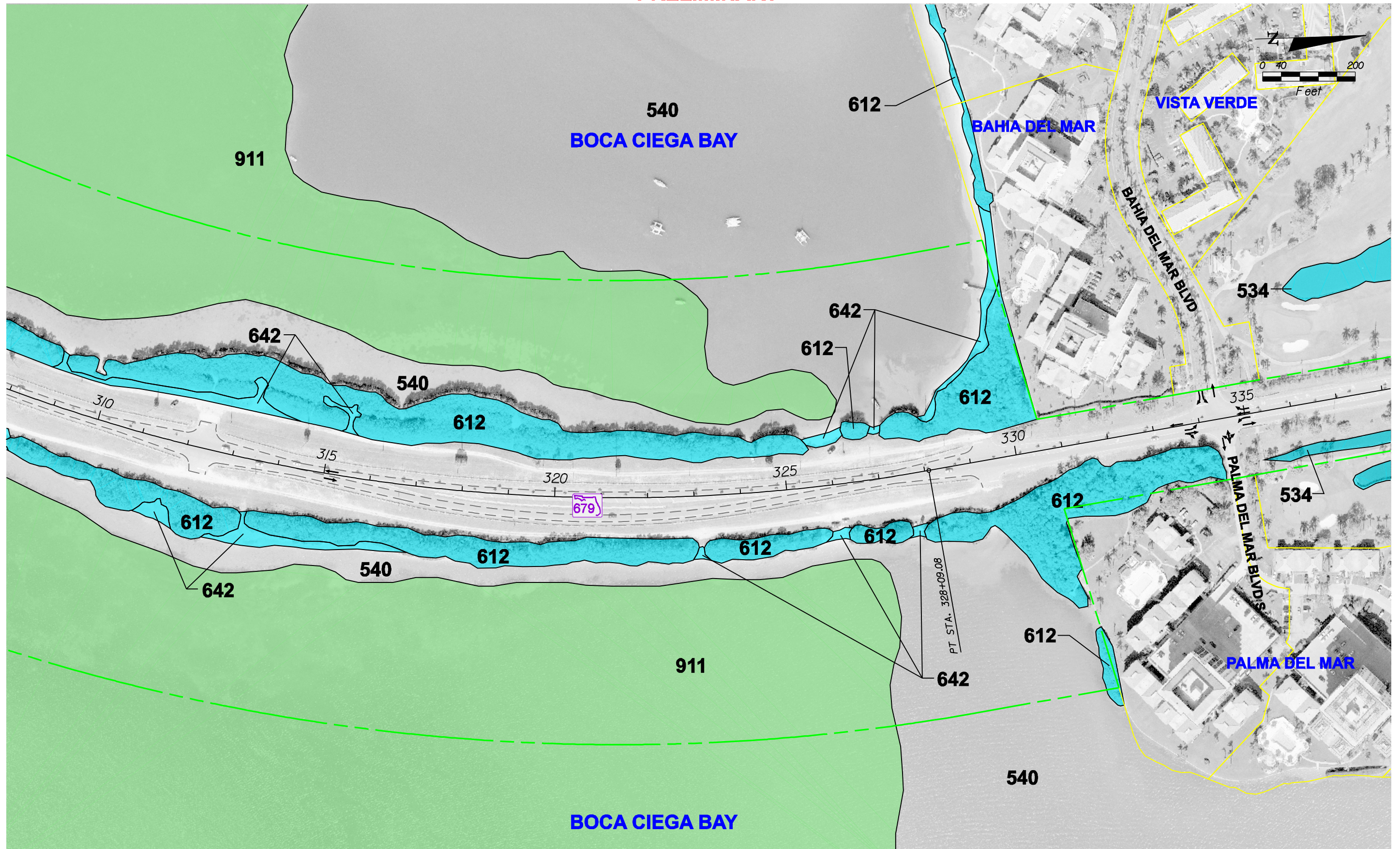
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AT INTRACOASTAL WATERWAY
CONCEPT PLANS**

SHEET NO.
2





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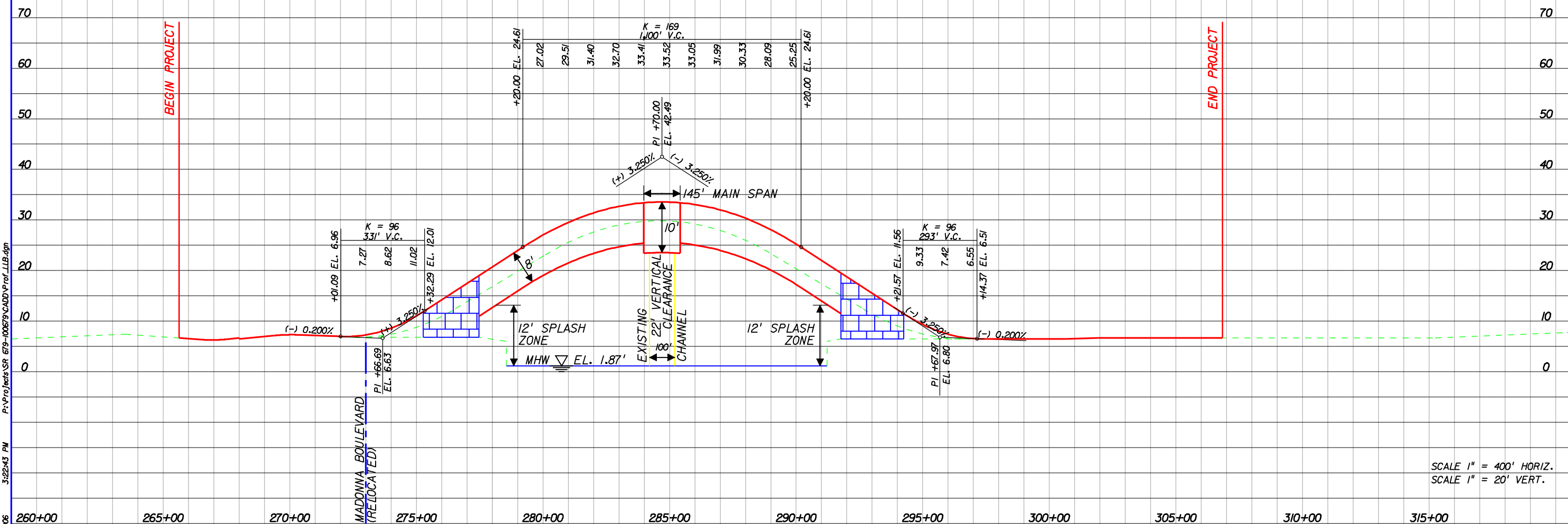
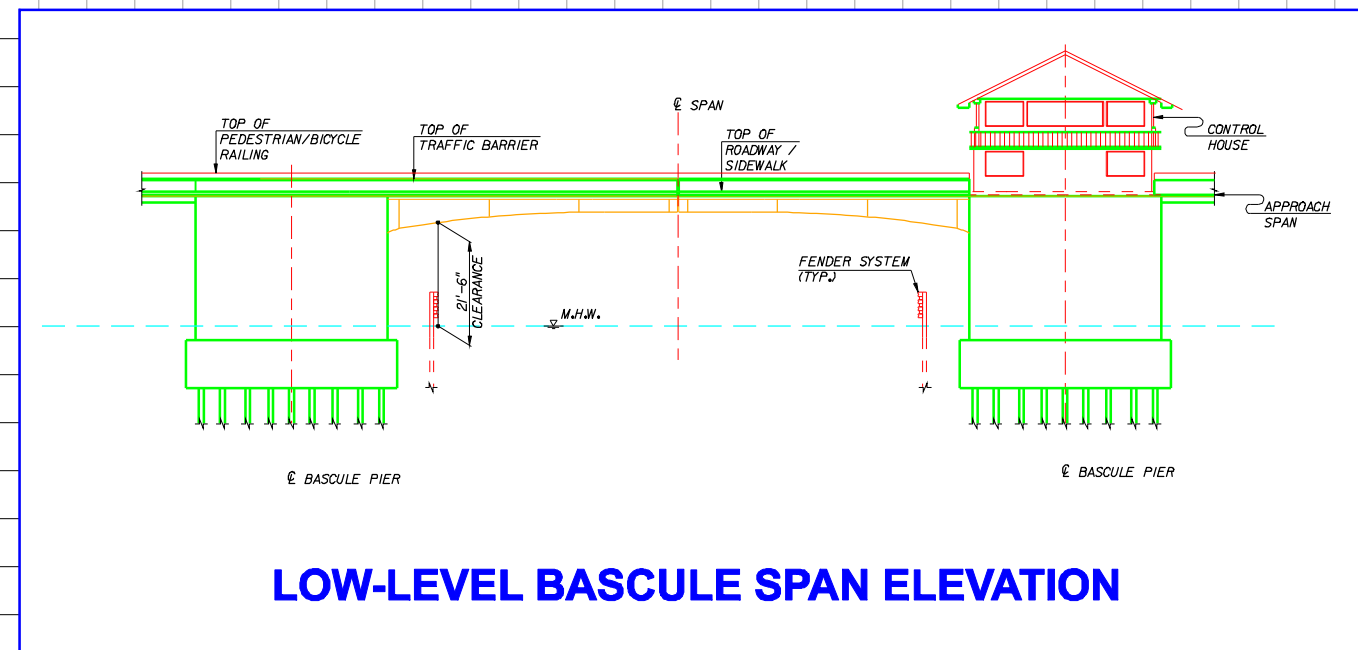
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**S.R. 679 (PINELLAS BAYWAY STRUCTURE E)
 AT INTRACOASTAL WATERWAY
 CONCEPT PLANS**

SHEET NO.
3

PRELIMINARY



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SCALE 1" = 20' VERT.

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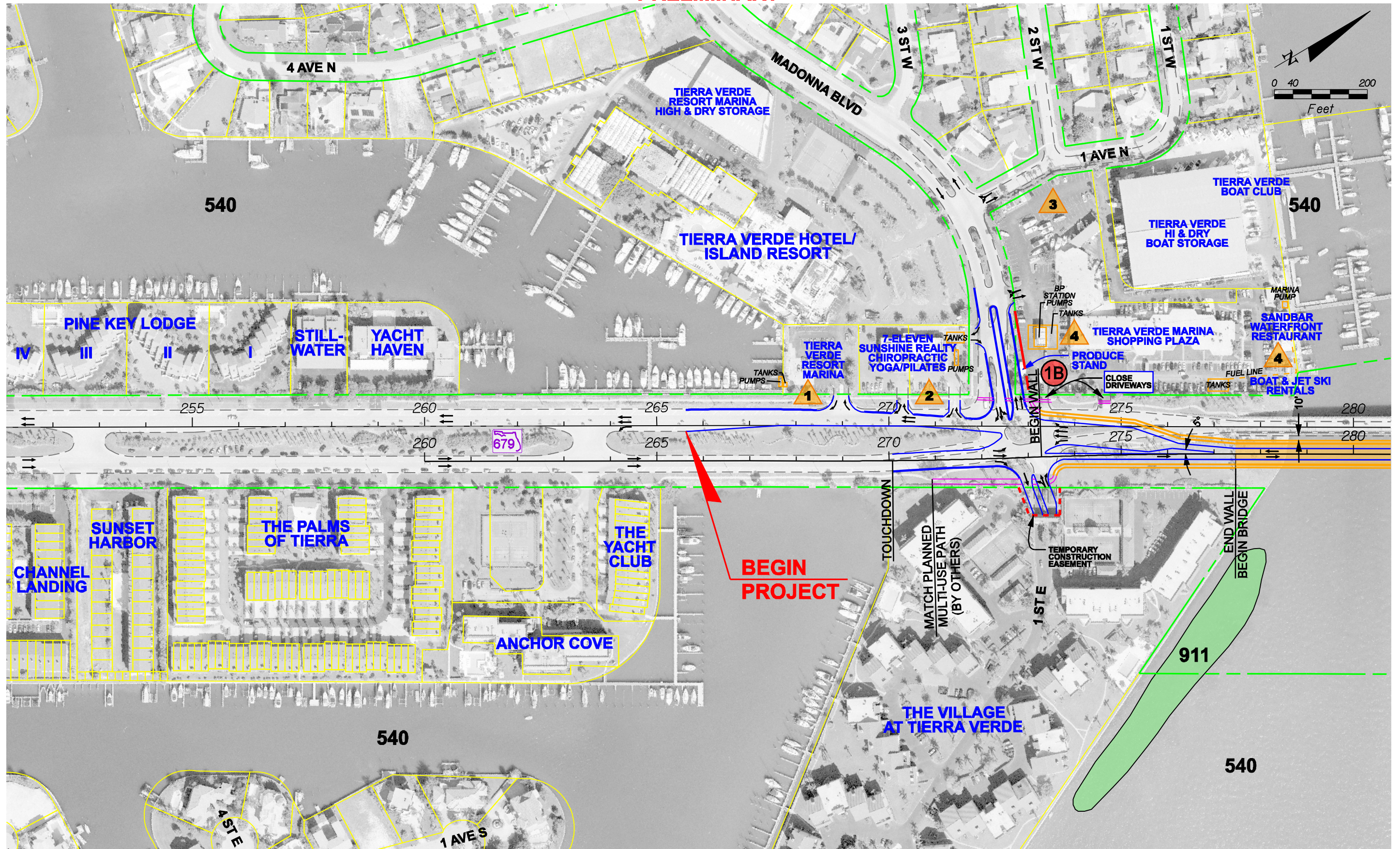
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
S.R. 679	PINELLAS	410755-1-22-01

**S.R. 679 (PINELLAS BAYWAY STRUCTURE E)
AT INTRACOASTAL WATERWAY
LOW-LEVEL BASCULE BRIDGE PROFILE
EXISTING CHANNEL 3.25 PERCENT GRADE**

SHEET NO.
4

PRELIMINARY

FLIGHT DATE: MAY 7, 2005



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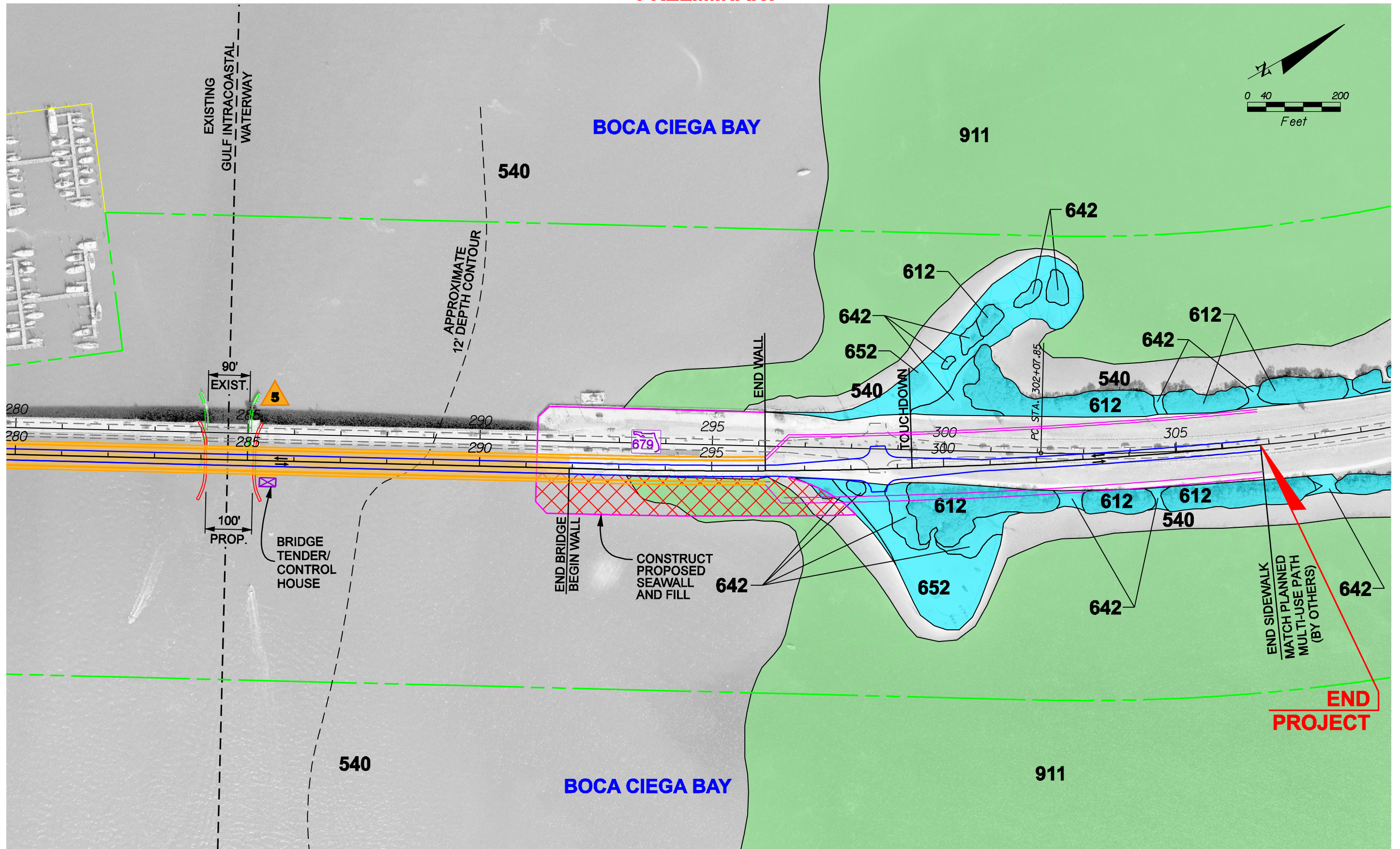
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	PROPOSED EDGE OF PAVEMENT		SEAGRASS
			POTENTIAL CONTAMINATION SITE NUMBER OF BUSINESS RELOCATIONS

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 AT INTRACOASTAL WATERWAY
 CONCEPT PLANS**

SHEET NO.
1



ALTERNATIVE 4: MID-LEVEL BASCULE BRIDGE OVER EXISTING CHANNEL

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	PROPOSED RIGHT-OF-WAY		WETLANDS
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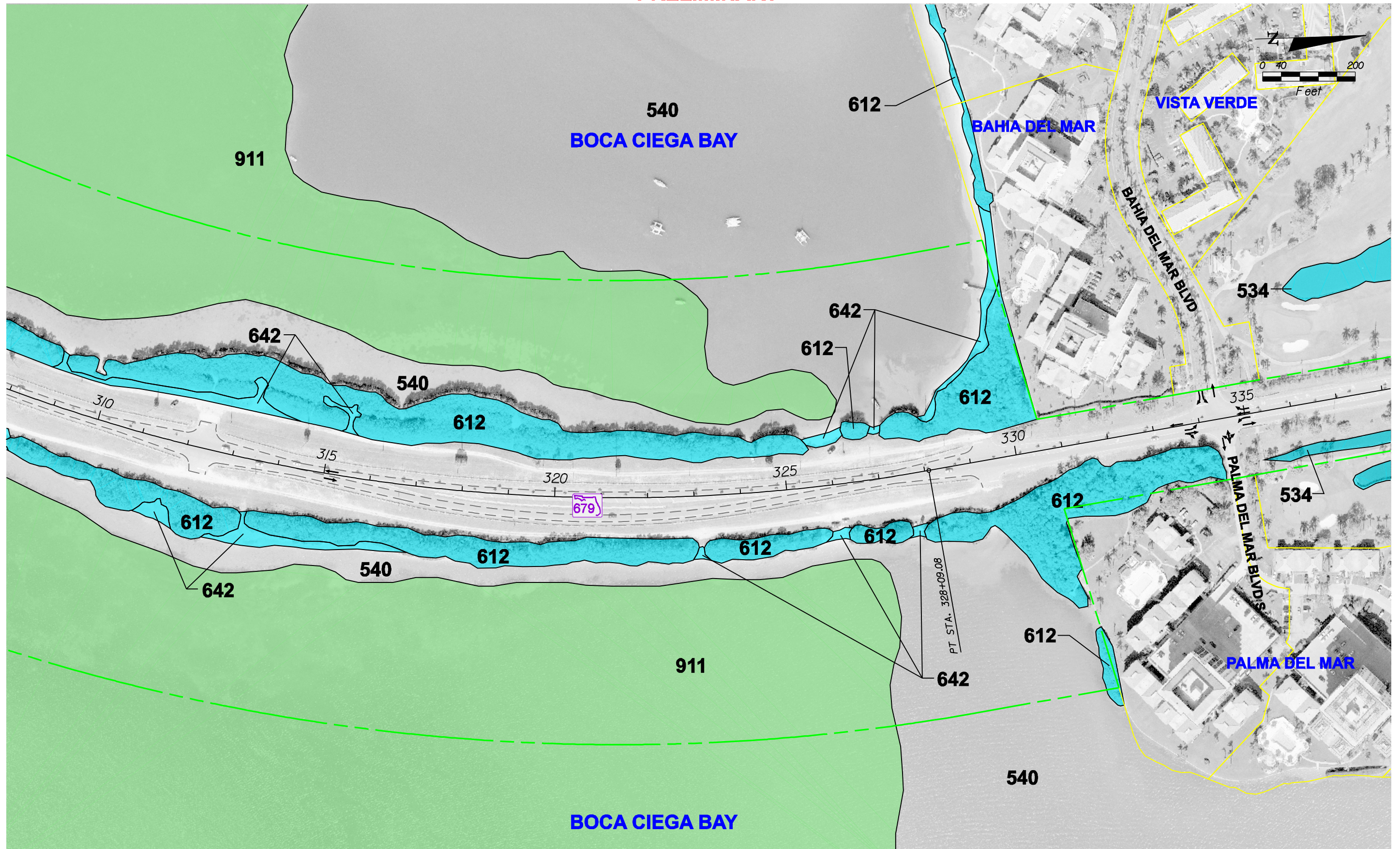
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
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**S.R. 679 (PINELLAS BAYWAY STRUCTURE E)
 AT INTRACOASTAL WATERWAY
 CONCEPT PLANS**

SHEET NO.
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PRELIMINARY

FLIGHT DATE: MAY 7, 2005



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	NUMBER OF BUSINESS RELOCATIONS		

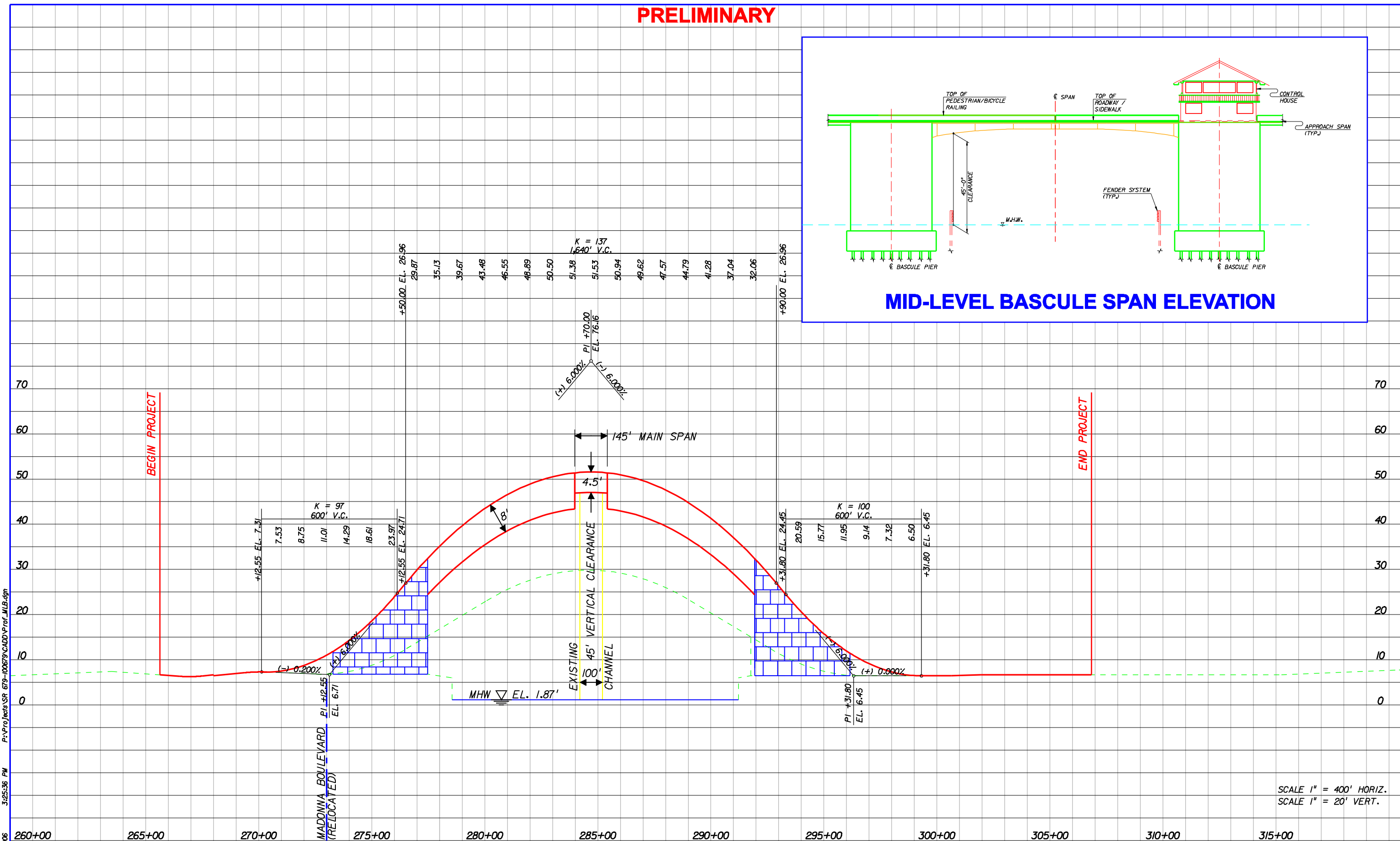
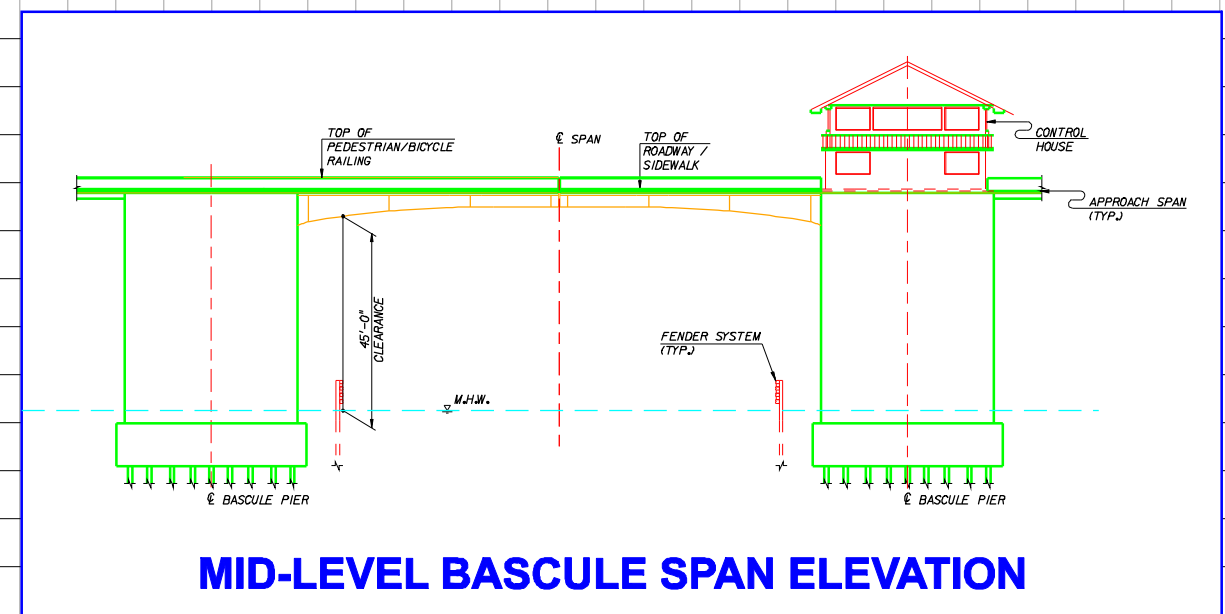
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**S.R. 679 (PINELLAS BAYWAY STRUCTURE E)
 AT INTRACOASTAL WATERWAY
 CONCEPT PLANS**

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PRELIMINARY



ALTERNATIVE 4: MID-LEVEL BASCULE BRIDGE OVER EXISTING CHANNEL

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LEGEND

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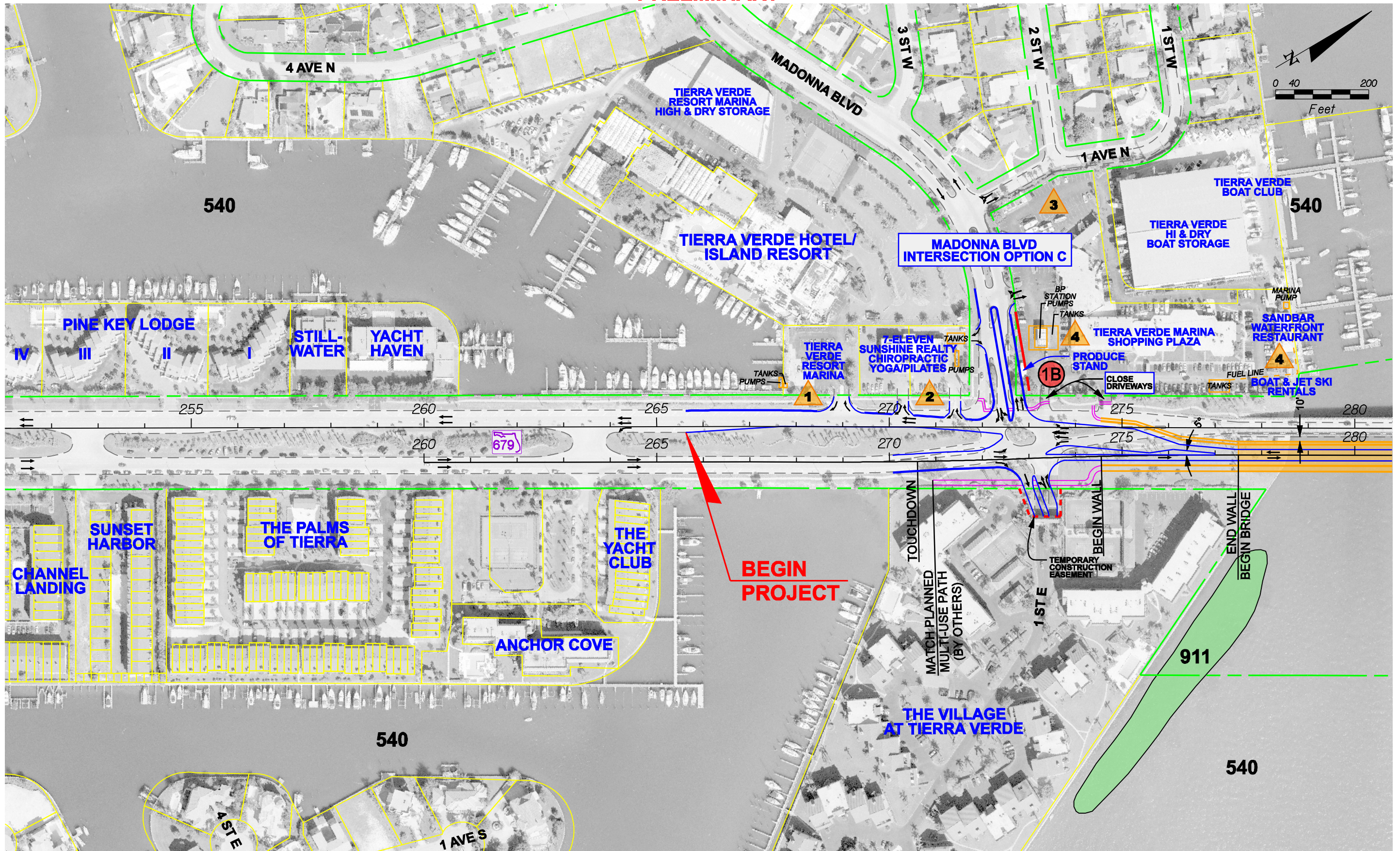
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S.R. 679	PINELLAS	410755-1-22-01

**S.R. 679 (PINELLAS BAYWAY STRUCTURE E)
AT INTRACOASTAL WATERWAY
MID-LEVEL BASCULE BRIDGE PROFILE
EXISTING CHANNEL 6 PERCENT GRADE**

SHEET NO.
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PRELIMINARY

FLIGHT DATE: MAY 7, 2005



ALTERNATIVE 5: HIGH-LEVEL FIXED BRIDGE OVER EXISTING CHANNEL

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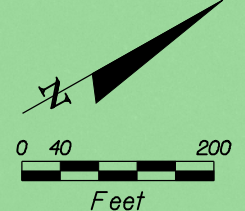
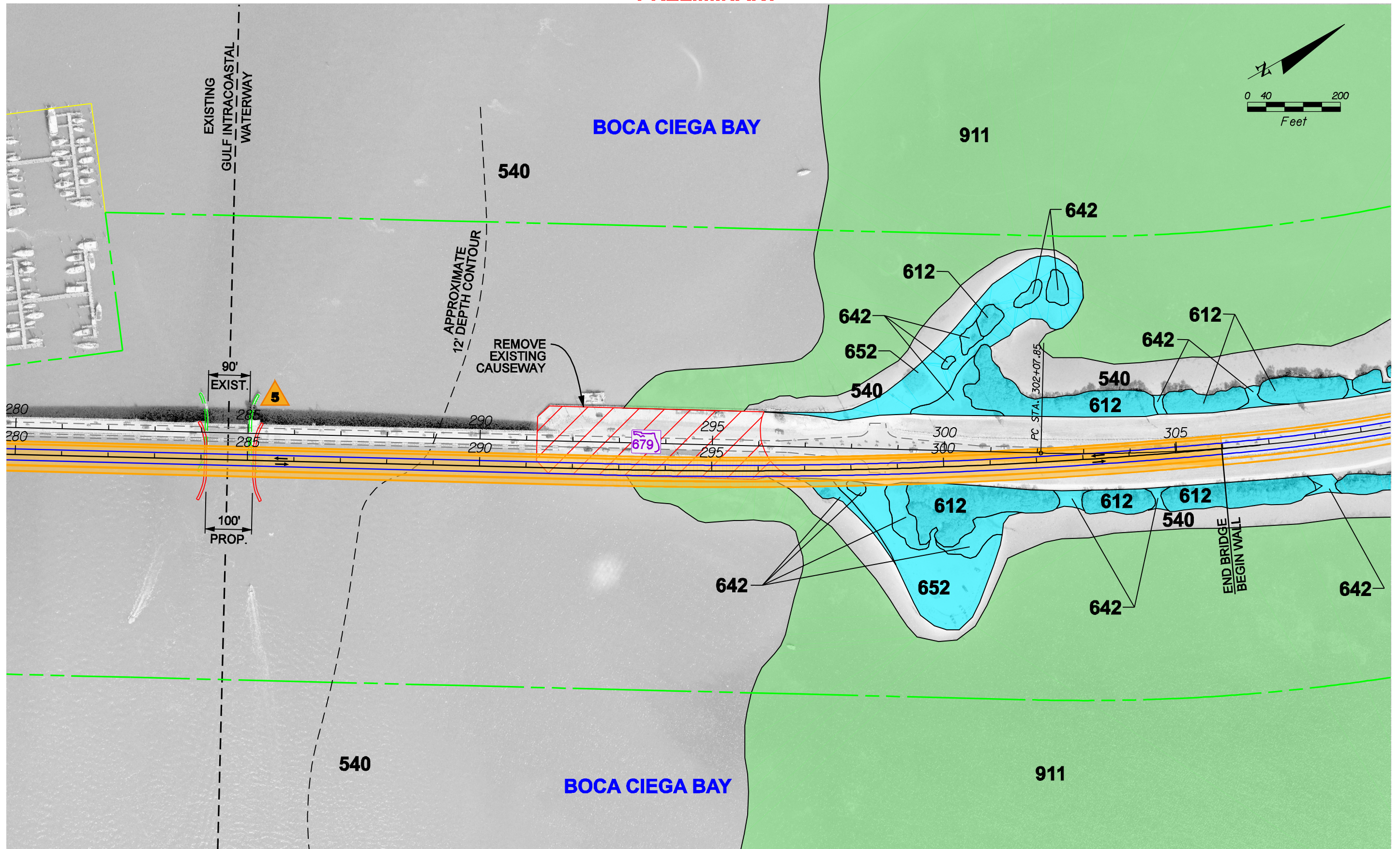
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			POTENTIAL CONTAMINATION SITE
			NUMBER OF BUSINESS RELOCATIONS

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S.R. 679	PINELLAS	410755-1-22-01

S.R. 679 (PINELLAS BAYWAY STRUCTURE E)
 AT INTRACOASTAL WATERWAY
 CONCEPT PLANS

SHEET NO.
1



ALTERNATIVE 5: HIGH-LEVEL FIXED BRIDGE OVER EXISTING CHANNEL

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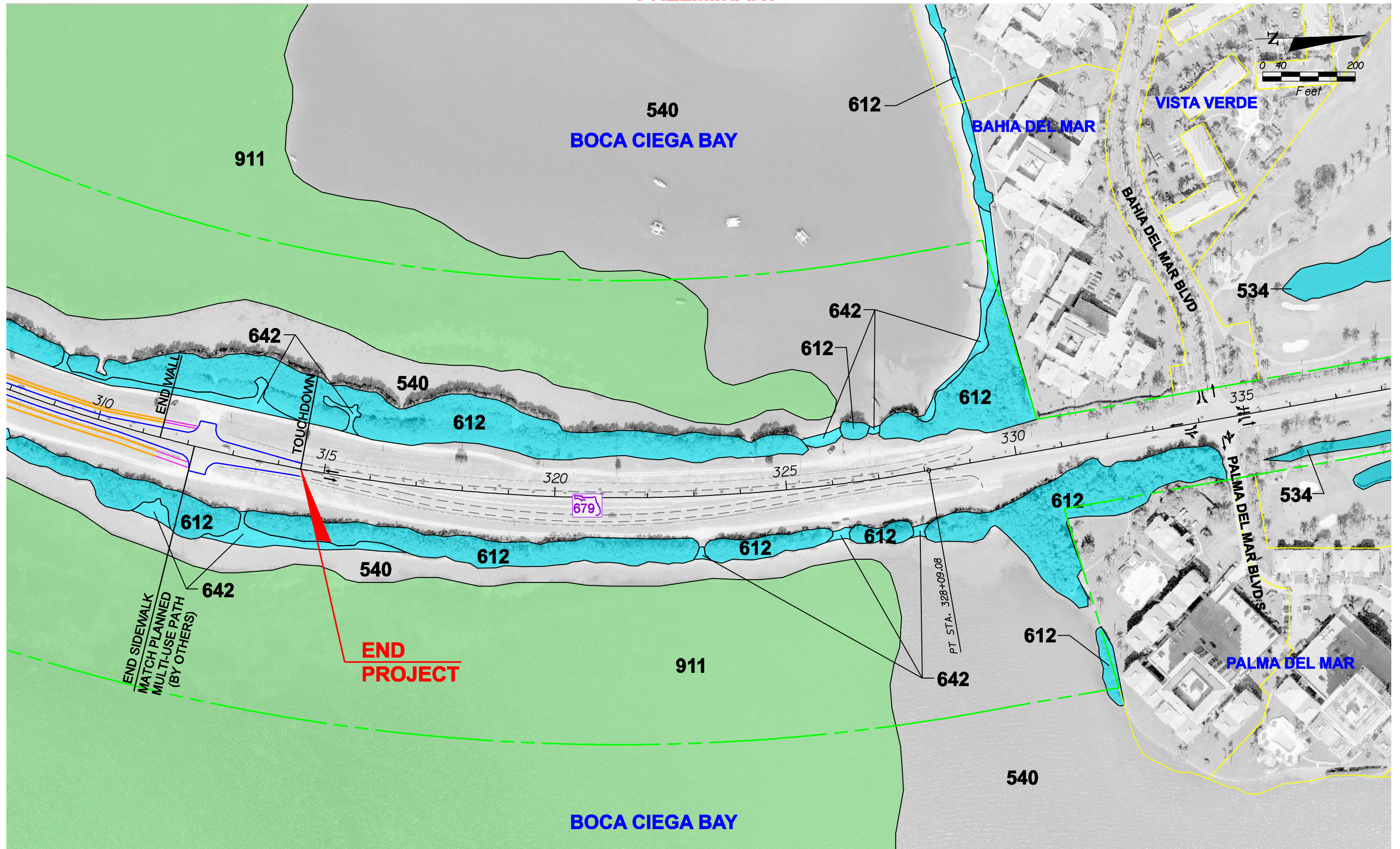
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	PROPOSED RIGHT-OF-WAY		WETLANDS
	PROPOSED EDGE OF PAVEMENT		SEAGRASS
			POTENTIAL CONTAMINATION SITE
			NUMBER OF BUSINESS RELOCATIONS

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
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**S.R. 679 (PINELLAS BAYWAY STRUCTURE E)
AT INTRACOASTAL WATERWAY
CONCEPT PLANS**

SHEET NO.
2



ALTERNATIVE 5: HIGH-LEVEL FIXED BRIDGE OVER EXISTING CHANNEL

USER: 15309 07/18/2006 3:27:34 PM P:\proj\679\679_CADD\plan-fix-EXCH03.dgn

	BASELINE SURVEY/ CENTERLINE OF CONSTRUCTION		PROPOSED BRIDGE
	PARCEL LINES		PROPOSED BARRIER/RETAINING WALL
	EXISTING EDGE OF PAVEMENT		PROPOSED SIDEWALK
	EXISTING RIGHT-OF-WAY		612 FLUCFC CODES
	PROPOSED RIGHT-OF-WAY		612 WETLANDS
	PROPOSED EDGE OF PAVEMENT		911 SEAGRASS
			POTENTIAL CONTAMINATION SITE NUMBER OF BUSINESS RELOCATIONS

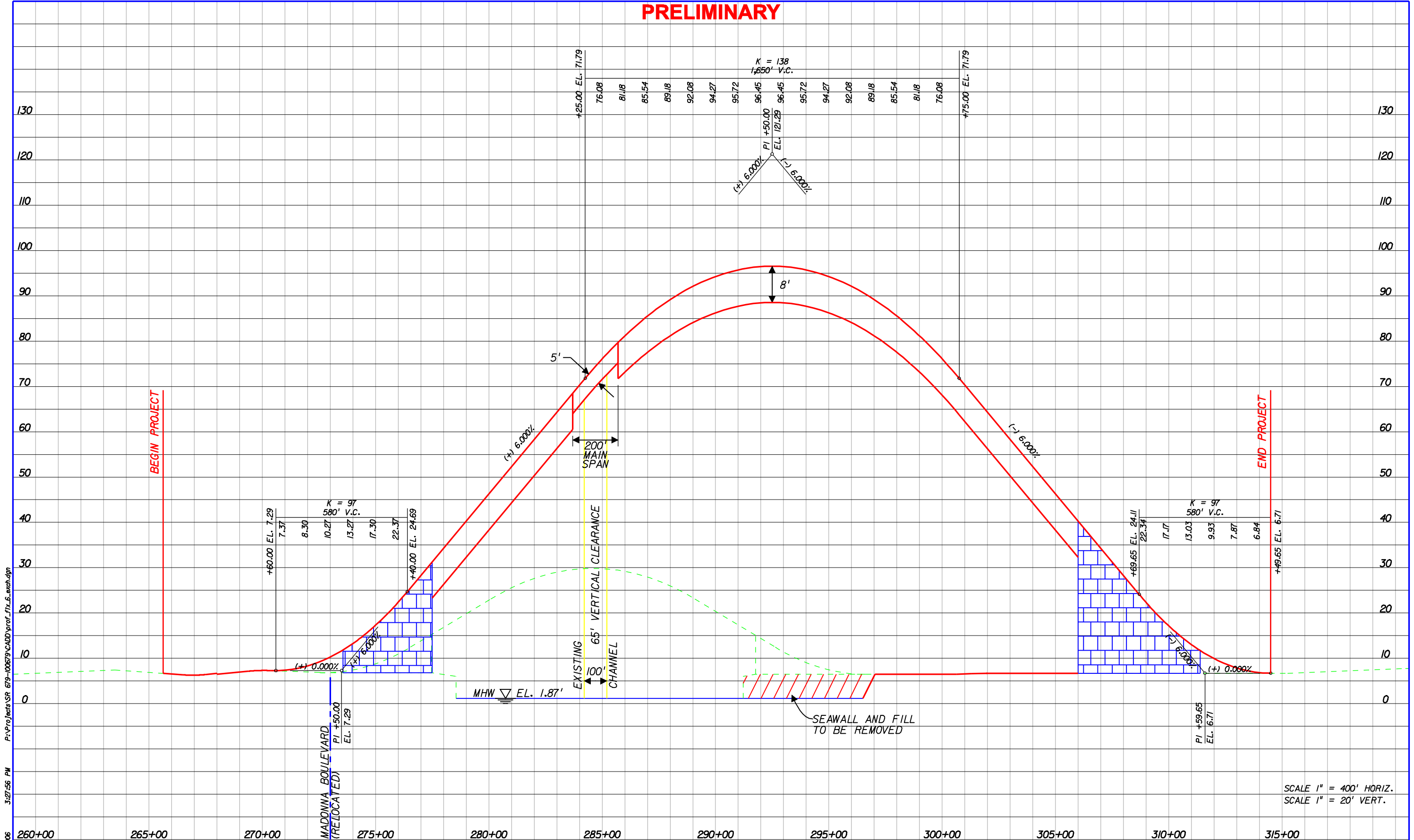
5300 West Cypress Street
 Suite 200
 Tampa, Florida 33607-1768
 (813) 282-7275

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
S.R. 679	PINELLAS	410755-1-22-01

**S.R. 679 (PINELLAS BAYWAY STRUCTURE E)
 AT INTRACOASTAL WATERWAY
 CONCEPT PLANS**

SHEET NO.
3

PRELIMINARY



ALTERNATIVE 5: HIGH-LEVEL FIXED BRIDGE OVER EXISTING CHANNEL

07/18/2006 3:27:56 PM P:\Projects\SR 679-00679\CADD\prof-ftr-6.exch.dgn USER: 15309

SCALE 1" = 400' HORIZ.
SCALE 1" = 20' VERT.

LEGEND

- - - EXISTING PROFILE
- PROPOSED PROFILE
- RETAINING WALL

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 (813) 282-7275

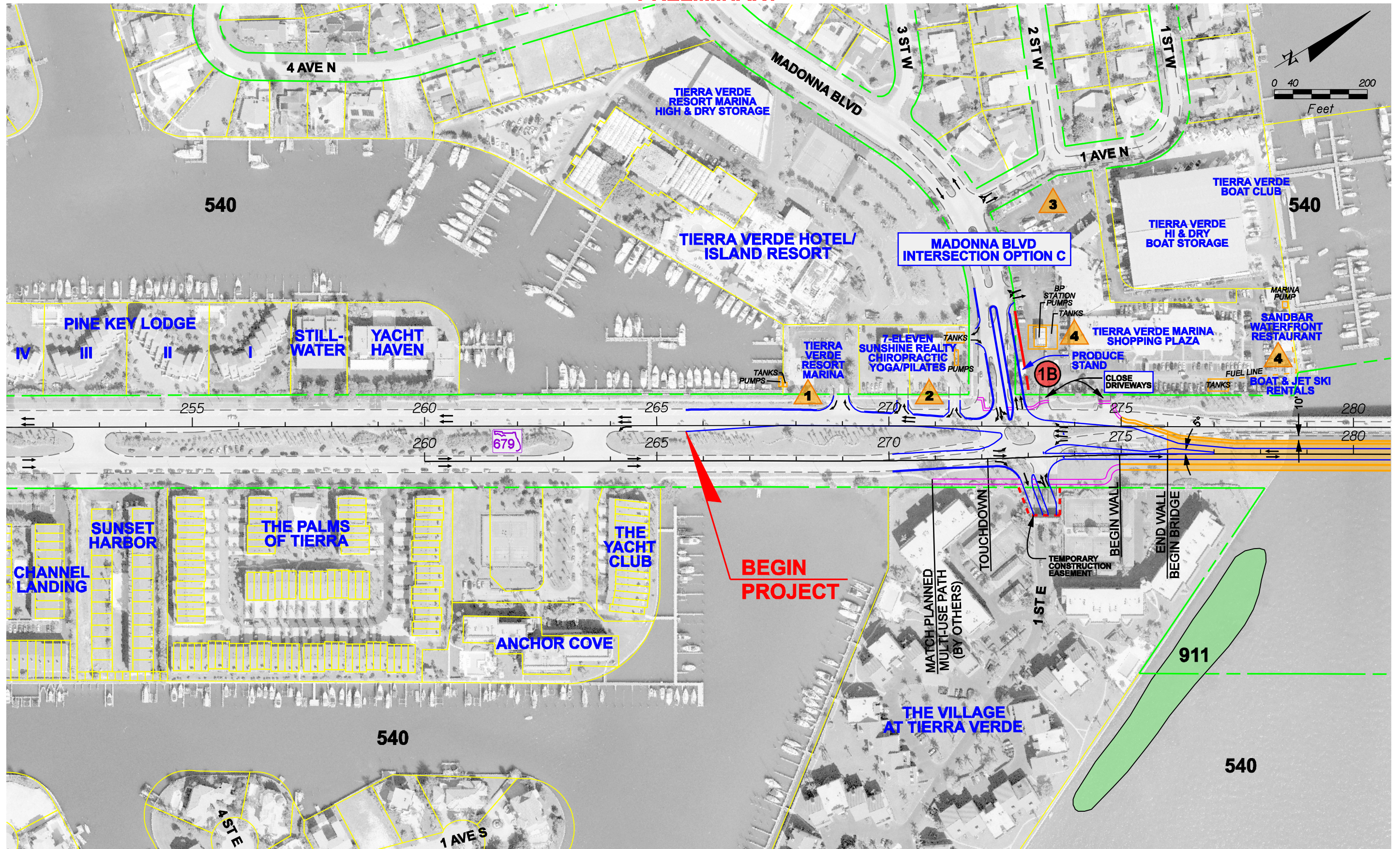
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
S.R. 679	PINELLAS	410755-1-22-01

**S.R. 679 (PINELLAS BAYWAY STRUCTURE E)
 AT INTRACOASTAL WATERWAY
 HIGH-LEVEL FIXED BRIDGE PROFILE
 EXISTING CHANNEL 6 PERCENT GRADE**

SHEET NO.
4

PRELIMINARY

FLIGHT DATE: MAY 7, 2005



ALTERNATIVE 6: HIGH-LEVEL FIXED BRIDGE OVER RELOCATED CHANNEL

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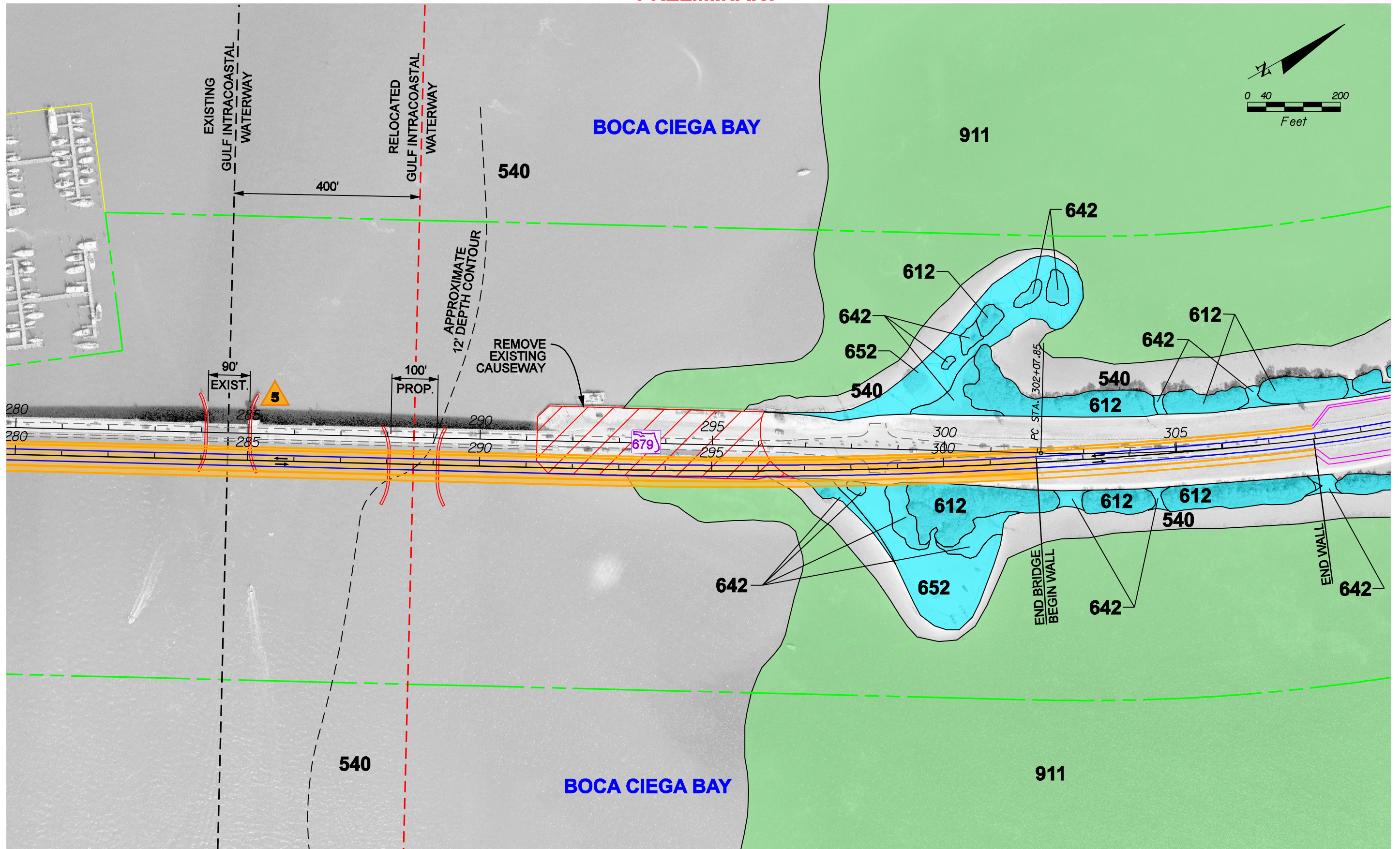
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	PARCEL LINES		PROPOSED BARRIER/RETAINING WALL
	EXISTING EDGE OF PAVEMENT		PROPOSED SIDEWALK
	EXISTING RIGHT-OF-WAY	612	FLUCFC CODES
	PROPOSED RIGHT-OF-WAY		WETLANDS
	PROPOSED EDGE OF PAVEMENT		SEAGRASS
	POTENTIAL CONTAMINATION SITE		NUMBER OF BUSINESS RELOCATIONS

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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
S.R. 679	PINELLAS	410755-1-22-01

S.R. 679 (PINELLAS BAYWAY STRUCTURE E)
 AT INTRACOASTAL WATERWAY
 CONCEPT PLANS

SHEET NO.
1



ALTERNATIVE 6: HIGH-LEVEL FIXED BRIDGE OVER RELOCATED CHANNEL

07/18/2006 3:29:54 PM P:\Projects\SR 679-100679\CADD\plan-Fix-R002.dgn USER: 15309

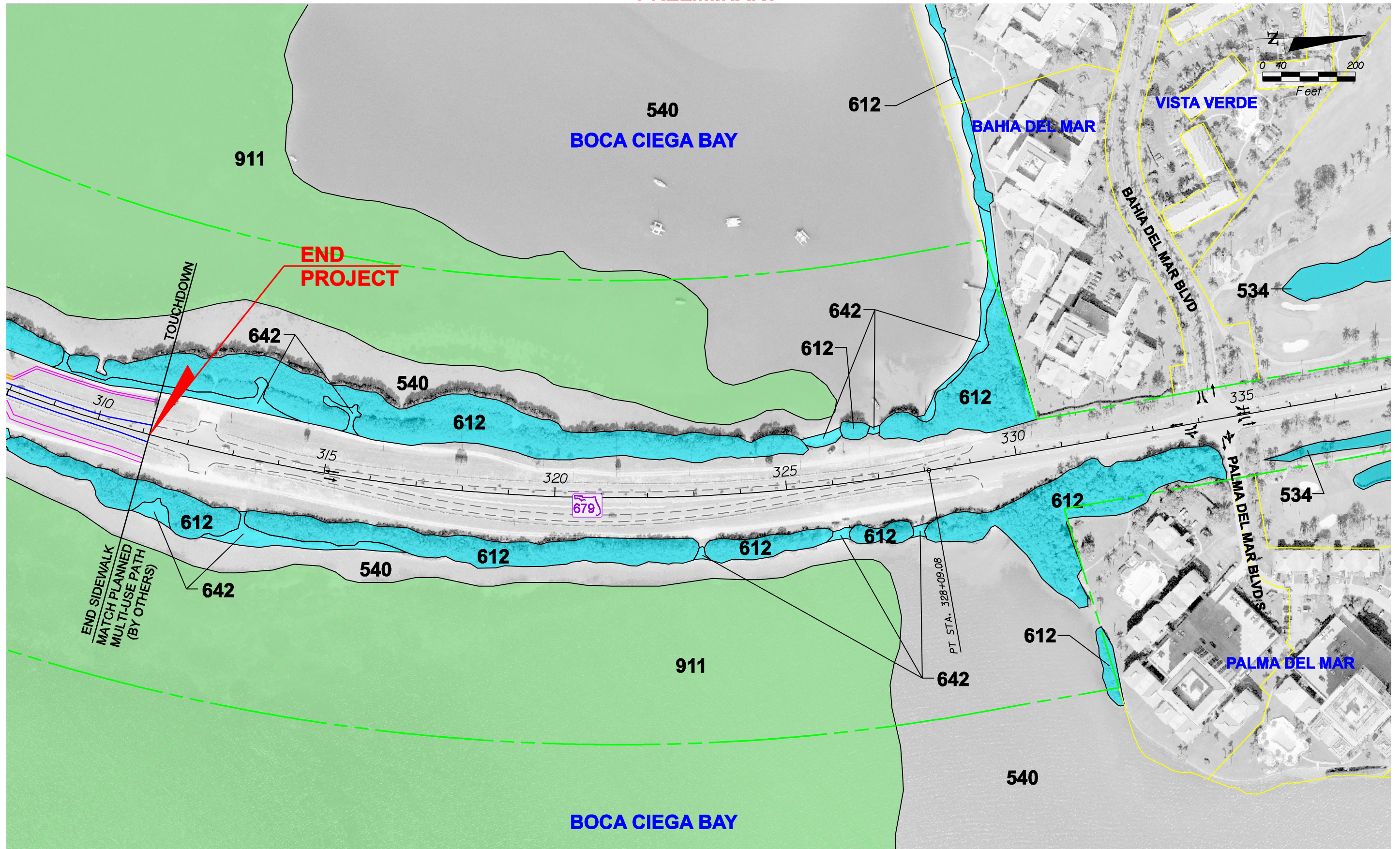
300	BASLINE SURVEY/ CENTERLINE OF CONSTRUCTION		PROPOSED BRIDGE
	PARCEL LINES		PROPOSED BARRIER/RETAINING WALL
	EXISTING EDGE OF PAVEMENT		PROPOSED SIDEWALK
	EXISTING RIGHT-OF-WAY	612	FLUCFC CODES
	PROPOSED RIGHT-OF-WAY		WETLANDS
	PROPOSED EDGE OF PAVEMENT		SEAGRASS
	POTENTIAL CONTAMINATION SITE NUMBER OF BUSINESS RELOCATIONS		

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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
S.R. 679	PINELLAS	410755-1-22-01

**S.R. 679 (PINELLAS BAYWAY STRUCTURE E)
AT INTRACOASTAL WATERWAY
CONCEPT PLANS**

SHEET NO.
2



ALTERNATIVE 6: HIGH-LEVEL FIXED BRIDGE OVER RELOCATED CHANNEL

USER: 15309 07/18/2006 3:50:20 PM P:\Projects\SR 679-100679\CADD\plan-fix-R003.dgn

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	PARCEL LINES		PROPOSED BARRIER/RETAINING WALL
	EXISTING EDGE OF PAVEMENT		PROPOSED SIDEWALK
	EXISTING RIGHT-OF-WAY		612 FLUCFC CODES
	PROPOSED RIGHT-OF-WAY		WETLANDS
	PROPOSED EDGE OF PAVEMENT		SEAGRASS
	POTENTIAL CONTAMINATION SITE NUMBER OF BUSINESS RELOCATIONS		

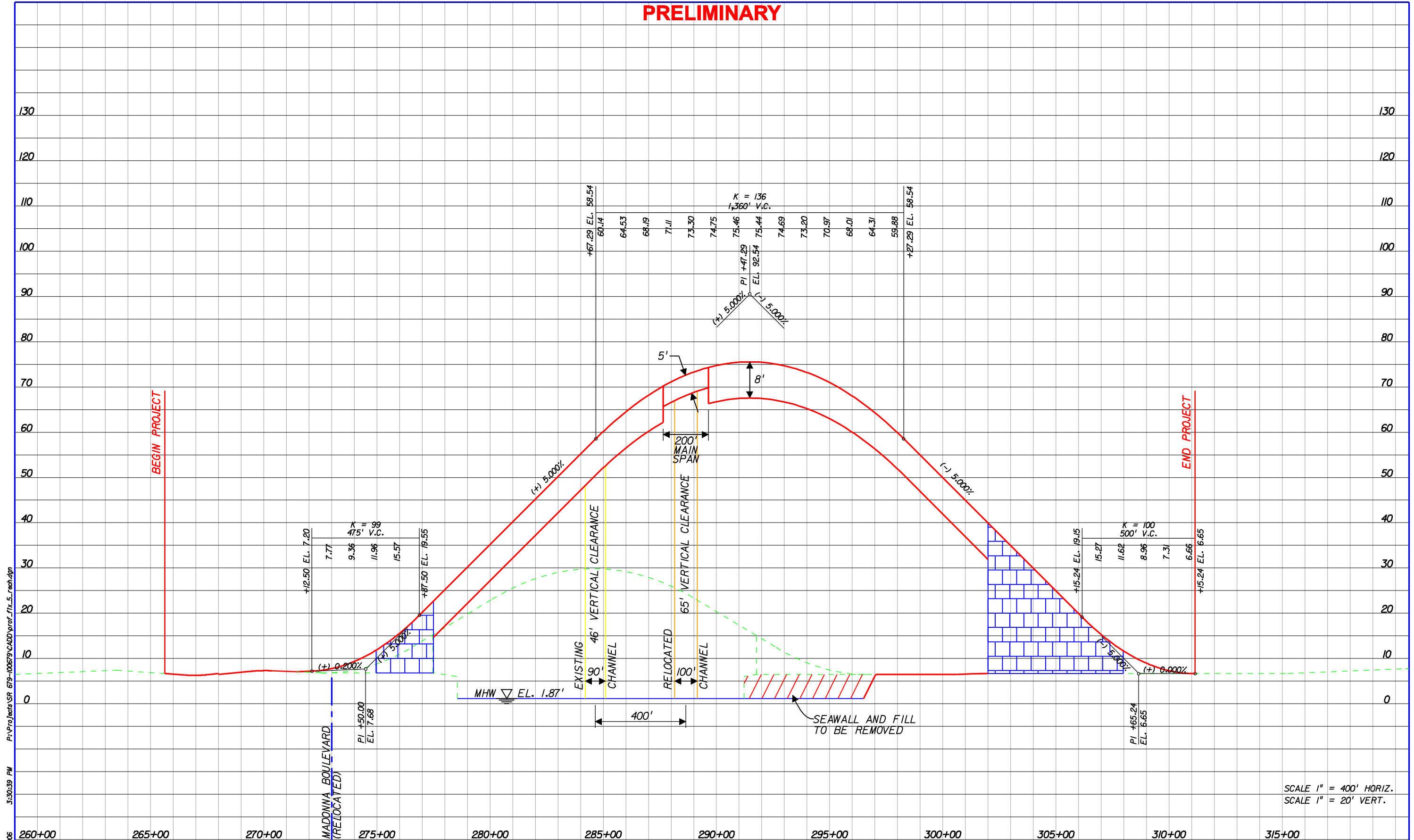
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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
S.R. 679	PINELLAS	410755-1-22-01

**S.R. 679 (PINELLAS BAYWAY STRUCTURE E)
 AT INTRACOASTAL WATERWAY
 CONCEPT PLANS**

SHEET NO.
3

PRELIMINARY



SCALE 1" = 400' HORIZ.
SCALE 1" = 20' VERT.

ALTERNATIVE 6: HIGH-LEVEL FIXED BRIDGE OVER RELOCATED CHANNEL

USER: 15309 07/18/2006 3:30:39 PM P:\Projects\SR 679-100679\CADD\prof-fra-5-rech.dgn

LEGEND

- - - EXISTING PROFILE
- PROPOSED PROFILE
- RETAINING WALL

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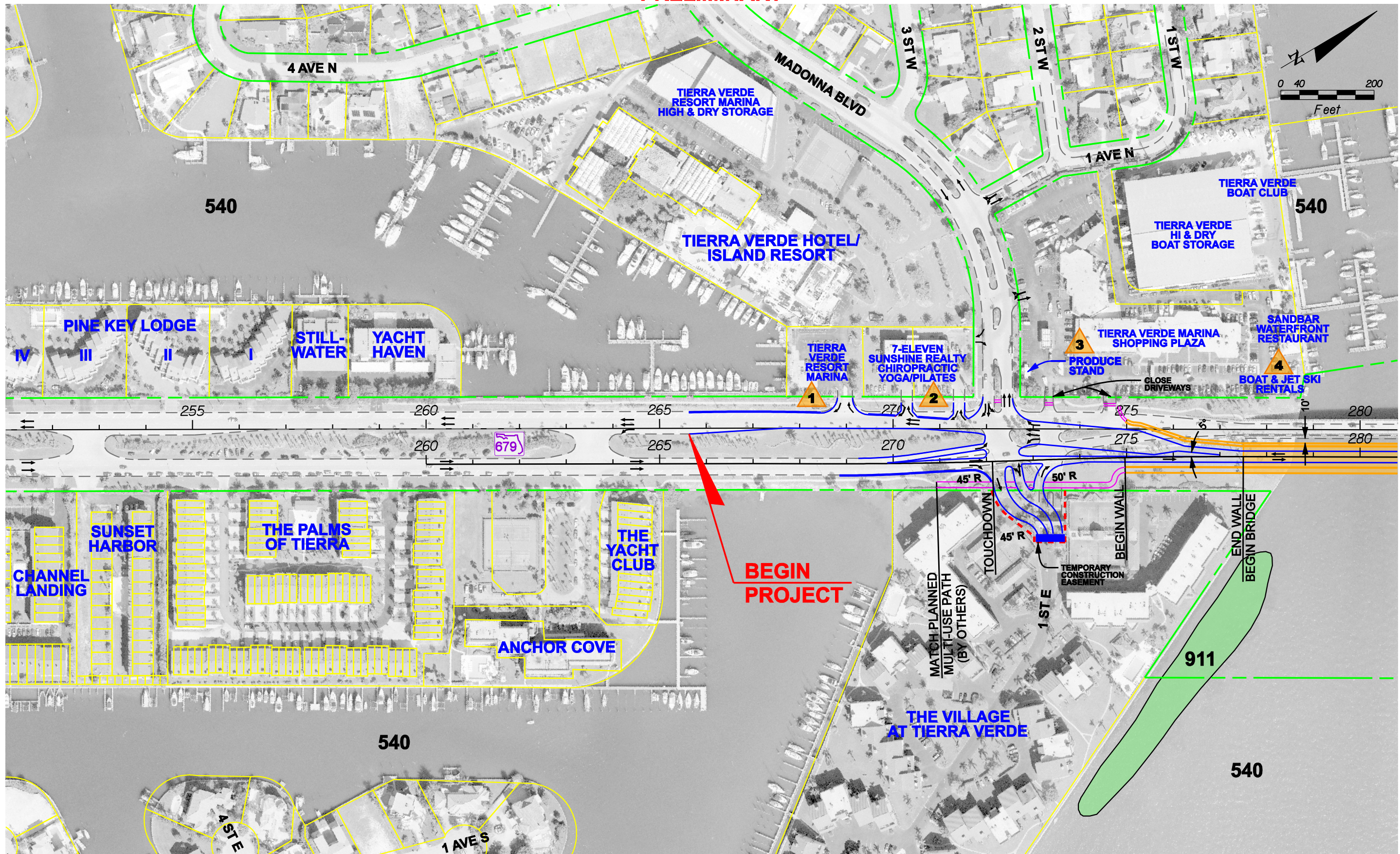
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
S.R. 679	PINELLAS	410755-1-22-01

**S.R. 679 (PINELLAS BAYWAY STRUCTURE E)
 AT INTRACOASTAL WATERWAY
 HIGH-LEVEL FIXED BRIDGE PROFILE
 RELOCATED CHANNEL 5 PERCENT GRADE**

SHEET NO.
4

PRELIMINARY

FLIGHT DATE: MAY 7, 2005



INTERSECTION OPTION A - RELOCATED VILLAGE DRIVEWAY

USER: 20172 04/03/2006 3:44:31 PM P:\proj\679\SR_679-100679\CADD\plan-reloc_village.dgn

	BASLINE SURVEY/ CENTERLINE OF CONSTRUCTION
	PARCEL LINES
	EXISTING EDGE OF PAVEMENT
	EXISTING RIGHT-OF-WAY
	PROPOSED RIGHT-OF-WAY

LEGEND

	PROPOSED BRIDGE
	PROPOSED BARRIER/RETAINING WALL
	PROPOSED EDGE OF PAVEMENT
	PROPOSED SIDEWALK
612	FLUCFC CODES

	WETLANDS
	SEAGRASS
	POTENTIAL CONTAMINATION SITE
	NUMBER OF BUSINESS RELOCATIONS

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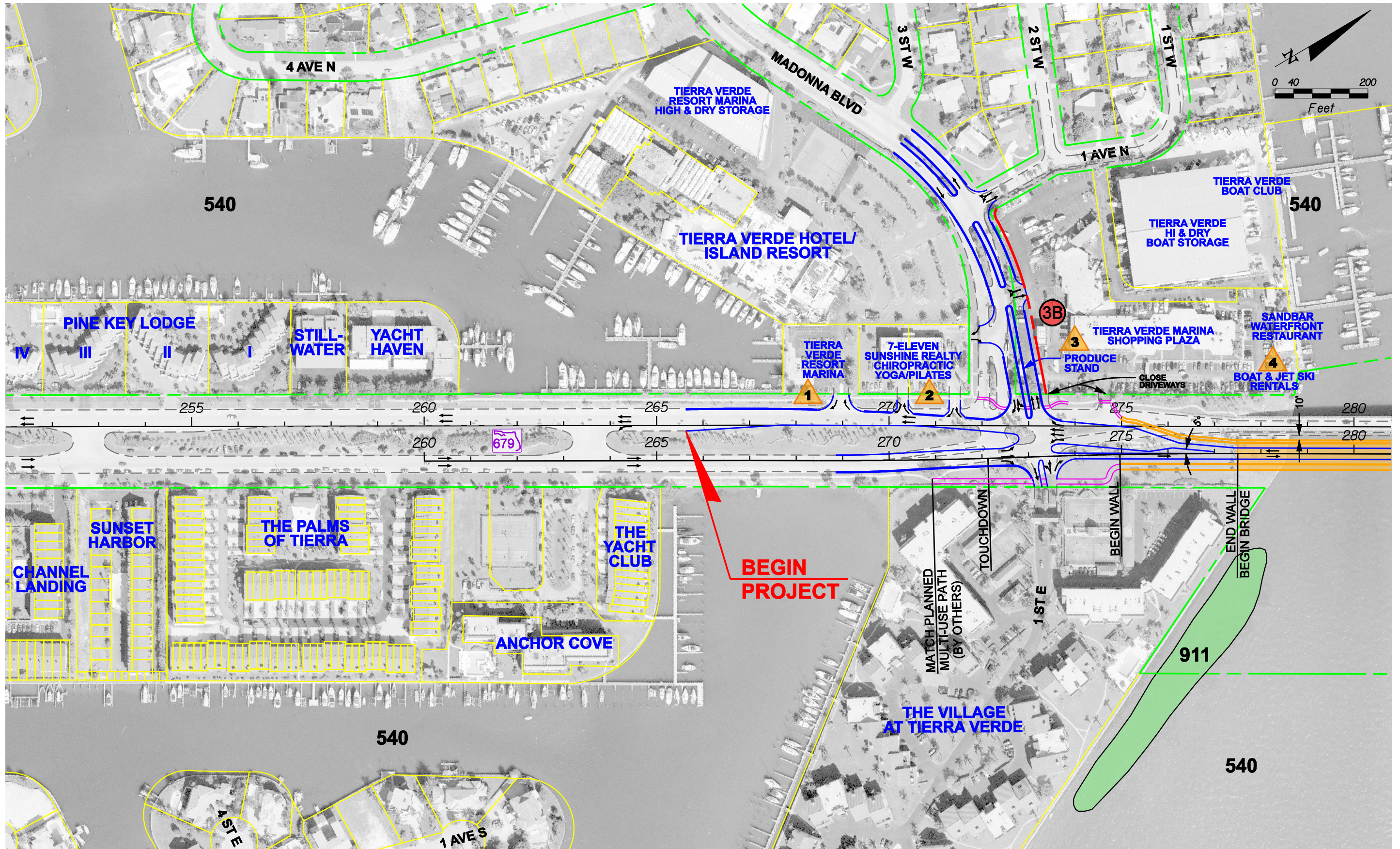
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
S.R. 679	PINELLAS	410755-1-22-01

**S.R. 679 (PINELLAS BAYWAY STRUCTURE E)
 AT INTRACOASTAL WATERWAY
 CONCEPT PLANS**

SHEET NO.
1

PRELIMINARY

FLIGHT DATE: MAY 7, 2005



INTERSECTION OPTION B - RELOCATED MADONNA BOULEVARD

USER: 20172 04/03/2006 3:44:53 PM P:\p\proj\679\SR 679-100679\CADD\plan-reloc_madonna.dgn

- 300 BASELINE SURVEY/ CENTERLINE OF CONSTRUCTION
- PARCEL LINES
- EXISTING EDGE OF PAVEMENT
- EXISTING RIGHT-OF-WAY
- PROPOSED RIGHT-OF-WAY

- LEGEND**
- PROPOSED BRIDGE
 - PROPOSED BARRIER/RETAINING WALL
 - PROPOSED EDGE OF PAVEMENT
 - PROPOSED SIDEWALK
 - 612 FLUCFC CODES

- WETLANDS
- SEAGRASS
- POTENTIAL CONTAMINATION SITE
- NUMBER OF BUSINESS RELOCATIONS

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 Suite 200
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 (813) 282-7275

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
S.R. 679	PINELLAS	410755-1-22-01

**S.R. 679 (PINELLAS BAYWAY STRUCTURE E)
 AT INTRACOASTAL WATERWAY
 CONCEPT PLANS**

SHEET NO.
1

APPENDIX B
UMAM FORMS

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name SR 679 Bayway Bridge, Structure E		Application Number F.P.I. # 410755-1-22-01	Assessment Area Name or Number Seagrass Meadow
FLUCCs code 911 Seagrass	Further classification (optional) E2AB31A	Impact or Mitigation Site? Impact	Assessment Area Size
Basin/Watershed Name/Number Boca Ciega Bay Tampa Bay	Affected Waterbody (Class) Class II	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance) Outstanding Florida Water, Pinellas	
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands Adjacent to SR 679 causeway; partial seawall the remained unconsolidated shore with mangrove unconsolidated shore		County Aquatic Preserve	
Assessment area description Thalassia testudinum / Halodule wrightii mixed seagrass bed			
Significant nearby features dredged channel to south causeway to the west		Uniqueness (considering the relative rarity in relation to the regional landscape.) no	
Functions Production Export, Foraging Shelter, sediment stabilization Nutrient Recycling		Mitigation for previous permit/other historic use no	
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) Essential fish Habitat - juvenile fisheries		Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) Trichechus manatus = E juvenile sea turtles = E, T	
Observed Evidence of Wildlife Utilization (List species <u>directly observed</u> , or other signs such as tracks, droppings, casings, nests, etc.): snook mullet sea trout sheepshead			
Additional relevant factors:			
Assessment conducted by: Todd Markelburg		Assessment date(s): November 4, 2005	

PART II – Quantification of Assessment Area (impact or mitigation)
 (See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name SR 679 Bayway Bridge, Structure E	Application Number F.R.I. # 410755-1-22-01	Assessment Area Name or Number Seagrass Meadow
Impact or Mitigation Impact	Assessment conducted by: Todd Meeklenborg	Assessment date: November 4, 2005

Scoring Guidance
 The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed

Optimal (10)	Moderate (7)	Minimal (4)	Not Present (0)
Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	a high	- channel, small (barriers, degraders)		
	b low			
c medium				
d low				
e medium				
f med				
g low				
w/o pres or current	7		with	
				→ negative - causeway features adjacent
.500(6)(b) Water Environment (n/a for uplands)	a -	- small reflection (turbidity) (resuspension in particular)		
	b -			
c -				
d yes				
e -				
f -				
g low				
h high				
i high				
j medium				
k medium				
l medium				
w/o pres or current	8	with		
			erosion	
.500(6)(c) Community structure	1. 8	good biomass, appropriate species		
	2. 8			
w/o pres or current	8	with		

Score = sum of above scores/30 (if uplands, divide by 20)

current	
or w/o pres	with
.8	

If preservation as mitigation,

Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas

FL = delta x acres =

Delta = [with-current]

--

If mitigation

Time lag (t-factor) =
Risk factor =

For mitigation assessment areas

RFM = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name SR 679 Bayway Bridge Structure E		Application Number F.P.I. # 410755-1-22-01	Assessment Area Name or Number Mangrove Fringe
FLUCCs code 612 Mangrove	Further classification (optional) E2SS3P	Impact or Mitigation Site? Impact	Assessment Area Size
Basin/Watershed Name/Number Boca Ciega Bay Tampa Bay	Affected Waterbody (Class) Class II	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance) Outstanding Florida Water, Pinellas County A.P.	
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands lower slope of SR 679 causeway; waterward unconsolidated shore and seagrass beds, landward turf grass - maintained marshy Bahia			
Assessment area description narrow fringe of white (<i>Laguncularia racemosa</i>), black (<i>Avicennia germinans</i>) and Red (<i>Rhizophora mangle</i>) along causeway			
Significant nearby features SR 679 causeway; road pavement		Uniqueness (considering the relative rarity in relation to the regional landscape.) no	
Functions Shoreline Stabilization + Storm Protection Habitat Value to wildlife Endangered species utilization Value to Sport + Commercial Fisheries		Mitigation for previous permit/other historic use no	
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) mangrove water snake low tide - herons, egrets, ibises bitterns, brown pelicans high tide - shrimp, snook, redfish		Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) Wood Storks - E Roseate spoonbills - SSC Herons - SSC Egrets - SSC	
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.): Yellow-crowned night heron, great blue heron - foraging various wading birds roosting			
Additional relevant factors:			
Assessment conducted by: D.D. Mecklenborg		Assessment date(s): November 4, 2005	

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number <i>Mangrove Fringe</i>
Impact or Mitigation	Assessment conducted by: <i>T. Mecklenborg</i>	Assessment date: <i>Nov 5, 2005</i>

Scoring Guidance
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed

Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

<p>.500(6)(a) Location and Landscape Support</p> <p>w/o pres or current <input type="checkbox"/> with <input type="checkbox"/></p> <p><i>5</i></p>	<p><i>along man-made causeway, road adjacent, moving of upland ecotone, brazilian pepper, isolated from native habitats</i> (pollutant runoff)</p>
<p>.500(6)(b) Water Environment (n/a for uplands)</p> <p>w/o pres or current <input type="checkbox"/> with <input type="checkbox"/></p> <p><i>4</i></p>	<p><i>Seawalls, erosion from currents, limited wildlife use due to location and size</i></p>
<p>.500(6)(c) Community structure</p> <p>1. Vegetation and/or 2. Benthic Community</p> <p>w/o pres or current <input type="checkbox"/> with <input type="checkbox"/></p> <p><i>5</i></p>	<p><i>fair heterogeneity, topography (limited steep (narrow, slope))</i></p> <p><i>some exotics, no management except for mowing grass along road-way</i></p>

Score = sum of above scores/30 (if uplands, divide by 20)

current or w/o pres with

.466 = .5

If preservation as mitigation,

Preservation adjustment factor =

Adjusted mitigation delta =

For impact assessment areas

FL = delta x acres =

Delta = [with-current]

If mitigation

Time lag (t-factor) =

Risk factor =

For mitigation assessment areas

RFG = delta/(t-factor x risk) =

APPENDIX C
MANATEE AND SEA TURTLE WATCH
PROGRAM GUIDES
SEA TURTLE AND SMALLTOOTH SAWFISH
CONSTRUCTION CONDITIONS

MANATEE AND SEA TURTLE WATCH PROGRAM GUIDELINES
U.S. Fish and Wildlife Service

The contractor and subcontractors shall ensure that care is taken to conduct all construction and related activities with caution relative to any endangered or threatened species protected by the Federal Endangered Species Act of 1973, the Florida Manatee Act, and the Federal Marine Mammal Protection Act of 1972, as amended. All construction personnel shall be advised of the potential presence of these species, of their endangered or threatened status, of their federal or state protection, and of the need to refrain from any action that would jeopardize the well-being of these species.

To minimize the potential impacts of bridge construction on manatees and sea turtles, a continuous Manatee and Sea Turtle Watch Program (MWP) will be established. The following conditions constitute the MWP and shall be included as special provisions; no blasting or demolition activities are required.

1. Seven days prior to the first bridge-related construction event, the contractors will provide the U.S. Fish and Wildlife Service (USFWS) and the Florida Fish and Wildlife Conservation Commission (FWC), Bureau of Protected Species Management a list of the chief and primary observers for the MWP and their qualifications. An outline of the MWP will also be submitted seven days prior to the first such event.

The outline will include time tables for any dredging, or construction watercraft activity; time tables for the MWP (start times for aerial survey as hereinafter required, and other survey positions); observer positions; a copy of the MWP log sheet; and map to record manatee sightings.

2. A formal MWP coordination meeting will be held at least two days prior to the first bridge-related construction event. Attendees will include the MWP chief and primary observers, construction contractors, FDOT, USFWS, FWC and other interested parties, such as the U.S. Coast Guard. All will be informed about the possible presence of manatees/sea turtles in the area, and that civil or criminal penalties can result from intentional or negligent annoyance, disturbance, harassment, molestation, capture, collection, injury and/or death of an endangered species or any part thereof. The construction contractors, and primary observer will present the protocol and logistics of bridge-related construction activities and the outline specified in condition No. 1.

3. All observers will follow the protocol established for the MWP and will conduct the watch in good faith and to the best of their ability.

4. Each observer will be equipped with a two-way radio that will be dedicated exclusively to the MWP. Observers will also be equipped with polarized sunglasses, binoculars, a red flag for a backup visual communication system, and a sighting log with a map to record sightings at the bridge construction site and vicinity.

5. Any problems encountered during bridge construction events will be evaluated by the observers and contractors and logistical solutions will be presented to the USFWS and FWC. Corrections to the MWP will be made prior to the next event.
6. If an injured or dead manatee/sea turtle is sighted during construction, an observer will contact the Florida Fish and Wildlife Conservation Commission, Division of Law Enforcement, Tampa Office (813) 272-2516. In any such case, an observer will also call the USFWS Jacksonville Field Office at (904) 232-2580. The observer will act according to the situation and will maintain contact with the injured or dead manatee/sea turtle. The foregoing telephone numbers shall be posted at all on-site telephones.
7. If an injured or dead manatee/sea turtle is rescued/recovered within three miles up or down the waterway from the bridge site during construction or if the injury/death of any manatee/sea turtle in the vicinity is documented to be caused by construction activity, that activity will be postponed until cause of injury or mortality can be determined by FWC and USFWS. If injuries are substantially documented, all contributing construction activities will be suspended and the principle parties will meet to determine a better way to conduct the activity.
8. Operators of watercraft will be responsible for any collisions with manatees/sea turtles. Vessels associated with the project should operate at slow (no wake) speed while in shallow water, especially where the draft of the boat provides less than 3 feet of clearance with the bottom. Workboats should load and off-load at designated sites. Vessels used to transport personnel shall be shallow-draft vessels of the light displacement category, and shall follow routes of deep water to the maximum extent possible where navigational safety permits.
9. When turbidity barriers are used to prevent or minimize degradation of water quality, the barriers shall be of appropriate dimension to restrict the animals' access to the work area and to allow egress of any manatees/sea turtles that may enter the work area. Under such conditions, the barriers should use tangle-resistant or hemp rope when anchoring, or employ surface anchors to prevent entangling manatees. Continuous surveillance will be maintained in order to free animals that may become trapped in silt or turbidity barriers.
10. Construction debris shall not be discarded into the water.
11. Signs will be posted on-site warning of the presence of manatees/sea turtles, their endangered status, and precautions needed.
12. Within two weeks (14 days) after completion of all bridge-related construction, the chief observer will submit a report to the USFWS and FWC providing the names of the observers and their positions during the event, number and location of manatees/sea turtles seen and what actions were taken.
13. If any one of the above conditions is not met prior to or during the applicable activity, the chief observer of the MWP will have the authority to terminate the activity.

Any liability for a violation of the above protective measures will be assumed by the construction contractors.

**SEA TURTLE AND SMALLTOOTH SAWFISH CONSTRUCTION
CONDITIONS – National Marine Fisheries Service**

The permittee shall comply with the following protected species construction conditions:

- a. The permittee shall instruct all personnel associated with the project of the potential presence of these species and the need to avoid collisions with sea turtles and smalltooth sawfish. All construction personnel are responsible for observing water-related activities for the presence of these species.
- b. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing sea turtles or smalltooth sawfish, which are protected under the Endangered Species Act of 1973.
- c. Siltation barriers shall be made of material in which a sea turtle or smalltooth sawfish cannot become entangled, be properly secured, and be regularly monitored to avoid protected species entrapment. Barriers may not block sea turtle or smalltooth sawfish entry to or exit from designated critical habitat without prior agreement from the National Marine Fisheries Service's Protected Resources Division, St. Petersburg, Florida.
- d. All vessels associated with the construction project shall operate at "no wake/idle" speeds at all times while in the construction area and while in water depths where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will preferentially follow deep-water routes (e.g., marked channels) whenever possible.
- e. If a sea turtle or smalltooth sawfish is seen within 100 yards of the active daily construction/dredging operation or vessel movement, all appropriate precautions shall be implemented to ensure its protection. These precautions shall include cessation of operation of any moving equipment closer than 50 feet of a sea turtle or smalltooth sawfish. Operation of any mechanical construction equipment shall cease immediately if a sea turtle or smalltooth sawfish is seen within a 50-ft radius of the equipment. Activities may not resume until the protected species has departed the project area of its own volition.
- f. Any collision with and/or injury to a sea turtle or smalltooth sawfish shall be reported immediately to the National Marine Fisheries Service's Protected Resources Division (727-824-5312) and the local authorized sea turtle stranding/rescue organization.

APPENDIX D
MARINE WILDLIFE SAFETY PLAN

MARINE WILDLIFE SAFETY PLAN

INTRODUCTION

To address the potential demolition (blasting) activities that may be associated with the S.R. 679 (Pinellas Bayway Structure E) project, this Marine Wildlife Safety Plan is proposed. The intent of this plan is to assure the safety of protected marine species within an established zone of influence in the event blasting activities are required for demolition of existing structures.

The blasting plan includes a number of blast procedures that will be implemented to provide protection for marine mammals and turtles. The specific detonation sequence is outlined in the main body of the blasting plan.

New guidelines are being developed by National Marine Fisheries Service. For this project, the four different zones are defined as follows:

- Injury Zone – the distance beyond which mortality is not expected;
- Harassment Zone – the distance beyond which the potential for injury is not expected;
- Impact Zone – the distance beyond which no potential for adverse effects is expected; and
- Watch Zone – an additional buffer that may be monitored to detect animals that are heading toward the impact zone.

IMPACT ZONE

The impact zone is the distance beyond which no potential for adverse effects is expected. Distance-wise, this is really the same as the limit of the harassment zone since it is defined as the injury zone plus the harassment zone.

The impact zone will be calculated using the following formula:

$$R = 560(W)^{1/3}$$

Where:

R=impact zone radius (in feet)

W=maximum weight of explosive in pounds per delay

The limits of the harassment zone and injury zone will be clearly identified with two separate buoy colors.

Preceding the blast, all communication equipment will be tested to ensure it is functioning correctly.

MARINE WILDLIFE WATCH PROGRAM

To minimize the potential impact to marine wildlife during demolition activities that may be required for the existing S.R. 679 (Pinellas Bayway Structure E), a continuous Marine Wildlife Watch Program (MWP) will be established for all blasting events. The following conditions outline the MWP and are a part of the blasting plan:

1. A formal MWP coordination meeting will be held at least one week prior to the first blast event. Attendees will include the MWP observers, general contractor, demolition subcontractors, Florida Department of Transportation (FDOT), U.S. Fish and Wildlife Service (USFWS), FWC, and/or the U.S. Coast Guard. All will be informed about the possible presence of manatees, dolphins, marine turtles, or other marine life in the area and that civil or criminal penalty can result for harassment, injury, and/or death of a protected species. The scope of work, protocol, and logistics of the blast day events will also be addressed at this time.
2. The observers shall have previous experience and shall be included in the Florida Fish and Wildlife Conservation Commission (FWC) Manatee Watch Observer List. A total of four (4) observers will be utilized for above water blasts. A total of five (5) observers shall be utilized for submerged blasts. The additional person shall be an aerial observer in a helicopter.
3. The observers will be placed on the adjacent bridge or an appropriate location with clear line-of-sight of the water.
4. An MWP log sheet shall be utilized to map and record all sightings of protected species.
5. Observers will follow the protocol established for the MWP and will conduct the watch in good faith and to the best of their ability.
6. Each observer will be equipped with a two-way radio that will be dedicated exclusively to the MWP. Observers will also be equipped with polarized sunglasses, binoculars, a red flag for a backup visual communication system, and a manatee/marine wildlife sighting log with a map to record sightings at the blasting site and vicinity.
7. All blasting events will be weather dependent. Conditions must be suitable for optimal viewing. Conditions that may prohibit optimal viewing may include wind speeds in excess of 7 knots, fog, and heavy rain. The chief observer will make the decision on the presence of optimum observing conditions to initiate the survey for each blast event. All blasting will occur during daylight hours.
8. For the above water blasts, a continuous survey of the area will be conducted for a period of 30 minutes prior to the blast and 30 minutes afterwards. For the below water blasts, a continuous survey of the area will be conducted for a period of 60 minutes prior to the blast and 60 minutes afterwards.

9. All of the observers will be in close communication with the blasting subcontractor in order to halt the detonation. The event will be halted if any protected species is spotted within the established Watch Zone. The blasting event will be immediately halted upon the request of the primary observers. The blast will not take place until the animal(s) move away from the area under their own volition. Manatees shall not be herded away or harassed into leaving. If the protected species is sighted outside of the watch zone a second time, the observation period will resume. If the protected species is not sighted a second time, the observation period will restart.
10. Blasting shall not commence without an “all clear” signal from the chief observer. At any time before the blast occurs, any observer or authorized personnel may abort the blast.
11. The observers, contractor, and subcontractors will evaluate any problems encountered during any of the blasting events and logistical solutions will be presented to USFWS and FWC. Corrections to the MWP will be made prior to the next blasting event.
12. If an injured or dead manatee is sighted after the blast event, the manatee watch observers will contact FWC through the Florida Marine Patrol Hotline at (888) 404-FWCC and contact the Bureau of Protected Species Management at (850) 922-4330. The watch will act accordingly to the situation and maintain contact with the injured or dead manatee.
13. If any injured or dead manatee is rescued/recovered within the project area during the blasting period or if the injury/death of any manatee in the reasonable vicinity of the project is documented to be caused by blasting, blasting will be postponed until cause of injury or mortality can be determined by the FWC or USFWS. If blasting injuries are substantially documented, all underwater blasting will be suspended until a revised plan can be agreed upon.
14. Within two weeks (14 days) after completion of all blasting events, the chief observer will submit a report to the USFWS and FWC (Bureau of Protected Species Management, Mail Station OES-BPSM, 620 South Meridian Street, Tallahassee, Florida 32399-1600), providing the names of the observers and their position during the event, number and location of manatees seen, and what actions were taken when manatees were seen.
15. If any one of the aforementioned conditions is not met prior to or during the blasting, the chief observer of the MWP will have the authority to terminate the blasting events.