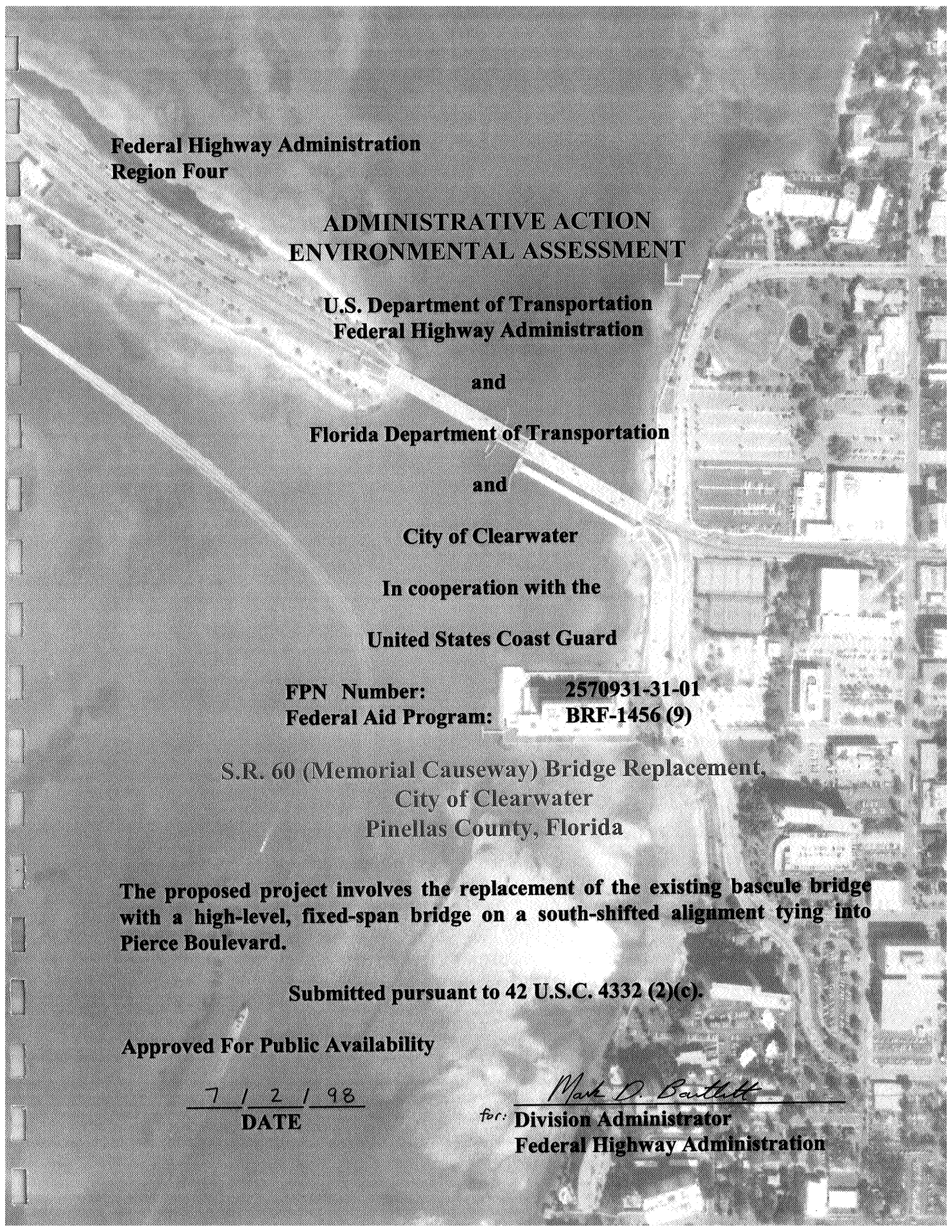

Federal Highway Administration
Region Four

ADMINISTRATIVE ACTION
ENVIRONMENTAL ASSESSMENT

U.S. Department of Transportation
Federal Highway Administration

and

Florida Department of Transportation

and

City of Clearwater

In cooperation with the

United States Coast Guard

FPN Number: **2570931-31-01**
Federal Aid Program: **BRF-1456 (9)**

S.R. 60 (Memorial Causeway) Bridge Replacement,
City of Clearwater
Pinellas County, Florida

The proposed project involves the replacement of the existing bascule bridge with a high-level, fixed-span bridge on a south-shifted alignment tying into Pierce Boulevard.

Submitted pursuant to 42 U.S.C. 4332 (2)(c).

Approved For Public Availability

7/2/98
DATE

Mark D. Bartlett
for: **Division Administrator**
Federal Highway Administration

S.R. 60 (Memorial Causeway) Bridge Environmental Assessment

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1.0 DESCRIPTION OF PROPOSED ACTION

The Memorial Causeway Bridge project involves the replacement of the existing four-lane S.R. 60 (Memorial Causeway) bascule (moveable span) bridge, located in Clearwater, Florida (Pinellas County), with a four-lane high-level fixed-span bridge. The proposed vertical navigational clearance is approximately 22.6 m (74 ft). The project limits extend approximately from just east of Island Way to just west of Ft. Harrison and from just north of S.R. 60 (Cleveland Street) to just south of Chestnut Street. The project is approximately 2.6 km (1.6 mi) in length (Figures 1-1 and 1-2).

The new bridge is proposed to be located south of and parallel to the existing bridge and connect to Pierce Boulevard. An additional connection to downtown in the vicinity of Pierce Street is also proposed. Traffic patterns in the western end of downtown will be altered due to the proposed project; for example, motorists on Drew and Cleveland Streets will no longer be able to drive directly to the eastern bridge approach as they do now.

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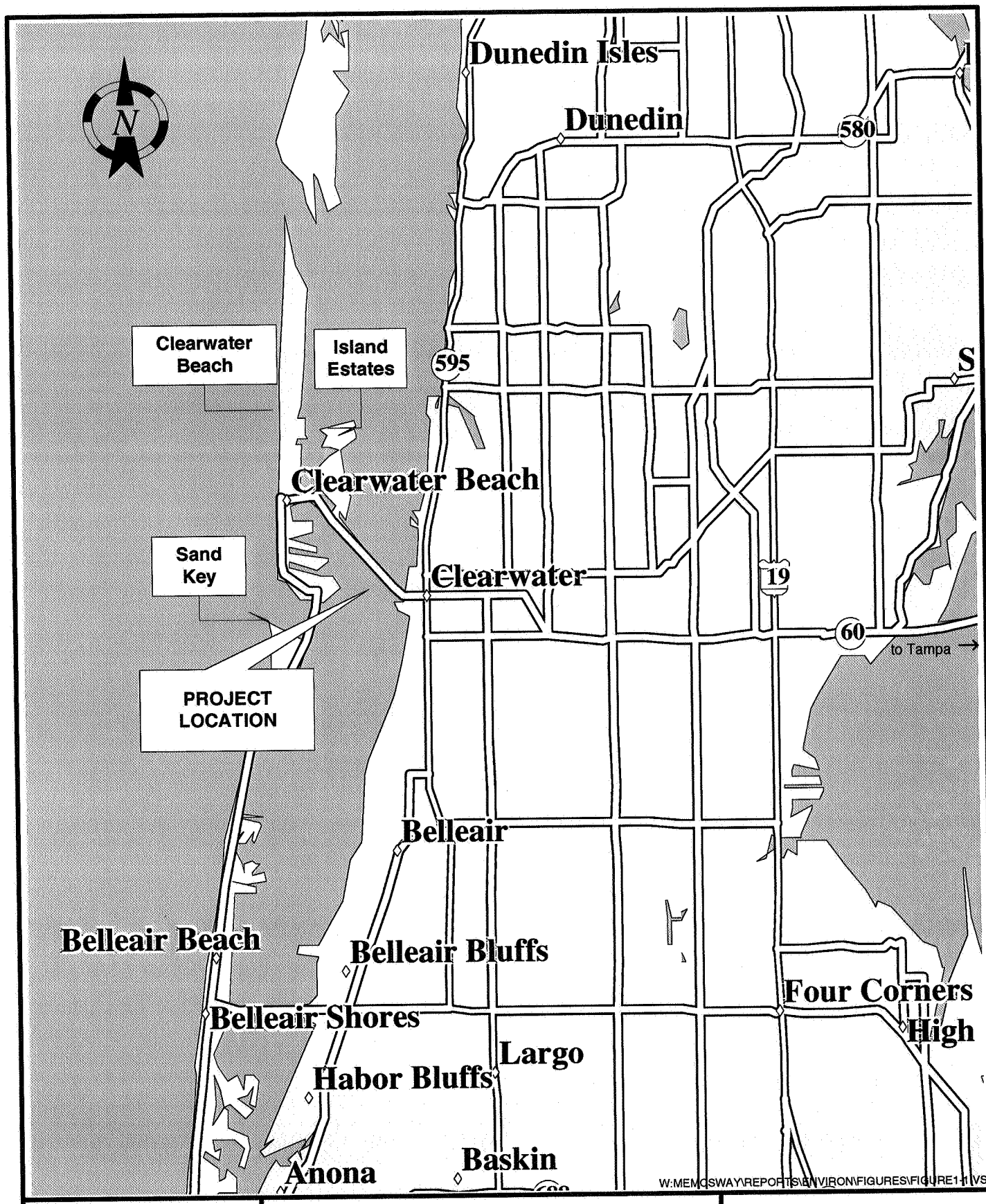
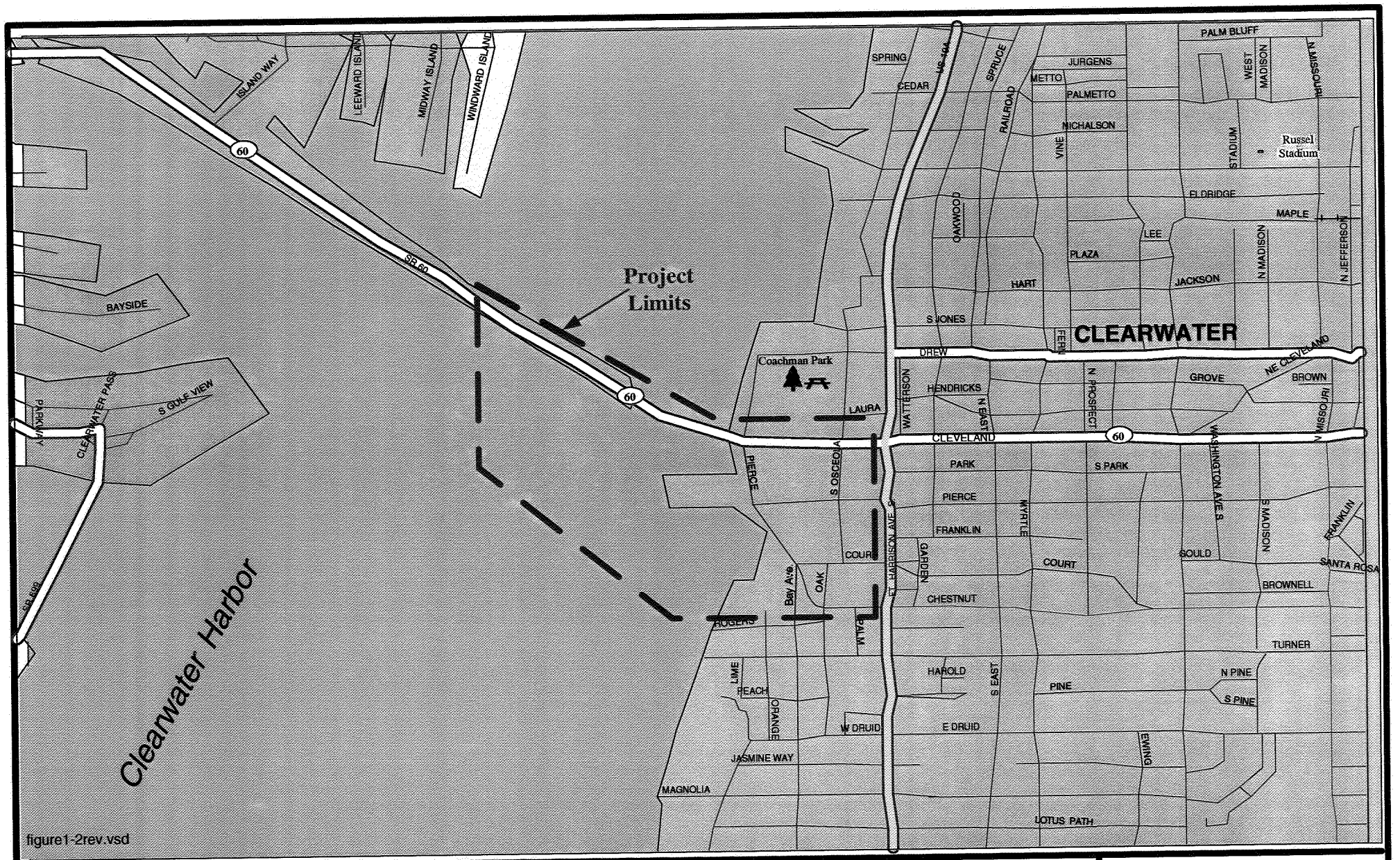


Memorial Causeway (S.R. 60) Bridge PD&E Study	PROJECT LOCATION MAP	FIGURE 1-1



Memorial Causeway (S.R. 60) Bridge PD&E Study

PROJECT LIMITS

FIGURE 1-2

2.0 NEED FOR IMPROVEMENT

2.1 System Linkage

The Memorial Causeway Bridge is located on S.R. 60 which is the primary link between mainland Clearwater and Clearwater Beach/ Island Estates. Memorial Causeway (SR 60) is a four-lane divided, "rural" typical section roadway, which is functionally classified as an urban principal arterial.

The Memorial Causeway Bridge directly serves both the Clearwater Beach resort area and about 2,200 Clearwater Beach and Island Estates residents. In addition, it is the primary evacuation route for north Sand Key, Clearwater Beach, and Island Estates. Table 2-1 summarizes the needs and benefits of the proposed project.

2.2 Capacity

The 1996 Average Annual Daily Traffic (AADT) on the Memorial Causeway (east of Island Way) was estimated to be approximately 38,500 vehicles per day (VPD). Seasonal variation in traffic on the Causeway is significant; for 1994, weekly averages ranged from a low of 31,000 VPD to a high of 50,400 VPD, a variation of approximately 60 percent.

Future traffic projections for year 2020 for the Memorial Causeway in the vicinity of the bridge were developed based on the Pinellas County Metropolitan Planning Organization's Tampa Bay Regional Traffic Model. Based on this analysis, the AADT for year 2020 is projected to be approximately 40,000 VPD. Future estimates for east-west streets (Drew Street, Cleveland Street, Court Street, and Chestnut Street) were determined by the same method; the resulting traffic volumes for 2020 are approximately 11 percent higher than 1996 volumes. Traffic issues are discussed in greater detail in section 3.6.1.

"Level of Service" (LOS) is an engineering term used to describe the operating conditions of vehicles in a traffic stream. Six levels of service are defined, "A" through "F", as shown in Table 2-2.

The estimated LOS in 1996 for the four-lane causeway and bridge was LOS "F", based on FDOT's 1995 generalized AADT LOS tables (based on a Class Ia arterial). For year 2020, the LOS is expected to remain "F".

TABLE 2-1
SUMMARY OF PROJECT NEED AND BENEFITS

Need	Benefit
Bridge Openings and Malfunctions	
• The existing bridge opens an average of 14 times per day on weekdays and 25 times per day on weekends. • The average opening time span is 5 minutes, which often results in a 1- 2 mile back-up during the peak season. • Delays due to bridge openings result in a cost to motorists of approximately $1 million dollars per year, in delay and vehicle operating costs. • The existing bridge malfunctions an average of 4 times per month.	• The new bridge will improve the level of service of the bridge for both vehicles and marine traffic by eliminating bridge openings, providing wider lanes and shoulders for disabled vehicles. • A new high-level fixed bridge will eliminate delays and major inconveniences caused by bridge malfunctions
Safety	

• The Memorial Causeway Bridge and the "Bayfront" intersection are among the top accident locations within the City of Clearwater.
• The existing bridge does not meet current design standards. Deficiencies include:
  • the lack of emergency lanes and substandard lane widths;
  • the lack of a median and barrier wall to separate the opposing lanes of traffic;
  • substandard raised separator between pedestrians and vehicular traffic;
  • low design speed (30 mph);
  • a metal bridge grate which has a low skid resistance and is noisy.
• Existing bridge openings create congestion which contribute to rear-end collisions.
• Provisions for bicyclists and pedestrians are inadequate due to narrow sidewalks and narrow traffic lanes.
	• Replacement of the existing bridge with a high-level fixed bridge will eliminate the existing deficiencies and reduce the rate of crashes on the bridge.
	• Conditions for pedestrians and bicyclists will be safer with the proposed bridge.
	• The proposed bridge project will increase the safety of motorists, pedestrians, and bicyclists through downtown, by reducing through-traffic.

Emergency Evacuation	
• The Memorial Causeway Bridge is the primary evacuation route for North Sand Key, Clearwater Beach, and Island Estates.	• A new bridge will result in a more reliable route for both evacuation traffic and emergency vehicles in addition to allowing the uninterrupted passage of marine vessels.
Social Demands and Economic Development	
• Costs and inconveniences associated with the bridge caused by bridge opening delays, malfunctions, and congestion may result in the loss of revenue to the City's businesses if tourists and potential residents go elsewhere. • The existing bridge creates inconveniences to boaters who use the Clearwater Harbor and local marinas. • Traffic congestion along Cleveland Street (downtown) is increased by bridge openings and malfunctions. This congestion makes access to downtown businesses more difficult.	• A new bridge will reduce the congestion of beach traffic through the downtown area by directing the majority of beach traffic to the Court Street/ Chestnut Street one-way pair. • The proposed project will provide an opportunity to create new and interesting activity centers within downtown, particularly along the waterfront. • The project could help to make Clearwater's waterfront a "community place". • A new bridge will promote the City's primary goals of tourism and economic development. • A new bridge would make it possible to extend a span of the Pinellas Trail to Clearwater Beach.

TABLE 2-2
LEVEL OF SERVICE (LOS) DEFINITIONS

Level of Service	Traffic Flow	Speed	Maneuverability	Comfort and Convenience
A	Free Flow	Highly Selective	High Freedom	Excellent
B	Stable	Selective	Slight Decline	Good
C	Stable	Affected by others	Significantly affected	Noted Decline
D	Stable, Dense	Traffic dependent	Severely restricted	Poor
E	Unstable, Capacity	Uniformly low	Extremely difficult	Extremely poor
F	Breakdown	Stop & Go	None	Intolerable

Source: Based on the 1994 Highway Capacity Manual, Transportation Research Board, Special Report No. 209, National Research Council.

Although the proposed bridge will still be four lanes, the proposed project would eliminate delays associated with bridge openings and malfunctions; providing shoulders, a median, and wider lanes; and providing space for disabled vehicles.

2.3 Transportation Demand

The Pinellas County Metropolitan Planning Organization (MPO) amended its Long Range Transportation Plan to include the project on May 14, 1997. In addition, the project was added to the MPO's Transportation Improvement Program (TIP) list of priorities. At present, the proposed project is *inconsistent* with the City of Clearwater Comprehensive Plan. However, the City's Comprehensive Plan will be updated during the next revision cycle to include the proposed project.

The project has been endorsed by the Clearwater City Commission (resolution 96-38) on May 2, 1996. Other groups which have endorsed the project include the City's Downtown Development Board, Marine Advisory Board, Environmental Advisory Board, Parks and Recreation Department, Beautification Committee, and Chamber of Commerce.

The Memorial Causeway Bridge is the primary evacuation route for North Sand Key, Clearwater Beach, and Island Estates. The replacement of the existing bridge will result in a more reliable route for both evacuation and emergency services.

2.4 Social Demands and Economic Development

The proposed project supports the City's goals of tourism and economic development. Currently, the existing bridge becomes congested due to the proximity of the signalized intersection at Cleveland Street and Pierce Boulevard, and due to frequent drawbridge openings and occasional malfunctions which result in the closure of the roadway. These result in costs to motorists in both time delays and higher vehicle operating costs. These costs, which are estimated to exceed $1 million per year, would be eliminated by

replacing the moveable span bridge with a high-level, fixed bridge. Therefore, the proposed project would facilitate economic development by reducing the costs and inconveniences to motorists (residents and beach visitors) traveling between mainland Clearwater and Clearwater Beach and Island Estates.

The existing bridge also creates delays and inconveniences to both recreational and commercial boaters due to the timed openings of the bascule bridge. The proposed action would eliminate these inconveniences.

Finally, the existing bridge with its current traffic patterns causes congestion through Downtown Clearwater along Cleveland Street during bridge openings and malfunctions. This congestion hampers access to downtown businesses, and it also contributes to an unattractive environment for pedestrians. The proposed action would reduce the congestion in this area by both eliminating bridge openings and by re-directing most beach-bound traffic along the Court Street/Chestnut Street one-way pair. The amount of traffic on Cleveland Street would be reduced to a level which would help the City redevelop the existing area into a more pedestrian-friendly downtown, as proposed in the Downtown Clearwater Redevelopment Plan (Reference 2-1). The proposed action would also facilitate the City's plans to expand Coachman Park to the waterfront for public enjoyment and city-sponsored events.

Short term economic benefits are expected during the construction phase due to the temporary increase in employment. Based upon FHWA procedures for estimating construction-related employment, each one million dollars of construction expenses creates an average of 9.75 on-site jobs and 12.7 off-site jobs. For a $40 million construction cost, this would result in approximately 390 on-site jobs and 510 off-site jobs. This increase in employment within the downtown Clearwater area may have a secondary effect of stimulating service-related businesses within the immediate area. Businesses such as restaurants, gas stations, convenience stores, and some retail stores may benefit economically from the bridge construction activities.

2.5 Modal Interrelationships

Bus service within the study area is currently provided by two different services, the Pinellas Suncoast Transit Authority (PSTA) and the Jolley Trolley Company.

Local bus service throughout the study area is provided by PSTA. Ten routes currently travel through the project study area. One route provides bus service to Clearwater Beach via the Memorial Causeway Bridge. In addition, a PSTA bus terminal is located within the study area at Park Street and Garden Avenue. Table 2-3 summarizes the routes within the project area.

The Jolley Trolley Company is a non-profit corporation, subsidized by the City of Clearwater, which operates shuttles primarily oriented toward tourists. It operates small trolley-like buses which run between downtown Clearwater and Clearwater Beach, in

addition to a separate route which runs along the beach. Its downtown route operates every 30 minutes from 10 a.m. to 8 p.m. daily and 9 p.m. Thursday through Saturday. The trolley travels east across Memorial Causeway stopping at the Publix on Island Estates. The route continues through downtown Clearwater on Cleveland Street, passing by the post office, PSTA bus terminal, and Park Street parking garage then heads back to the beach station via Island Estates, stopping at the shopping center on Island Way and the Marine Science Center. The trolley station is located at 40 Causeway Boulevard at the Memorial Civic Center. Estimated ridership in 1996 for the downtown route was approximately 65,800, according to the corporation; this represents approximately 30 percent of its total ridership for both routes.

TABLE 2-3
PSTA ROUTES WITHIN THE PROJECT AREA

Route	From	To	Route in Project Area
18	Cleveland St. and Pierce St.	Sunshine Mall	Druid Rd. to Cleveland St. via Myrtle Ave.
60	PSTA Station, Clearwater	Clearwater Mall	Cleveland St. to Gulf-to-Bay
61	PSTA Station, Clearwater	Largo	Cleveland St. to Missouri Ave.
63	Cleveland St./Myrtle Ave.	Clearwater Mall	Cleveland St. to Lakeview Rd. via Myrtle Ave.
66	Indian Rocks Road	Tarpon Springs	Myrtle Ave. to Court St. to Ft. Harrison Ave.
67	PSTA Station	Oldsmar	Garden Ave. to Drew St.
76	PSTA Station	Countyside Square	Cleveland St. to Belcher Rd.
78	Pierce St.	Countryside Mall	Pierce St. to Myrtle Ave. to Palmetto St.
80	PSTA Station	Clearwater Beach	Osceola Ave. to Memorial Causeway to the Beach
97	PSTA Station	St. Petersburg	Court Street to Gulf-to-Bay

Source: Pinellas Suncoast Transit Authority, 1997.

Waterborne traffic is served by several marinas near Clearwater Beach and the Clearwater Ferry Service, located near the end of Drew Street on Clearwater Harbor. The ferry service is currently inactive; the existing contract calls for it to be operated as demanded by the City.

Sporadic bicycle and pedestrian facilities exist throughout the downtown area and Clearwater Beach. Sidewalks are provided throughout downtown and along the causeway. Bicycle paths exist on Memorial Causeway, but the narrow traffic lanes throughout most of downtown Clearwater are not conducive to safe bicycle travel. The "missing link" of the Pinellas Trail through downtown Clearwater was recently opened along East Avenue. The proposed replacement bridge will include extra width on one side to accommodate bicyclists and pedestrians in addition to paved shoulders.

The existing pedestrian and bicycle facilities on the bridge consists of 1.5 m (5.0 ft) sidewalks on each side of the bridge. There is only a small raised curb to separate the sidewalk from the roadway, making the existing facilities on the bridge deficient under current design standards.

Additional transportation facilities and systems in the project area are currently planned or under study. The Pinellas County Metropolitan Planning Organization is currently conducting the Pinellas Mobility Major Investment Study. This study will evaluate the feasibility of constructing a fixed guideway rail system within Pinellas County. One of the alignments which is being considered runs along SR 60 from downtown Clearwater to Safety Harbor. There are presently no plans for a fixed guideway system to run between Clearwater and Clearwater Beach.

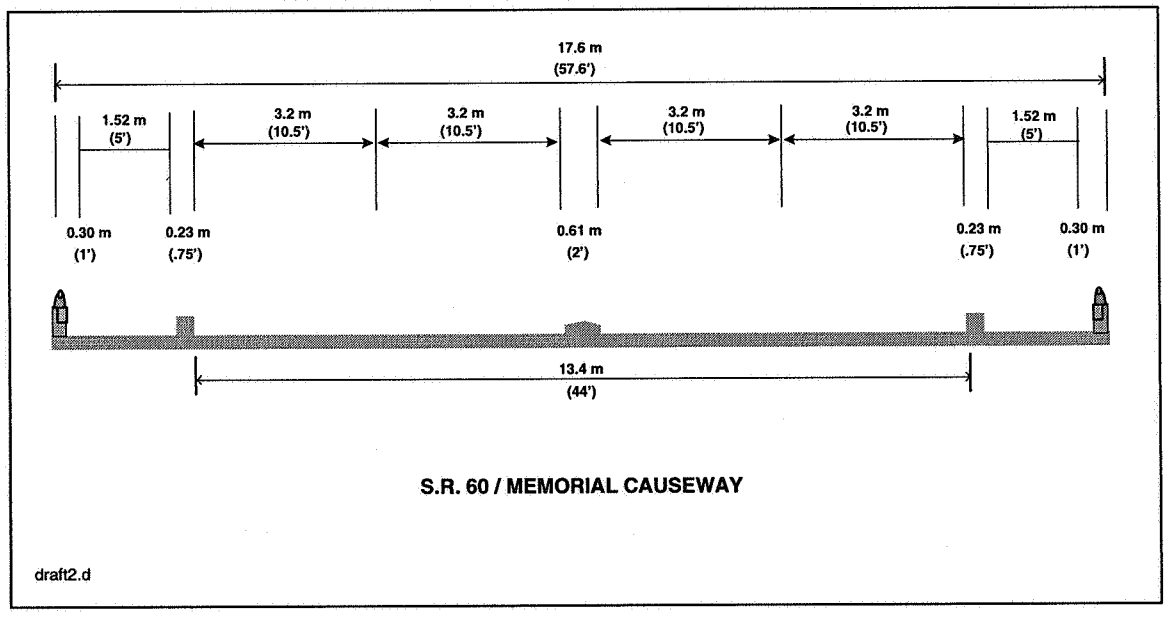
Replacement of the existing Memorial Causeway Bridge would provide adequate sidewalk and shoulder widths to more safely accommodate pedestrians and bicyclists. Traffic congestion throughout the downtown area would also be reduced and therefore provide a more attractive area for bicyclists and pedestrians.

2.6 Safety and Bridge Functional Obsolescence

The existing Memorial Causeway Bridge, which was 34 years old in 1997, is classified as "functionally obsolete", although not structurally deficient.

The existing Memorial Causeway Bridge (bridge no. 15044), located at milepost 1.508 to 1.725, consists of a 33.5 m (110 ft) long steel moveable bascule center span with 18 fixed approach spans. The total length of the bridge is 312 m (1024 ft) and the total out-to-out width is 17.6 m (57.6 ft). The bridge cross-section includes 1.5 m (5.0 ft) sidewalks on each side and four 3.2 m (10.5 ft) travel lanes with a 0.61 m (2 ft) raised center divider. The bridge roadway curb to curb width is 13.4 m (44 ft) (Reference 2-2). Figure 2-1 includes the existing bridge typical section.

FIGURE 2-1
EXISTING BRIDGE TYPICAL SECTION



The deficiencies of the existing bridge include:

- the lack of auxiliary emergency lanes (shoulders)
- the lack of a barrier wall to separate opposing lanes of traffic
- the lack of an adequate raised separator between pedestrians and vehicular traffic, as well as an adequate sidewalk width given the volume of pedestrians and bicycle traffic
- the low design speed and posted speed on the bridge (approximately 50 km/h [30 mph]), while the posted speed limit on the causeway is 70 km/h (45mph)
- the metal bridge grate which has a low skid resistance, especially when wet

The frequent bridge openings cause traffic back-ups which are conducive to rear-end crashes. The average number of openings per weekday is 13.8, with a weekend day of 24.5, yielding a weighted average of 16.9. The average opening duration is 5.2 minutes, which causes lengthy backups during the peak tourist season.

An analysis of the study area's accident history indicates that there are safety deficiencies involving the roadways and intersections near the existing bridge. During the 5-year period between January 1, 1990 and December 31, 1994, there were 283 accidents reported to FDOT along SR 60 from the intersection of Island Way to the Fort Harrison Avenue intersection. These accidents resulted in 230 injuries and two fatalities. As shown in Table 2-4, the majority of these accidents were rear-end collisions, many of which are attributable to congestion associated with bridge openings. These accidents resulted in a total economic loss of approximately $7.1 million.

TABLE 2-4
SUMMARY OF CRASHES ON SR 60 (1990-1994)

Type of Accident	Island Way to Memorial Causeway Bridge	Memorial Causeway Bridge	Memorial Causeway Bridge to Bayfront Intersection	Bayfront Intersection to Ft. Harrison	Total Number Accidents	Average Number Per Year
Rear-end	92	42	20	6	160	32
Right Angle	6	3	5	8	22	4.4
Left Turn	5	0	1	10	16	3.2
Sideswipe	6	8	2	2	18	3.6
Collision w/ object	15	10	3	5	33	6.6
Other	2	6	4	7	19	3.8
Pedestrian/ Bike	3	1	3	2	9	1.8
Right Turn	1	0	2	0	3	0.6
Head-on	1	1	0	1	3	0.6
Total	131	71	40	41	283	56.6
Injuries	137	46	24	23	230	46
Fatalities	1	1	0	0	2	0.4

Source: Florida Department of Transportation, 1996

Replacement of the existing bridge with a modern, high-level fixed-span bridge will eliminate the existing bridge's design deficiencies and will reduce the accident rate for the Memorial Causeway Bridge. In addition, conditions for pedestrians and bicyclists will be safer with the proposed bridge. For the eastern roadway approach (Court and Chestnut Streets), the horizontal and vertical alignments will be improved which will improve their safety and allow for more efficient traffic operations along both facilities.

2.7 Navigation

2.7.1 Current Condition of the Existing Bridge

The Memorial Causeway Bridge was constructed in 1963 making it 34 years old in 1997. It was last inspected on June 30, 1996. Its condition is rated as "functionally obsolete" with a sufficiency rating of 55.9, due to the lack of shoulders and a median. Detailed information concerning bridge structural ratings is available in the Preliminary Engineering Report (Reference 2-3). The bridge is not posted for weight restrictions.

Figure 2-2 includes photos of the existing bridge.

The bridge itself is tangent horizontally. The existing bridge profile utilizes maximum grades of 6.0 percent on each approach as shown in Figure 2-3.

2.7.2 Existing Bridge Maintenance and Costs

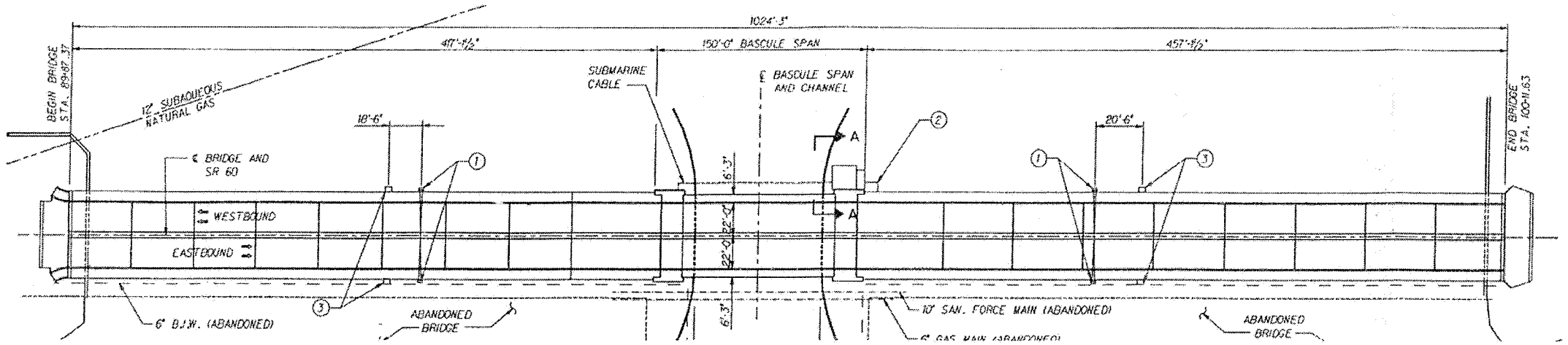
As the bridge continues to age, maintenance costs are expected to increase. At some point in the future the existing bridge will have to be replaced due to its age and condition. Until the bridge is determined to be "structurally deficient", substantial revenue will be required for maintenance. A $2 million major rehabilitation (rehab) was originally scheduled for 1995, however, it has been cancelled because a decision has been made that the existing bridge will be replaced. In addition to this major rehab, a second major rehab of $3 to $4 million would be required around the year 2015. In addition to the major rehab projects, the bridge currently costs an estimated $250,000 per year for routine maintenance and operating costs.

Bridge malfunctions are also a source of maintenance costs and costs to the community in motorist and boater delays and inconveniences. The total number of malfunctions reported from July 1994 through September 1996 was 79. The following conclusions are based on a review of these malfunction reports:

- 11 percent of the malfunctions reported involved problems which resulted in the roadway temporarily being closed to vehicular traffic; these malfunctions included nine road closures, with a total closure time of eight hours and seven minutes. The shortest closure was five minutes, and the longest closure was two hours.

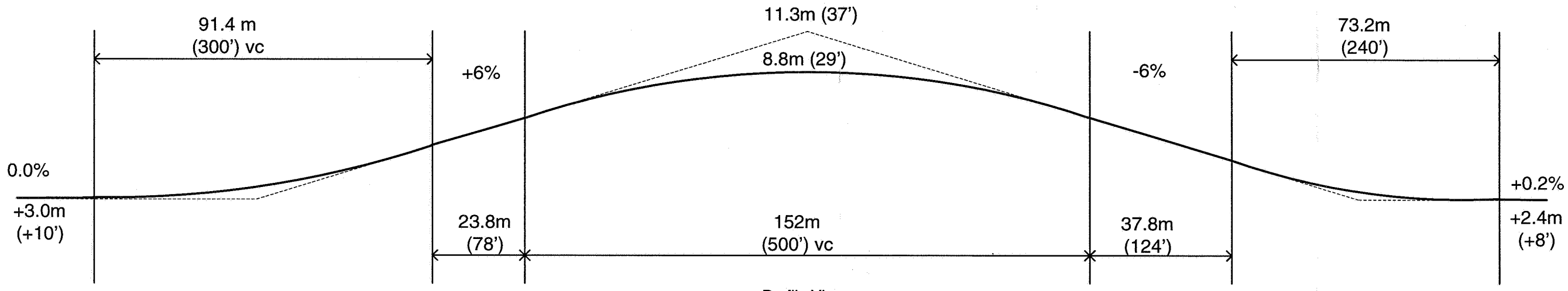
W:\MEMCSWAY\REPORTS\ENVIRON\FIGURES\FIGURE2-1.VSD

Memorial Causeway (S.R. 60) Bridge PD&E Study	EXISTING BRIDGE PHOTOS	FIGURE 2-2



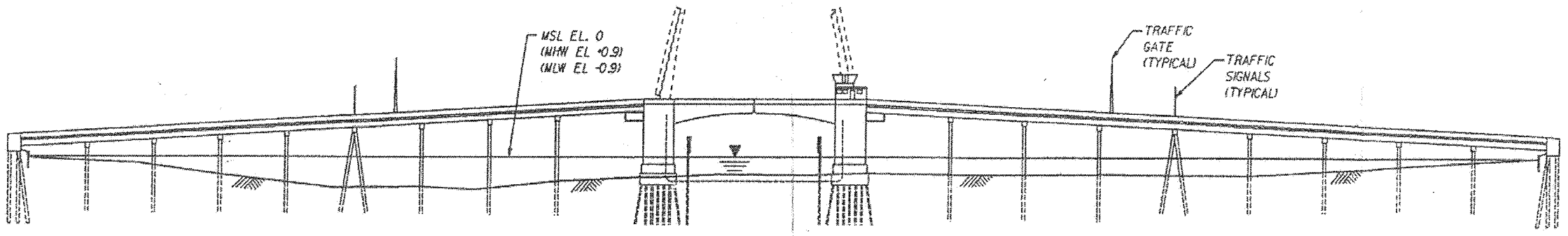
Plan View

Source: Plans of Proposed Bridge Rehabilitation for SR 60 over Gulf ICWW Drawing No. G-23 10/93



Profile View

Source: "As Built" Construction Plans Project No. 15220-3502, Sheet No. B-2, June 1960



ELEVATION

Source: Plans of Proposed Bridge Rehabilitation for SR 60 over Gulf ICWW Drawing No. G-23 10/93

W:\MEMCSWAY\REPORTS\ENVIRON\FIGURES\FIGURE2-2.VSD

Memorial Causeway (S.R. 60) Bridge PD&E Study

PLAN AND PROFILE DRAWINGS OF THE EXISTING BRIDGE

FIGURE 2-3

- Approximately 19 percent of the malfunctions resulted in the bridge being closed to marine traffic; most of these closures were two to three hours with one closure lasting 19 hours.

Additional data is included in the Preliminary Engineering Report (Reference 2-3).

2.7.3 Span Arrangement

The existing horizontal clearance at the bascule span is 27.4 m (90 ft) and the vertical clearance in the closed position is 7.6 m (25 ft).

The existing Memorial Causeway Bridge (bridge no. 15044), located at milepost 1.508 to 1.725, consists of a 33.5 m (110 ft) long steel moveable bascule center span with 18 fixed approach spans. The existing approach spans for the bridge consist of a reinforced concrete deck slab supported by prestressed concrete beams and piles. The approach spans are 13.7 m (45 ft) long on the west side of the bascule span and 15.2 m (50 ft) on the east side.

2.7.4 Additional Navigational Data

Channel Data

The existing horizontal clearance at the bascule span is 27.4 m (90 ft) and the vertical clearance in the closed position is 7.5 m (25 ft).

The existing navigational channel in Clearwater Harbor is part of the Gulf Intracoastal Waterway, which is maintained by the Army Corps of Engineers; the U.S. Coast Guard has navigational jurisdiction.

The channel was last surveyed in August 1994 as part of an "Examination Survey (P&S Scope), 9-Foot Project" (Reference 2-4). The hydrographic survey determined harbor depths for an approximate 91m (300 ft) wide band which straddled the 30.5 m (100 ft) Intracoastal Waterway. Water depths in the channel near the existing bridge ranged from about 2.9 m (9.6 ft) to 4.4 m (14 ft) at Mean Low Water.

Channel and navigational data are also included on the National Oceanic and Atmospheric Administration (NOAA) Nautical Chart No. 11411, Intracoastal Waterway, from Tampa Bay to Port Richey, June 1994.

Existing Bridge Vertical Clearance

The existing bridge has a vertical clearance of 7.6 m (25 ft) in the closed position.

The minimum vertical clearance *required* by the Coast Guard for a high-level fixed-span bridge crossing the Gulf Intracoastal Waterway is 19.8 m (65 ft). However, the proposed vertical clearance for the proposed fixed-span bridge is approximately 22.6 m (74 ft) to accommodate the taller sailboats in the area and to provide the same clearance as the nearby Clearwater Pass Bridge at Sand Key. This determination was made based on the results of a 6-month boat height survey conducted between June 3, 1996 and December 11, 1996. Approximately 9.4 percent of the boats were estimated to be 19.8 m (65 ft) or higher.

Existing Bridge Openings

Existing bridge opening frequencies are restricted by the following regulation (Reference 2-5):

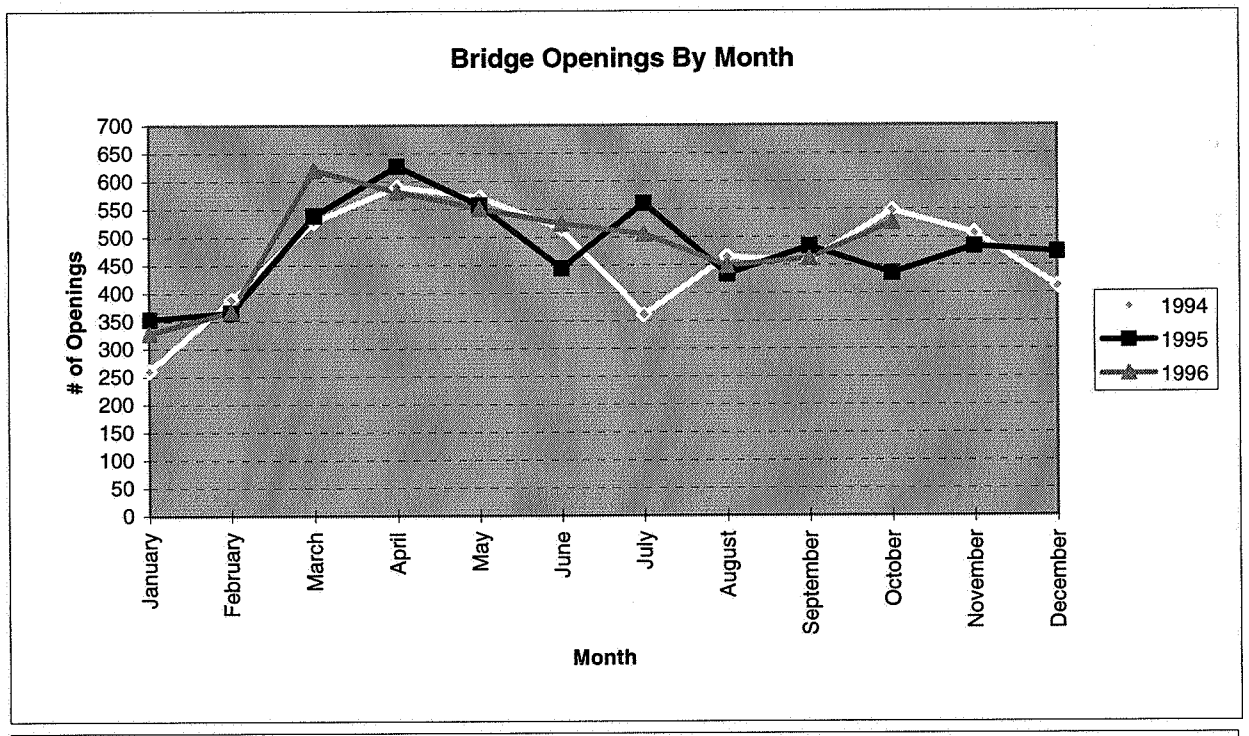
> From 9 a.m. to 6 p.m., the draw need not be open except on the hour, 20 minutes past the hour, and 40 minutes past the hour to allow any accumulated vessels to pass. From 2 p.m. to 6 p.m. Saturdays, Sundays and legal holidays, the draw need open only on the hour and half-hour to allow accumulated vessels to pass. At all other times, the draw shall open on signal.

Opening frequencies are controlled by the bridge tender, who works for FDOT on a contract basis. The bridge is manned 24 hours a day.

Historical data related to opening frequencies was obtained from two different sources: FDOT and the City of Clearwater's engineering division.

Data from FDOT are summarized in Table 2-5 and Figure 2-4, which shows the number of openings by month for a 12-month period. The average number of openings per month was 460, for an average of 15.1 openings per day.

FIGURE 2-4
Number of Bridge Openings and Boats by Month



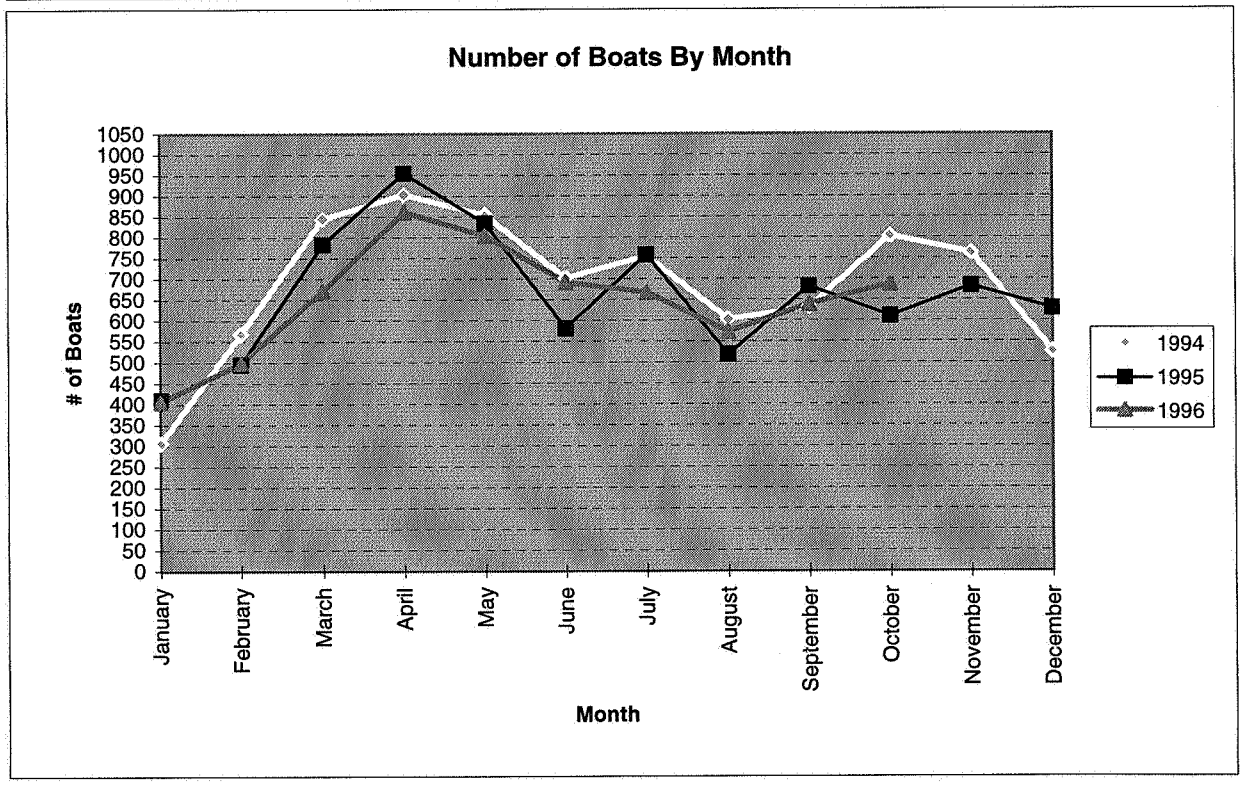


TABLE 2-5
NUMBER OF BRIDGE OPENINGS BY MONTH

Month	Number of Openings				Number of Boats		
	1994	1995	1996		1994	1995	1996
January	261	353	328	January	306	410	405
February	388	365	367	February	567	495	498
March	528	539	620	March	845	783	672
April	590	627	581	April	903	955	861
May	572	557	551	May	854	834	804
June	514	444	524	June	702	581	692
July	361	560	505	July	755	758	667
August	464	433	448	August	603	518	573
September	458	483	462	September	631	682	639
October	547	435	526	October	803	610	687
November	507	483		November	763	683	
December	412	473		December	526	629	
Total	5602	5752	4912	Total	8258	7938	6498

Bridge opening data obtained from the City's traffic control system events log printouts were presented in detail in the *Memorial Causeway Bridge Feasibility Study Report* (Reference 2-6). Data from the City regarding bridge opening frequencies and durations were compiled for both weekdays and weekends based on a sample of 26 days over a 12 month period. Figure 2-5 graphically summarizes the bridge openings by time of day based on this sample. Table 2-6 summarizes the *duration* of the bridge openings for this same sample.

TABLE 2-6
SUMMARY OF THE DURATION OF BRIDGE OPENINGS

	Weekday	Weekend Day	Weighted Average
Avg. # openings per day	13.8	24.5	16.9
Avg. opening duration	4.5 min.	5.2 min.	4.7 min.
Min. opening duration *	1 min.	1 min.	
Max. opening duration**	8 min.	11 min.	

* Typically for routine maintenance ** Excluding bridge malfunctions

Boating Accidents

Information was obtained from the United States Coast Guard regarding commercial vessel accidents within a quarter mile of the existing bridge between 1990 and 1995. The

Coast Guard reported only one commercial vessel accident during this period. This accident was located just north of the bridge in the Intracoastal Waterway. There were no injuries involved with this accident.

Additional research was conducted to determine the number of recreational boating accidents. The Department of Waterway Management of the Florida Marine Patrol was contacted; however the requested information was not available.

Waterway Related Businesses

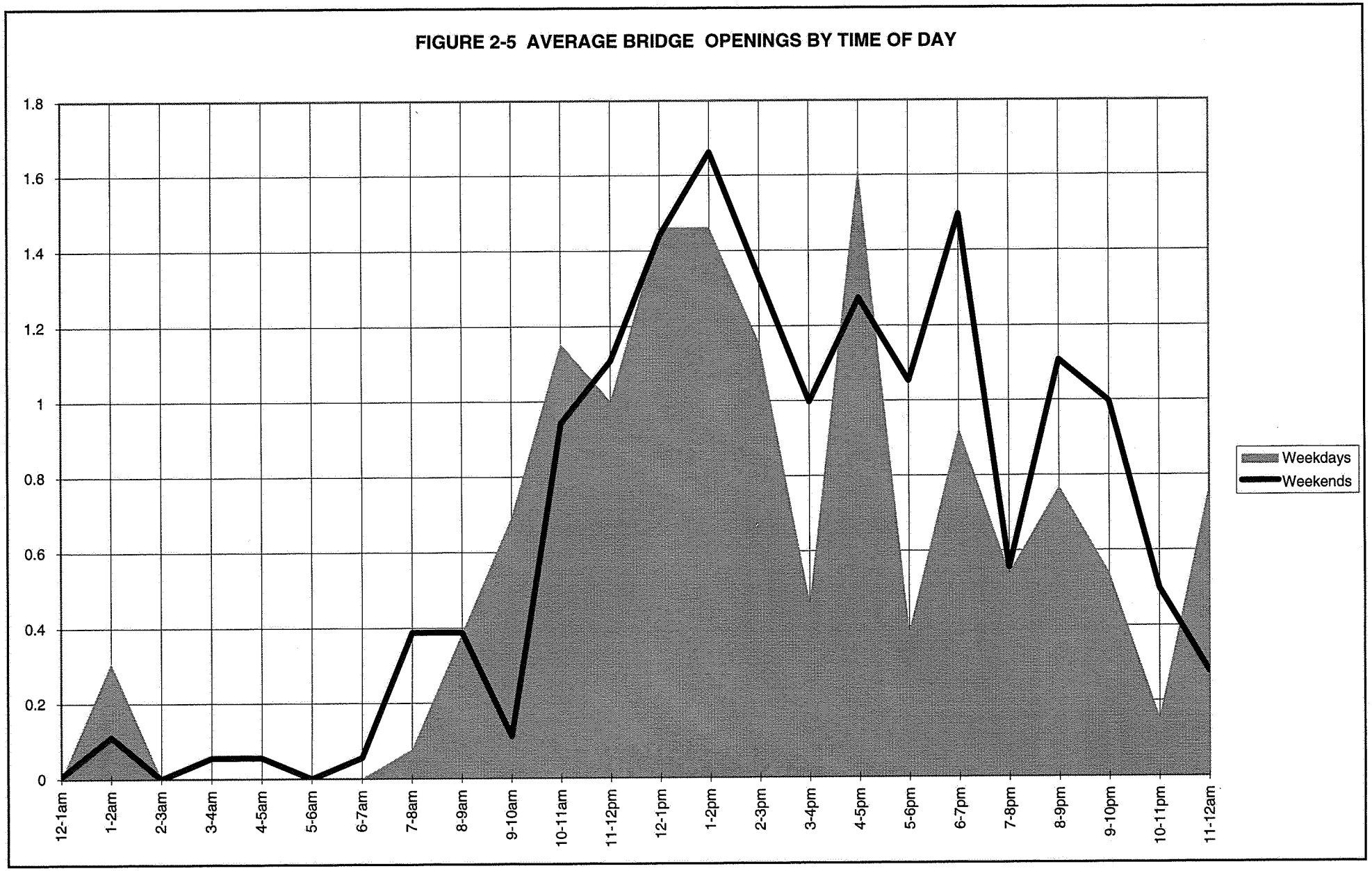
Several waterway related businesses exist within the vicinity of the Memorial Causeway Bridge. The largest business is the Clearwater Marina, located to the southwest of the bridge, which provides docks for fishing boats, charter and rental boats, cruise and dinner ships, and recreational boats. As of September 1996, the marina had 51 commercial slips, 84 private slips, 7 fuel dock slips and 24 transient slips.

The Island Estates Marina had 14 boat slips rented to Ross Yacht Sales, a local business that services and sells boats, and 30 private boat slips.

United States Coast Guard Coordination

The United States Coast Guard is a cooperating federal agency on the Memorial Causeway Bridge Project Development and Environment (PD&E) Study. Coordination with the Coast Guard has occurred throughout the study process. Copies of correspondence with the Coast Guard are included in Appendix C.

FIGURE 2-5 AVERAGE BRIDGE OPENINGS BY TIME OF DAY



G094A692REV.XLW

Based on a sample of 26 days over a 12-month period

2.8 References

Reference 2-1 - *Clearwater Downtown Redevelopment Plan.* Prepared for the City of Clearwater by Hanson, Taylor, Bellomo & Herbert, June 1995.

Reference 2-3 - SR 60 (Memorial Causeway) Bridge Draft Preliminary Engineering Report. Prepared for the City of Clearwater in cooperation with FDOT by HDR Engineering, Inc., February 1998.

Reference 2-4 - Examination Survey (P&S Scope), 9 Foot Project of Intracoastal Waterway. Prepared for Jacksonville District, ACOE by Sea Systems Corporation, August 1994 D.O. File No. 41E-36.782.

Reference 2-5 - FDOT Preliminary Plans of Proposed Bridge Rehabilitation, State Project No. 15220-3513. Prepared for FDOT by PBQD, 1993.

Reference 2-6 - Memorial Causeway Bridge Feasibility Study Report. Prepared for the City of Clearwater in cooperation with FDOT by HDR Engineering Inc., July 1995.

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3.0 ALTERNATIVES CONSIDERED

3.1 No-Build Alternative

The No-Build Alternative consists of simply maintaining the existing bridge and performing maintenance and repairs as required. Estimated costs associated with the No-Build Alternative include approximately $2 million in FY 1998/1999 for major rehabilitation, and annual maintenance and operating costs of about $250,000 per year. In addition, a second major rehab of $3-4 million would be required around the year 2015.

The advantages of the No-Build Alternative include:

- No new construction costs
- No right-of-way acquisition
- No business relocations
- No adverse environmental impacts

The disadvantages of the No-Build Alternative include:

- No improvement in the traffic congestion along SR 60 which currently exists due to bridge openings and malfunctions
- The annual economic loss associated with delays due to bridge openings is over $1 million
- Increased maintenance and repair costs as the bridge ages
- Periodic traffic congestion due to repairing and maintaining the bridge
- Continuation of the existing safety deficiencies; continuation of economic losses due to increase in vehicle collisions
- Eventual replacement of the 34-year old bridge as it continues to age and eventually becomes structurally obsolete
- Delays opportunity to expand Coachman Park to the west and south

The No-Build Alternative will be retained as a viable alternative at least through the public hearing stage of this study.

3.2 Alternatives Considered but Rejected

3.2.1 The Tunnel Alternative

At the request of the City, the tunnel alternative was evaluated because this alternative has been periodically suggested by interested citizens throughout the study process. The perceived need for a tunnel alternative is related to the importance many residents place on the view from the bluff in downtown Clearwater. Due to the prohibitive costs, however, this alternative was determined to be *nonviable*.

A possible cross-section of the tunnel would include two tubes for the vehicular traffic and two smaller tubes on either side of the main tubes for pedestrians, bicycles and emergency access. The ventilation tubes could be located above and below the pedestrian opening. This would result in a 33.5 m (110 ft) wide concrete section, with a depth of approximately 9.1 m (30 ft).

Advantages of a tunnel:

- Generally less visual impact on the surroundings
- Minimal right-of-way costs

Disadvantages of a tunnel:

- Construction of a tunnel is many times more expensive than construction of a bridge. The estimated initial cost of a tunnel is approximately $133 million, based on an alignment which connects to Pierce Boulevard. A tunnel connecting directly to Cleveland Street isn't considered viable because Cleveland Street cannot handle the projected traffic demand and this alignment would be inconsistent with the Clearwater Downtown Redevelopment Plan.
- The tunnel for the pedestrians would be viewed as a safety concern. Closed circuit cameras would be required to address this concern, at additional capital and operating costs. Some pedestrians might be very uncomfortable in a long tunnel.
- A trench would need to be dredged to provide the required water depth above the roof of the tunnel to allow water traffic to pass. The dredging would have direct impacts to sensitive estuarine habitats. Disposal of the spoil could be a problem.
- The tunnel would need to be constantly lighted inside, ventilated and drained resulting in continuing operation & maintenance costs. Backup power and communications systems would be required for power outages and emergencies. The air quality inside the tunnel would have to be constantly monitored, especially for the pedestrians.
- Normally no shoulders of any significance are provided in tunnels (the above cost assumes this). To rapidly take care of disabled vehicles in the tunnel it is normal practice to have a tow truck on stand-by at all times.
- The ventilation, lighting, drainage, closed circuit television monitoring and the tow truck service will require a significant annual budget, which is expected to be significantly higher than that required for the operation of a movable bridge.

3.2.2 Mid-Level Bascule

A higher "mid-level" bascule bridge was evaluated as part of the 1995 Feasibility Study in addition to high-level fixed bridges, because typically a higher bascule bridge would require fewer openings (thus reducing delay to motorists) and it would have less of an aesthetic impact on downtown Clearwater. The 1995 cost estimate for this alternative was $16.3 million.

The existing bridge has a vertical navigational clearance of 7.62 m (25 ft). If a new bridge could provide 4.6 m (15 ft) higher clearance, for example, this would provide a 12.2 m (40 ft) vertical navigational clearance. Unfortunately, it is estimated that this clearance would accommodate only approximately 13 percent of the sailboats which are docked in the immediate project area, based on a field survey of marinas in the area conducted in March 1995 (Table 3-1). Other types of boats use the harbor, but sailboats constitute a high percentage of the users. Based on this survey, it appears that increasing the vertical navigational clearance to 12.2 m (40 ft) would result in only a slight reduction in the number of bridge openings required.

In addition to the frequency of openings required, a new "mid-level" bascule bridge would have other drawbacks. Since boat traffic in the Intracoastal Waterway must be maintained during construction, relocating the channel further to the west would not be practicable with this alternative because the vertical clearance under the approach spans would be insufficient to pass most of the sailboats during construction of the new bridge. The existing bridge already has maximum grades of 6 percent on the approaches. Therefore, if the high point of the new bridge can't be shifted further west, then the approaches would need to be raised approximately 4.6 m (15 ft) to achieve the 12.2 m (40 ft) vertical clearance in the channel. This 4.6 m (15 ft) increase in heights would result in aesthetic impacts and traffic circulation challenges which are similar to the high-level bridge alternatives.

Finally, public support for a higher level bascule bridge appears to be lacking, based on comments received at the two public information workshops held during the 1995 Feasibility Study.

For the above reasons, and due to higher expected annual maintenance, operating, and road-user costs, a mid-level bascule bridge alternative was *not* recommended for further study.

TABLE 3-1
ESTIMATED HEIGHTS OF SAILBOATS DOCKED WITHIN PROJECT VICINITY

	Range of Total Heights				
Location in Relation to the Bridge	<12.2 m (<40 ft)	12.3-14.3 m (40-47 ft)	14.4-16.8 m (47-55 ft)	>16.8 m (>55 ft)	Totals
North of .../South of ...	15/15	25/55	25/65	5/25	70/160
Totals (% of Total)	30 (13)	80 (35)	90 (39)	30 (13)	230 (100)
Source: HDR Engineering, March 1995.					

3.2.3 Widen Existing Structure

Widening the existing bridge to improve its safety and functional characteristics is not considered to be a practicable alternative to constructing a new bridge, for the following reasons:

- Widening the existing bridge would not eliminate motorists' delay cost and vehicle operating costs associated with frequent bridge openings. These costs are estimated to be approximately $1 million per year (Reference 3-1). Therefore, this alternative would not meet the project's need.
- Widening and rehabilitating the existing bascule bridge (and the approach spans) would cost an estimated $21 million. Total bridge closure or extended land closures would be required which would cause extreme economic hardship and inconvenience to motorists. It would also deter tourism, which is the economic livelihood of Clearwater and its beaches.
- The widened bridge would have to be *replaced* in 20 or 30 years anyway due to the age of the mechanical components.

3.3 Transportation System Management

The Transportation System Management (TSM) alternative, which consists of low capital improvements that maximize the efficiency of the present system, was also considered for this project. Such improvements typically include signal timing optimization, construction of auxiliary lanes at intersections, and provision of high-occupancy-vehicle (HOV) lanes.

Although TSM-type improvements would help alleviate some congestion and to some extent improve traffic safety in the project corridor for the short-term, they will not effectively address the *project need*, which is to replace a congestion causing moveable bridge with a more reliable and safer fixed span bridge. Therefore, the TSM Alternative is not considered viable as a replacement for the high-level fixed bridge Build Alternative.

3.4 Multi-Modal Alternatives

Multi-modal alternatives include both mass transit and non-motorized vehicle options. The mass transit and non-motorized vehicle alternatives are extremely limited due to the substandard design of the existing bridge, including narrow (3.2m (10.5 ft)) traffic lanes, a narrow (1.5 m (5 ft)) sidewalk, and the lack of a barrier between pedestrians/ bicyclists and vehicular traffic. In addition, the multi-modal alternatives do not effectively address other issues, including traffic congestion downtown due to bridge openings, and the bridge as the sole evacuation route for North Sand Key, Clearwater Beach and Island Estates.

3.5 Corridor Alternatives

A comprehensive corridor analysis was completed as part of the Memorial Causeway Bridge Feasibility Study prepared for the City in 1995 (Reference 3-1). One of the primary objectives of the Feasibility Study was to determine the best corridor (or combination of "corridors") of three alternatives, each of which has a different tie-in point at the east end of the project. These three alternatives include Drew Street, Cleveland Street, and Pierce Boulevard (Figure 3-1).

The existing corridor, Cleveland Street, as well as two new corridors were evaluated to determine which corridor would best meet the objective of providing a safe, cost-effective bridge which would handle the projected vehicular, bicycle and pedestrian traffic and which is aesthetically compatible with the downtown and beach area. These three corridors were also evaluated with respect to their projected environmental impacts.

In order to evaluate the costs and impacts of each alternative, plan and profile drawings were prepared for at least one alignment within each of the three alternative "corridors". The proposed design criteria and typical sections used in the Feasibility Study are included in Reference 3-1. The bridge structure out-to-out width was approximately 30.2 m (99 ft) for all alternatives. The proposed bridge typical section included 2.4 m (8 ft) inside shoulders and 3.6 m (12 ft) outside shoulders. The proposed 19.8 m (65 ft) vertical navigational clearance used for all alternatives was based on regulations established by the U.S. Coast Guard pertaining to the Gulf Intracoastal Waterway (Federal Register May 25, 1984). A small-size plan view of each alternative is included in Figure 3-2. Larger size plan and profile drawings of these alternatives are included in Appendix A.

Drew Street Corridor Alternative

This corridor alternative, designated as "D4", ties in directly to Drew Street. As shown in the plan view (Figure 3-2), the navigational channel would have to be shifted approximately 109 m (356 ft) farther west in order to obtain the needed 19.8 m (65 ft) vertical clearance under the new bridge. During the construction period, approximately 17.4 m (57 ft) of vertical clearance would be provided under an approach span at the existing navigational channel.

Based on the traffic analysis conducted as part of the Feasibility Study, the intersection of Drew Street and Ft. Harrison would not be able to handle the amount of traffic which would have to flow through it to get to the new bridge. By comparison, the traffic-carrying capacity of the Court Street/Chestnut Street one-way pair is much higher due to the greater number of lanes and the more efficient one-way street operations.

The following list includes the pros and cons of the Drew Street Alternative:

- With this alternative, it would be necessary to redesignate a segment of Drew Street as SR 60, to maintain continuity in the state road system. In addition, a smooth

transition would need to be developed to connect Gulf-to-Bay (SR 60) to the SR 60 segment of Drew Street. Unfortunately, there is no place where a diagonal connector could be built without resulting in high costs and impacts to businesses and residents. Depending on the location of the transition, a reduction in traffic on Gulf-to-Bay Boulevard could adversely affect existing businesses located on or near it. In addition, the costs and impacts to widen Drew Street between Osceola and Highland Avenue would be very high; widening would be required to be able to handle the traffic which would be diverted from other routes.

- This alternative has a high estimated cost compared to some of the other alternatives. These costs include: construction, engineering and CEI; right of way; and mitigation for wetland impacts.

- The right-of-way required for this alternative is approximately 0.42 ha (1.04 ac). The total area impacted is the second highest of any of the corridor alternatives. In addition, the estimated cost of right-of-way is approximately $2.1 million. This is almost four times the cost of the right-of-way for the other corridors. Connecting the bridge to Drew Street would adversely impact the Sandcastle Resort, owned by the Church of Scientology. These impacts contribute to the high estimated right-of-way costs and business damages.

- The shift of the navigational channel required for the Drew Street alternative is one of the largest shifts among all the alternatives.

- This alternative had the highest impacts to sea grasses and mangroves, which are sensitive estuarine wetland habitats.

- This alternative is the only one which would reduce the traffic noise level changes for the Pierce 100 condominiums. However, it is the only alternative which has probable noise impacts to Coachman Park, a locally significant recreational property protected by Section 4(f) of the Department of Transportation (DOT) Act of 1966.

- The Drew Street alternative would have the most adverse impacts to Coachman Park, including land acquisition, noise, and visual impacts.

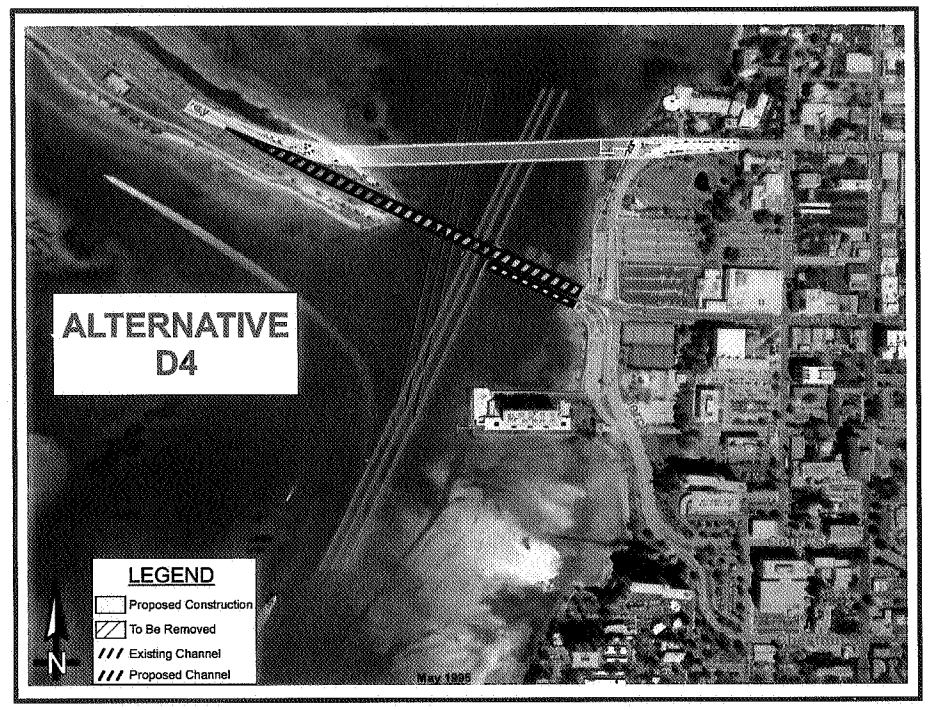
Cleveland Street Corridor Alternative

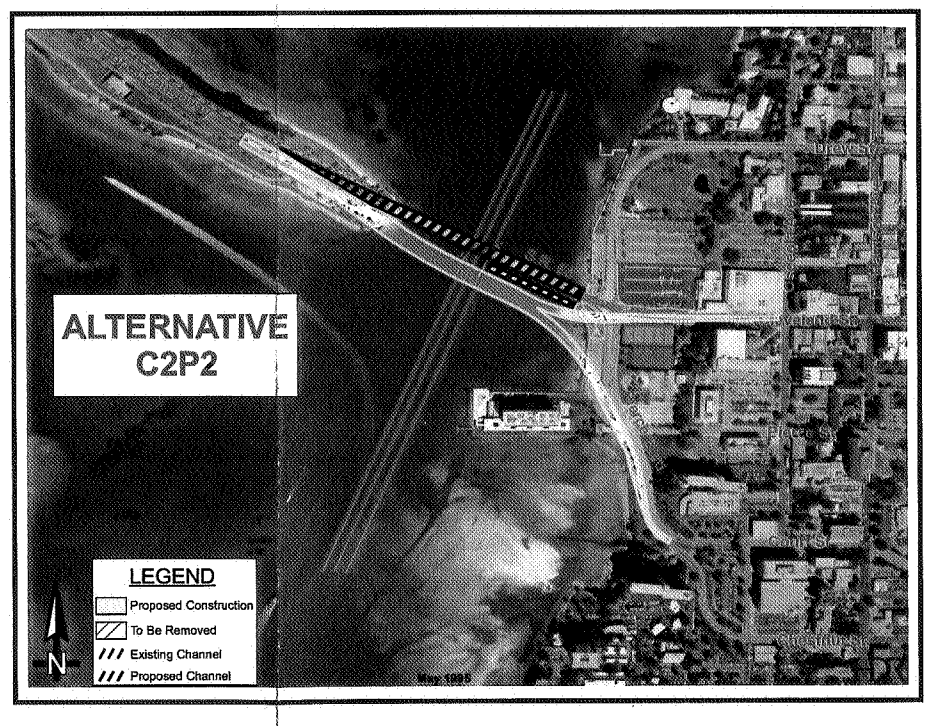
Cleveland Street (SR 60) is presently striped as a two-lane divided roadway with parallel on-street parking on each side. Alignment Alternative C4 within this corridor consists of a single four-lane structure which ties directly into Cleveland Street only. Alternative C4 requires a shift in the navigational channel of approximately 67 m (220 ft), as shown in the plan view (Figure 3-2).

The following items include the pros and cons of the Cleveland Street Corridor:

W:\MEMCSWAY\REPORTS\ENVIRON\FIGURES\FIGURE3-1.CDR

Memorial Causeway (S.R. 60) Bridge PD&E Study	ALTERNATIVE CORRIDORS	FIGURE 3-1





Memorial Causeway
(S.R. 60)
Bridge PD&E Study

PLAN VIEWS OF CORRIDOR ANALYSIS ALTERNATIVES

FIGURE 3-2

- A relocation of the navigational channel is required of approximately 67.1 m (220 ft).

- Alternative C4 will not reduce the volume of through traffic traveling on Cleveland Street in Downtown Clearwater. This will exacerbate the existing congestion problems in downtown. The removal of on-street parking on Cleveland Street would be necessary for Cleveland Street to be able to handle the projected traffic demand. This is inconsistent with the downtown redevelopment plan.

- There should be no additional noise level changes to either Pierce 100 Condominiums or Coachman Park. However, it would likely impact the Bayfront Tennis Complex, a public recreational property protected by Section 4(f) of the DOT Act of 1966.

- For Alternative C4, the visual impacts to downtown Clearwater are significant because of the structure width and vertical height required.

- The cost estimate for Alternative C4 is the least expensive alternative for construction/engineering, right-of-way and wetlands mitigation.

Pierce Boulevard Corridor Alternative

Pierce Boulevard is a four-lane undivided urban arterial which ties directly into the Court Street and Chestnut Street one-way pair. Court and Chestnut are two-lanes each west of Oak Avenue and three lanes each east of Oak Avenue.

For the Pierce Boulevard corridor, two different alternatives were developed and evaluated: Alternatives P4 and P4A.

Alternative P4 consists of a single four-lane structure which ties directly in to Pierce Boulevard (Figure 3-2). The navigational channel would need to be shifted approximately 59 m (192 ft) to the west to provide the required 19.8 m (65 ft) vertical navigational clearance. During construction, approximately 19.5 m (64 ft) of vertical clearance would be provided at the existing channel location. Under this alternative, the new bridge would not span Pierce Street; access to Pierce 100 Condominiums from Pierce Boulevard would be provided underneath the new bridge in the parking area located west of Pierce Boulevard, south of the Causeway.

Alternative P4A is very similar to Alternative P4; the main difference is in the vertical profiles. Alternative P4A would *not* require a shift in the navigational channel, and the eastern end of the bridge would be high enough to span Pierce Street, allowing access to the Pierce 100 Condominium via Pierce Street underneath the new bridge structure.

The pros and cons of the Pierce Boulevard Alternatives include the following items:

- There would be no shift in the navigation channel required if alternative P4A is selected; Alternative P4 would require a shift of approximately 58.5 m (192 ft).

- The existing SR 60 roadway (Gulf-to-Bay Boulevard) already connects to Court Street and the existing one-way pair system of Chestnut Street and Court Street. Therefore with this alternative, it is not necessary to redirect motorists to a new route or to construct a new connector roadway.

- There are no impacts to churches with this alternative; however, there are probable impacts to the Pinellas Arts Council building, which is a historic property protected by Section 4(f) of the DOT Act of 1966 and Section 106 of the National Historic Preservation Act of 1968.

- The cost estimate of this corridor falls below the estimate for the Drew Street corridor, but it is higher than the cost estimate for the Cleveland Street alternative.

- The traffic congestion which currently exists along Cleveland Street would be ameliorated to some extent due to the diversion of traffic to Court and Chestnut Streets.

Other Alternative Corridors Considered

Two other four-lane bridge alternatives were considered in the previous feasibility study which utilize a combination of corridors:

C1P4 — This alternative is similar to P4A except that it adds a westbound on-ramp from Cleveland Street. The profile of the 4-lane portion would be identical to that of P4A and the profile of the on-ramp from Cleveland Street would be similar to the profile for Alternative C4. Access to Pierce 100 would be the same as for Alternative P4A. Like Alternative P4A, no relocation of the navigational channel would be required.

C2P2 — This alternative is similar to C1P4 except that all westbound traffic would come off of Cleveland Street and all eastbound traffic coming off the bridge would proceed down Pierce Boulevard and continue to Chestnut Street. Vertically, the profiles would be similar to C1P4, and no relocation of the navigational channel would be required.

Recommended Corridor

An evaluation matrix which includes the environmental impacts and cost estimates for each of the alternative corridors is shown in Table 3-2.

TABLE 3-2 - CORRIDOR ALTERNATIVES EVALUATION MATRIX

Evaluation Factor	4-Lane Build Alternatives						No-Build
Estimated Costs ($millions)	C4	P4A	P4	C2P2	C1P4	D4	
Construction, Engineering, & CEI	16.86	17.77	19.63	20.53	20.72	19.70	
Right of Way (R/W)	0.00	0.47	0.47	0.50	0.47	2.06	
Mitigation for Wetlands						0.06	
Total	$16.9	$18.2	$20.1	$21.0	$21.2	$21.8	$6.0*
Right-of-Way Impacts							
Publicly-Owned Land (acres)	0.51	0.44	0.44	0.89	0.64	0.57	
Privately-Owned Land (acres)		0.27	0.27	0.31	0.27	0.47	
Total Acres	0.51	0.71	0.71	1.2	0.91	1.04	
Business Relocations	None	1	1	1	1	1	None
Church Impacts	1	None	None	1	1	1	None
Environmental Impacts							
Channel Relocation Required	Yes	No	Yes	No	No	Yes	No
Sea Grass Impacts (acres)	None	None	None	None	None	0.52	None
Mangrove Impacts (acres)	None	None	None	None	None	0.22	None
Probable Noise Level Changes							
Pierce 100 Condos	Minor	Minor	Minor	Minor	Minor	Minor	None
Coachman Park	Minor	Minor	Minor	Minor	Minor	Major	None
Potential Section 4(f) Involvement							
Coachman Park	None	None	None	None	None	Yes	None
Bayfront Tennis Courts	Yes	None	None	None	None	None	None
Traffic Flow, Access, & Service							
Need to Redirect Traffic to Drew St.	No	No	No	No	No	Yes	No
New East-West One-Way Pr Req'd	No	No	No	No	No	No	No
Requires some Parking Removal on Cleveland	No	No	No	No	No	No	No
Aesthetic Impacts							
Multiple Structures/ Ramps	No	No	No	Yes	Yes	No	No
View ***of*** the Bridge from ...							
Island Estates	No	No	No	No	No	Yes	No
Pierce 100 Condominiums	Yes	Yes	Yes	Yes	Yes	No	No
Coachman Park	?	?	?	?	?	Yes	No
Sandcastle Retreat Complex	?	?	?	?	?	Yes	No
City Hall	No	Yes	Yes	Yes	Yes	No	No
Harborview Center	Yes	Yes	Yes	Yes	Yes	No	No
The Oaks (on Chestnut)	No	Yes	Yes	Yes	Yes	No	No
View ***from*** the bridge to Downtown Clearwater	No	Yes	Yes	Yes	Yes	No	No
Socioeconomic Impacts							
Potential Impacts to Downtown Redevelopment Plan	Yes	Yes	Yes	Yes	Yes	No	Yes

* Costs include $2 million for a major rehabilitation (97-98) & $4 million for a major rehabilitation (2015); Costs do not include the estimated annual maintenance cost of $250,000 or the annual cost associated with delays due to bridge openings of over $1 million.

? = Possible adverse impact although difficult to determine

7/16/95

Based on considerations of environmental impacts, costs, traffic carrying capacity, and SR 60 continuity, the Pierce Boulevard corridor was recommended for further evaluation to the Clearwater City Commission on June 15, 1995. At that meeting, the commission voted unanimously to accept the recommendation and directed staff to concentrate on the Pierce Boulevard corridor for the further development of alternatives.

3.6 Build Alternatives

3.6.1 Design Year Traffic Operations

Information has been extracted from the Traffic Report (Reference 3-2) and Preliminary Engineering Report (Reference 3-3) for this section.

Existing and Future Traffic

In order to evaluate changes in the traffic network due to the proposed bridge project, several special traffic model runs were requested from the Pinellas MPO staff. These runs were made using the new Tampa Bay Regional (Traffic) Model. Runs were received for:

- 1996 Existing System
- Year 2015 Adopted Cost Feasible Plan
- Alt. P4, 2015, with 4-lane Court Street
- Alt. P4, 2015, with 6-lane Court Street
- Alt. P4, 2015, with Cleveland Street Extension

The first step was to convert all of the model outputs from peak season weekday traffic to annual average daily traffic (AADT) by use of a conversion factor (0.93) provided by FDOT. The next step was to check the model results for reasonableness. The reasonableness of the traffic model 1996 No-Build run results was checked by comparison of various screenline totals of model forecasts vs. estimated AADTs. In general, the model appeared to give very good results based on screenline totals. The differences range from less than 1 percent to approximately 15 percent. (These differences are probably less than the probable errors associated with trying to estimate 1996 AADTs, given the high degree of seasonal variation in traffic in the study area.)

The Traffic Report (Reference 3-2) recommended that the year 2015 projected AADTs be used for the year 2020 design year, due to the low projected growth rate and the declining *rate* of growth. For example, based on the MPO's model, traffic volumes on Memorial Causeway are expected to grow only 3.9 percent between 1996 and 2015. Based on this growth trend, the difference in projected traffic volumes on the causeway between 2015 and 2020 is only about 1/2 of 1 percent.

The 1996 Average Annual Daily Traffic (AADT) for Memorial Causeway (east of Island Way) was estimated to be approximately 38,500 vehicles per day (VPD). 1996 AADT estimates for other roadways in the study area are included in Figure 3-3. Design year 2020 No Build AADT projections are included in the same Figure; they were developed by refining traffic projections produced by the Tampa Bay Regional (Traffic) Model.

Future traffic projections for the design year 2020 are shown in Figure 3-4. These were developed based on refined and manually adjusted results from the Tampa Bay Regional (Traffic) Model.

Projected Levels of Service

Projected levels of service year 2020 for roadway segments are shown in Figure 3-5 for both the No Build and Build scenarios. The segment levels of service were determined using FDOT's 1995 generalized LOS tables. For the No Build scenario, Cleveland Street west of Myrtle is expected to operate at LOS E or F. For the Build scenario (Pierce Boulevard alternatives), traffic is shifted from Cleveland Street to Court and Chestnut Streets (due to the new bridge alignment and tie-in point), and as a result, Court Street between Greenwood Avenue and Highland Avenue would likely operate at LOS E or F. The net result of the proposed bridge project would be to shift congestion from a two-lane undivided street (Cleveland Street) to a one-way pair (Court Street and Chestnut Street). Gulf-to-Bay is expected to operate at LOS F under either scenario.

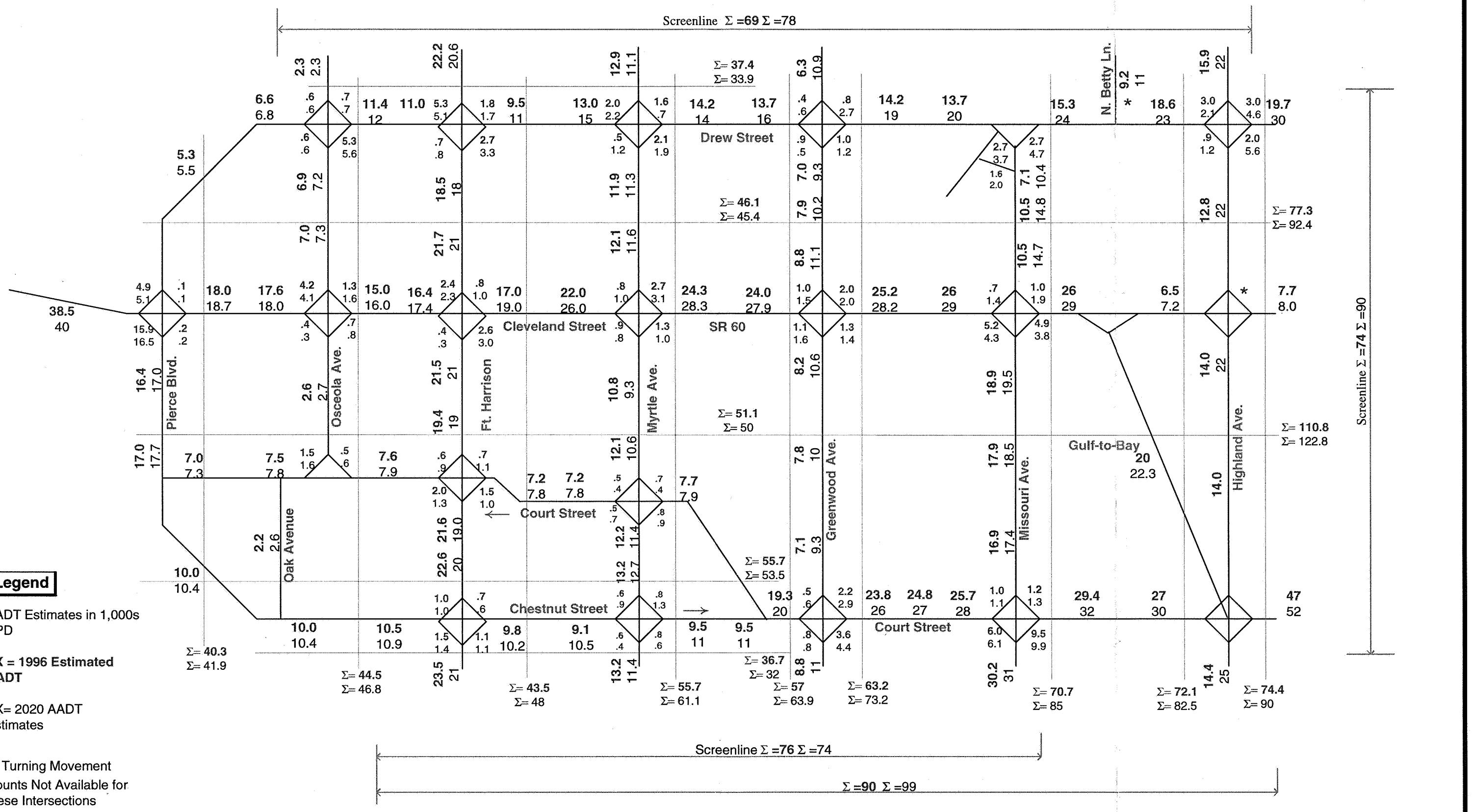
The level of service on the causeway is expected to improve slightly with the Build Alternative due to the absence of bridge openings and malfunctions, which add to motorists' delay.

Projected levels of service for *intersections* are shown in Figure 3-6. The results show that, like the Segment LOS comparison, with the Build Alternative, intersection levels of service along Cleveland Street would be expected to improve while the levels of service along Court and Chestnut Streets would decline somewhat, due to the expected diversion of traffic from Cleveland Street to Court/Chestnut Streets.

At present, no improvements are either planned or proposed for the four-lane segment of Court Street, between the end of the one-way pair (west of Greenwood) and Highland Avenue.

3.6.2 Typical Sections

Preliminary proposed typical sections for the bridge build alternative are shown in Figure 3-7. The portion of the bridge which is separated would allow more light to reach the bridge undersides thereby improving the aesthetics. However, final bridge typicals will be developed during Bridge Development Report (BDR) in the design phase.



Legend

AADT Estimates in 1,000s VPD

XX = 1996 Estimated AADT

XX= 2020 AADT Estimates

* Turning Movement Counts Not Available for these Intersections

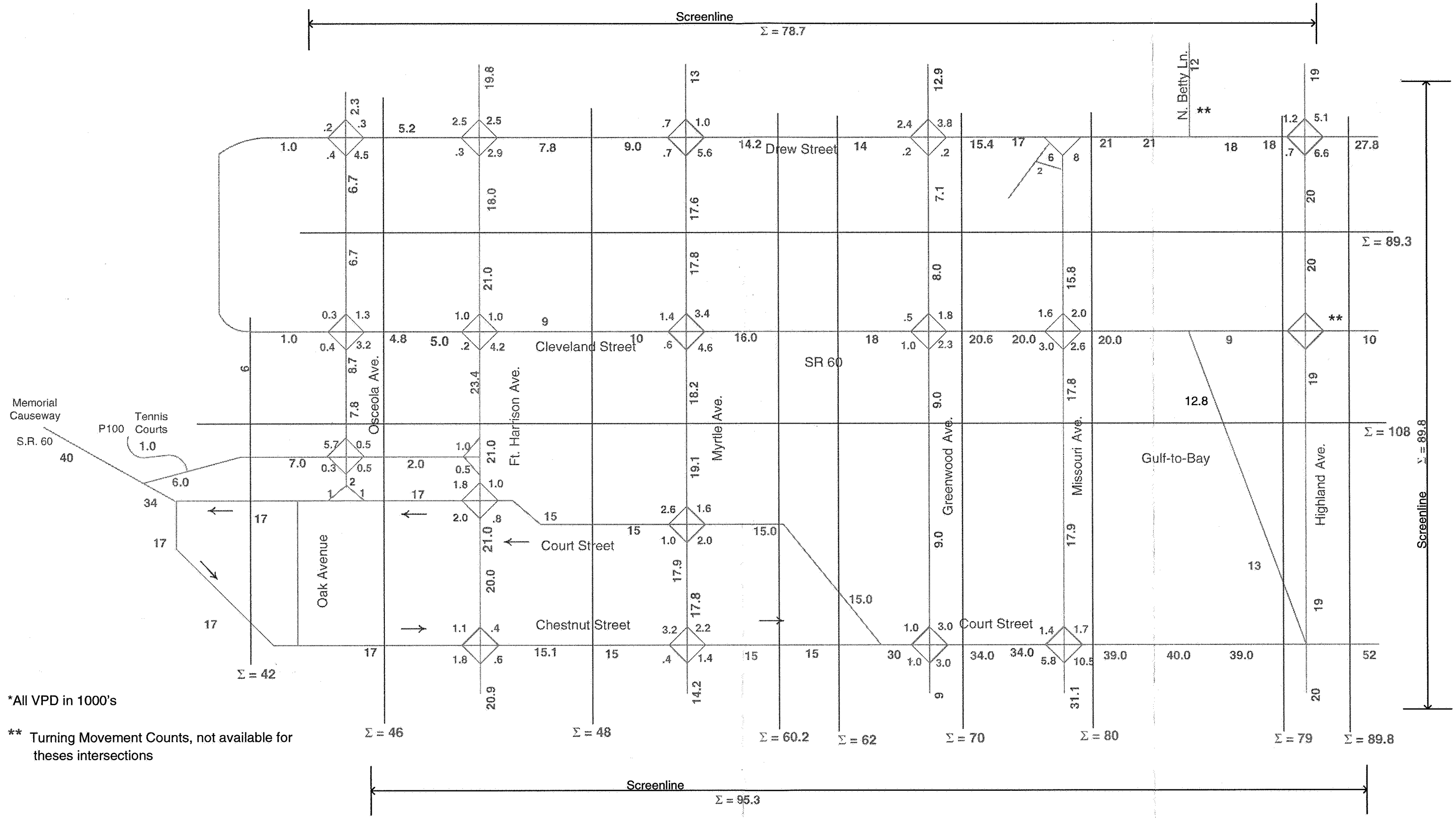
W:\MEMCSWAY\REPORTS\ENVIRON\FIGURES\FIGURE3-4REV.VSD

Memorial Causeway (S.R. 60) Bridge PD&E Study

AADTs FOR THE NO-BUILD PROJECT ALTERNATIVE

FIGURE 3-3

Rev. 8/29/96



*All VPD in 1000's

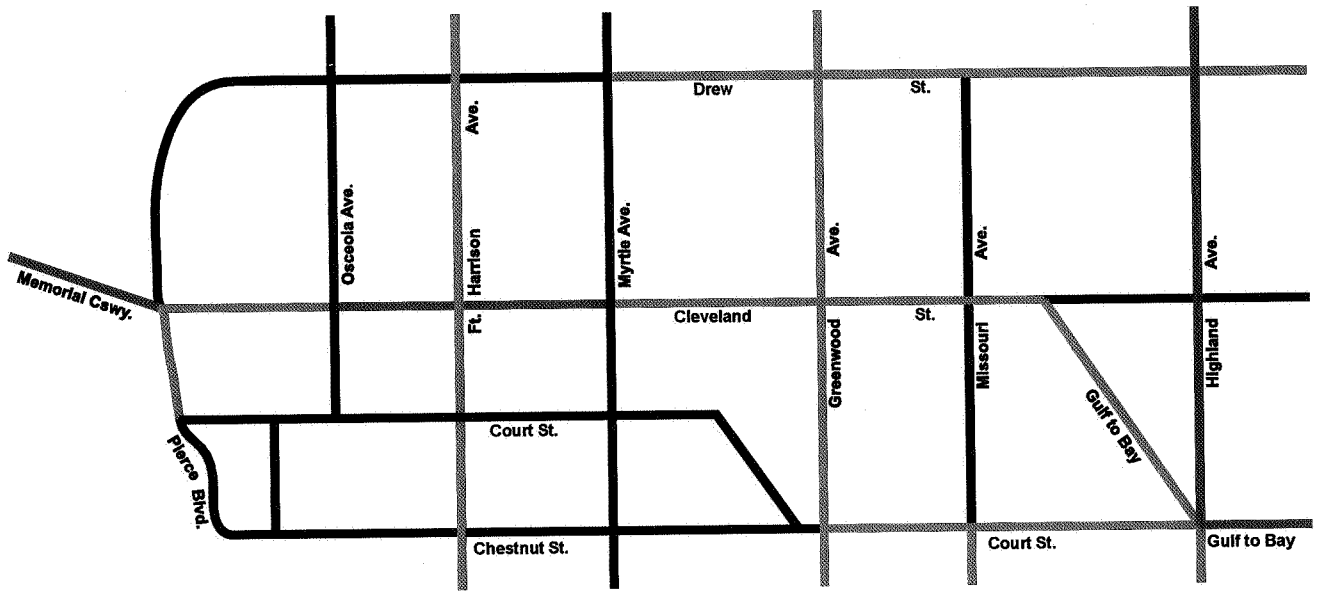
** Turning Movement Counts, not available for theses intersections

W:\MEMCSWAY\REPORTS\ENVIRON\FIGURES\FIGURE3-5REV.VSD

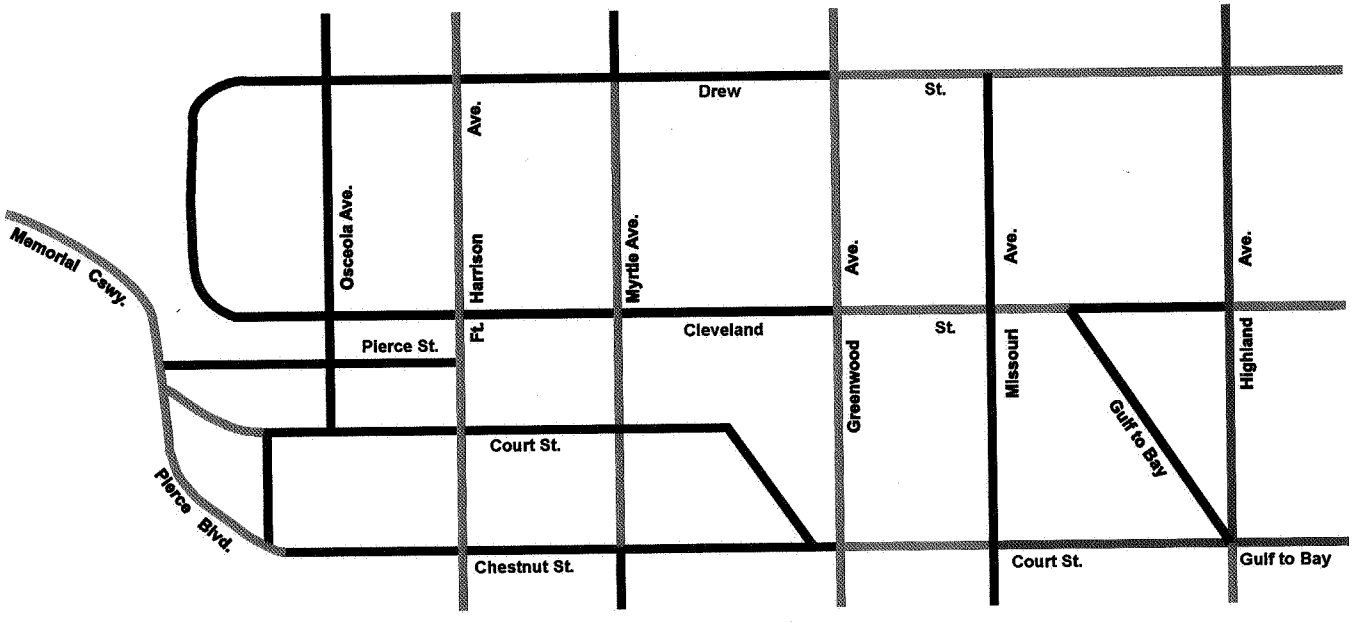
Memorial Causeway (S.R. 60) Bridge PD&E Study	**YEAR 2020 DESIGN AADTS**	**FIGURE 3-4** Rev. 9/97

LOS C — LOS D — LOS E — LOS F

No-Build Project



Alt. P4A With Pierce Street Connection



Memorial Causeway (S.R. 60) Bridge PD&E Study

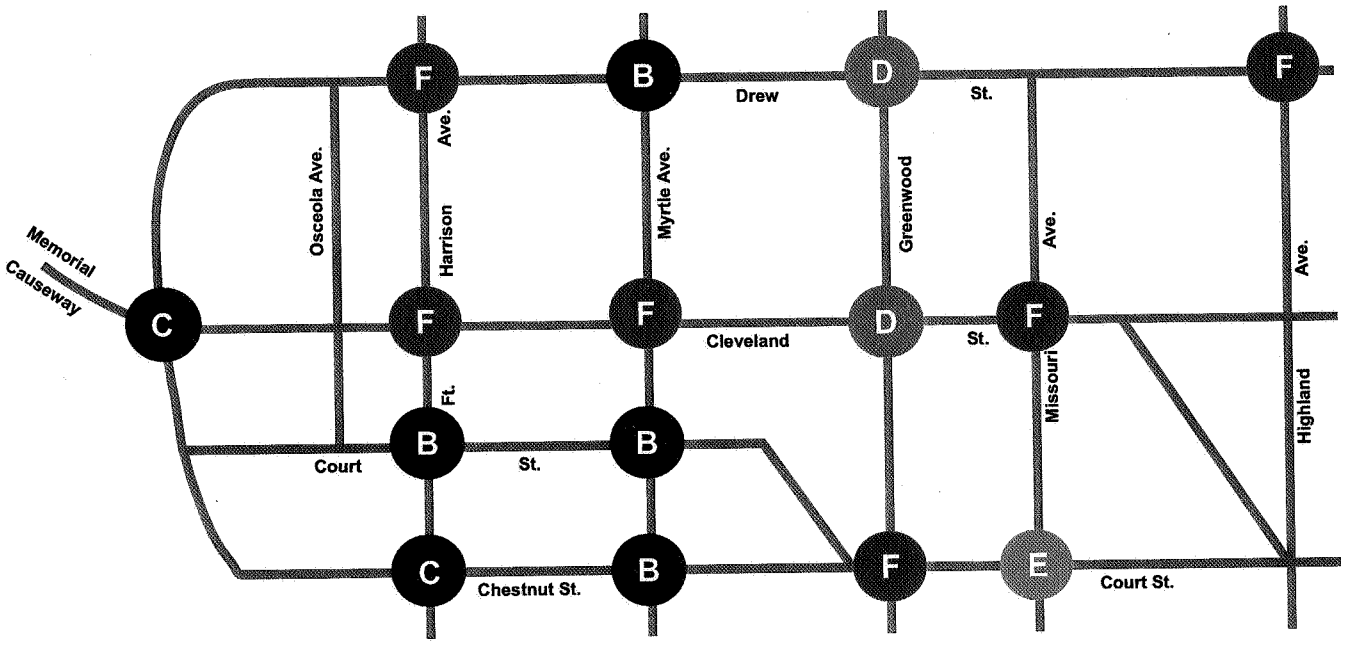
YEAR 2020 GENERALIZED SEGMENT LEVELS OF SERVICE

FIGURE 3-5

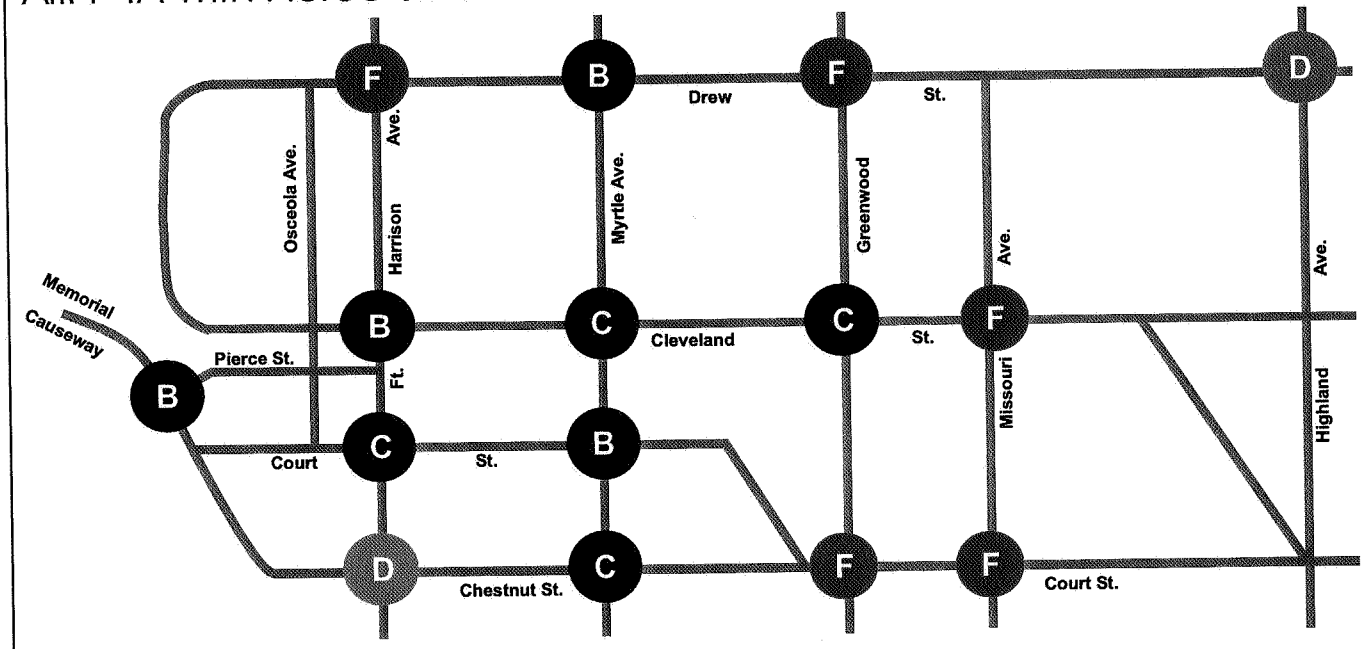
Rev. 10/97

W:\MEMCSWAY\REPORTS\ENVIRON\FIGURES\FIGURE3-5_REV.CDR

No-Build Scenario



Alt. P4A With Pierce St. Connection



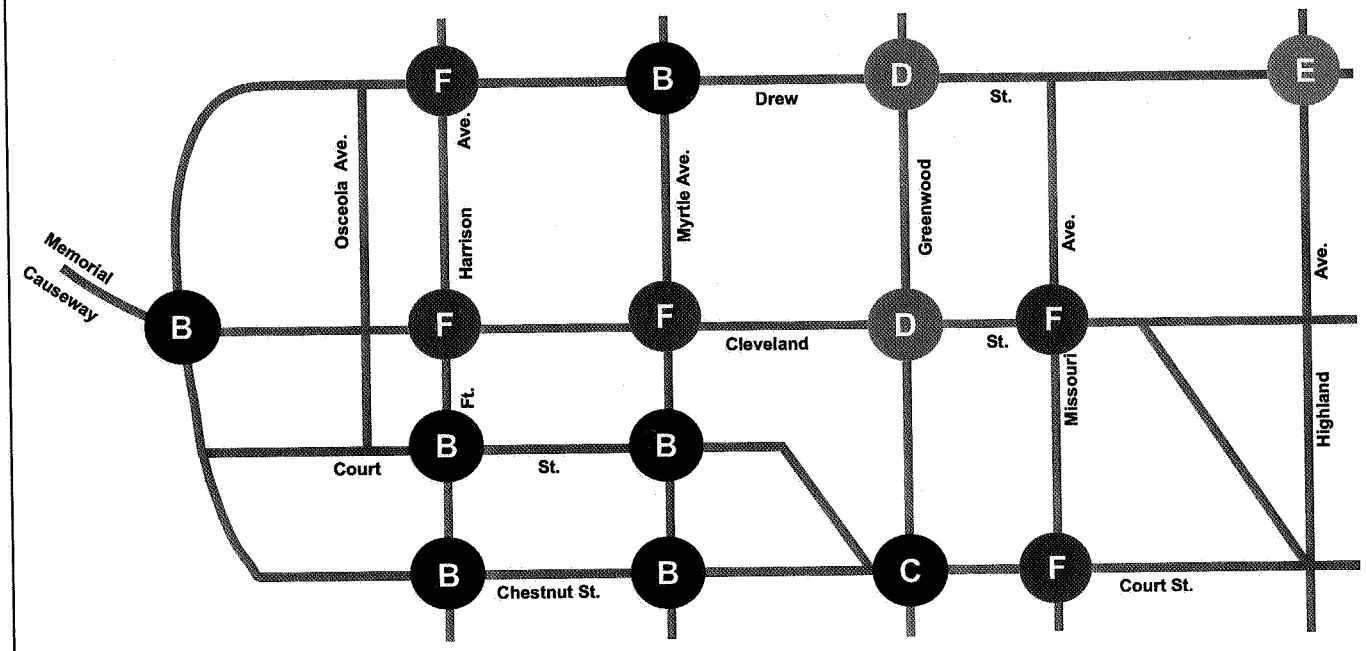
(Analysis based on Highway Capacity Software (HCS) with K = 10.55%, D = 57.9%, PM Peak Hour)

Memorial Causeway (S.R. 60) Bridge PD&E Study	**YEAR 2020 PROJECTED INTERSECTION LEVELS OF SERVICE**	**FIGURE 3-6**

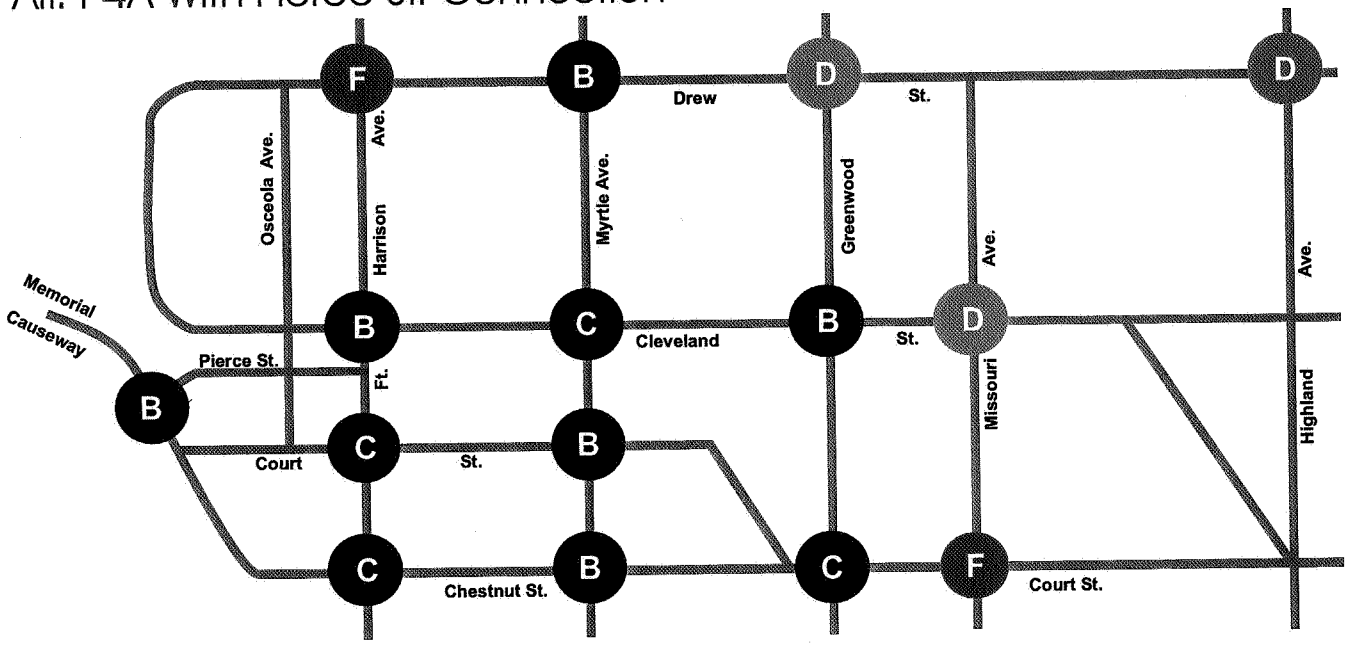
Rev. 10/97

W:\MEMCSWY\REPORTS\ENVIRON\FIGURES\FIGURE3-7REV.CDR

No-Build Scenario



Alt. P4A With Pierce St. Connection



(Analysis based on Highway Capacity Software (HCS) with K = 10%, D = 50%)

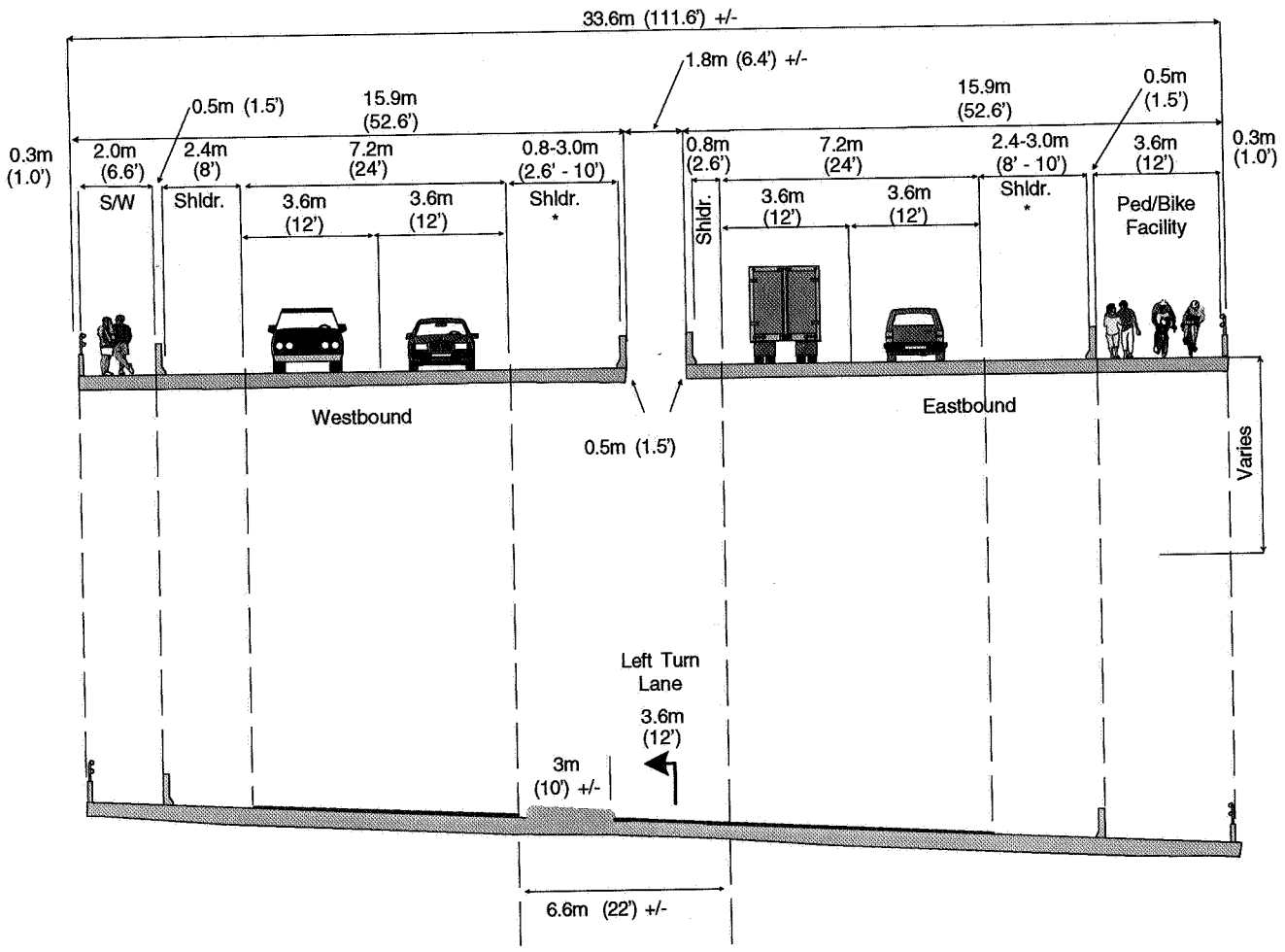
Memorial Causeway (S.R. 60) Bridge PD&E Study

YEAR 2020 PROJECTED INTERSECTION LEVELS OF SERVICE

FIGURE 3-6

Rev. 10/97

W:\MEMCSWAY\REPORTS\ENVIRON\FIGURES\FIGURE3-7_2REV.CDR



(Looking East or Southeast)

*** These shoulders are wider due to horizontal sight distance requirements**

Design Speed = 70 km/h (45mph)

"Metric to English conversions are nominal rather than exact."

W:\MEMCSWAY\REPORTS\ENVIRON\FIGURES\FIGURE 3-8REV6-98.VSD

Memorial Causeway SR 60 Bridge PD&E Study	**BRIDGE TYPICAL SECTIONS (TWIN STRUCTURES ALTERNATIVE)**	**FIGURE 3-7**

6/98

The typical section for the proposed bridge has facilities for both bicyclists and pedestrians. The south side of the bridge is proposed to include space for a pedestrian-bicycle facility approximately 3.7 m (12 ft) wide.

3.6.3 Alternative Alignments

Of the six four-lane build alternatives evaluated in the feasibility study (discussed in section 3.5), only one alternative alignment (P4A) was recommended for further study. The others were eliminated for the following reasons:

- Alternatives C1P4 and C2P2 involve multiple structures, are more expensive, have greater visual impacts, and received little public support.
- Alternative C4 would not be able to handle the traffic demand, would require channel relocation, impact the tennis courts, exacerbate existing congestion in downtown, and adversely affect the view from the bluff.
- Alternative P4 is very similar to Alternative P4A; however, it would require channel relocation.
- Alternative D4 was eliminated due to the higher environmental impacts, channel relocation required, intersection capacity deficiency at Drew/Ft. Harrison, visual and noise impacts to Coachman Park (a Section 4[f] protected resource), impacts to the Sandcastle Retreat, and the cost and impacts associated with having to widen Drew Street and build a SR 60 connector between Gulf-to-Bay and Drew Street.

The viable Build alternatives, described below, all tie directly into the existing four-lane Memorial Causeway on the western end. At the eastern end of the bridge, the manner of tie-in varies by alternative. The same typical section and design criteria were used for each of the alternatives. All of the alternatives are shown in plan view in Figure 3-8. Larger size plan and profile drawings are included in Appendix B.

Cleveland Street West Shifted (C4WS) Alternative

This alternative is significantly different from Alternative C4 which was studied during the feasibility study (corridor analysis). Alternative C4WS was developed in response to frequent citizen suggestions for this alternative.

The Cleveland Street West Shifted alternative consists of a single four-lane structure which ties in to the existing Drew Street/Cleveland Street/Pierce Boulevard intersection, at the existing grade. With this alternative, the signalized bayfront intersection would still exist. The new bridge, with this alternative, would extend much further west on the causeway than the existing facility. It would also require an approximate 400 m (1300 ft) westerly shift of the existing navigational channel in order to achieve the minimum 19.8-22.6 m (65-74 ft) vertical navigational clearance required.

Pierce Boulevard (P4A) Alternative

The Pierce Boulevard Alternative consists of a single four-lane structure which ties directly into Pierce Boulevard. The eastern portion of the bridge is high enough to span

Pierce Street and provide access to Pierce 100 via Pierce Street. The Pierce Boulevard Alternative terminates into the one-way pair of Court Street and Chestnut Street.

Access to the westernmost portion of downtown would be provided via either a "Cleveland Street Extension" (as shown in Figure 3-8) or a "Pierce Street Connection." In either case, a new intersection would be provided near the south end of the proposed bridge which would allow only right turns onto the bridge and left turns off of the bridge. Southeast-bound traffic would be free flow and not stopped by the traffic signal at this new intersection.

Pierce Boulevard North (P4A North) Alternative

The Pierce Boulevard North Alternative is almost identical in concept to the Pierce Boulevard Alternative described above. With this alternative, the bridge is located partially north of the existing bridge. Once again, there would be no required shift in the navigational channel, and the eastern portion of the bridge would be high enough to span Pierce Street in order to provide Pierce 100 residents access to the condominiums. This alternative also ties into the one-way pair of Court Street/ Chestnut Street.

Pierce Boulevard South (P4S) Alternative

The Pierce Boulevard South Alternative consists of a single four-lane structure which ties in directly to the southern portion of Pierce Boulevard at the Court Street/ Chestnut Street one-way pair. The bridge's alignment is south of both the existing bridge and the Pierce 100 Condominiums. This alternative would not require a shift in the navigational channel in order to achieve a 19.8 to 22.6 m (65 to 74 ft) vertical clearance. In addition, the existing access to Pierce 100 would not be altered.

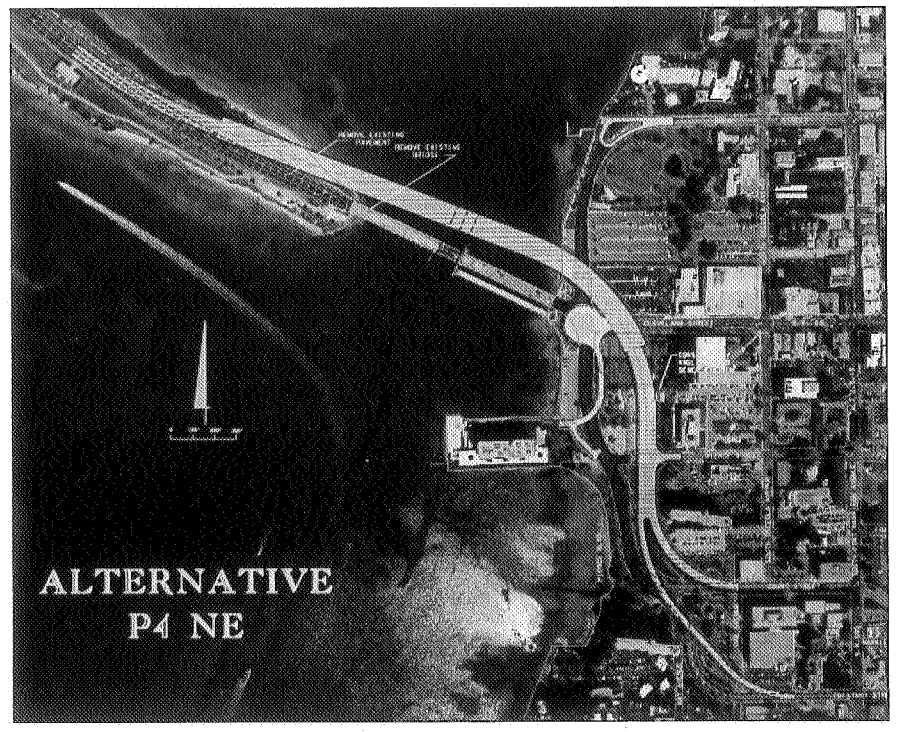
Alternative P4NE ("Bluff Boulevard")

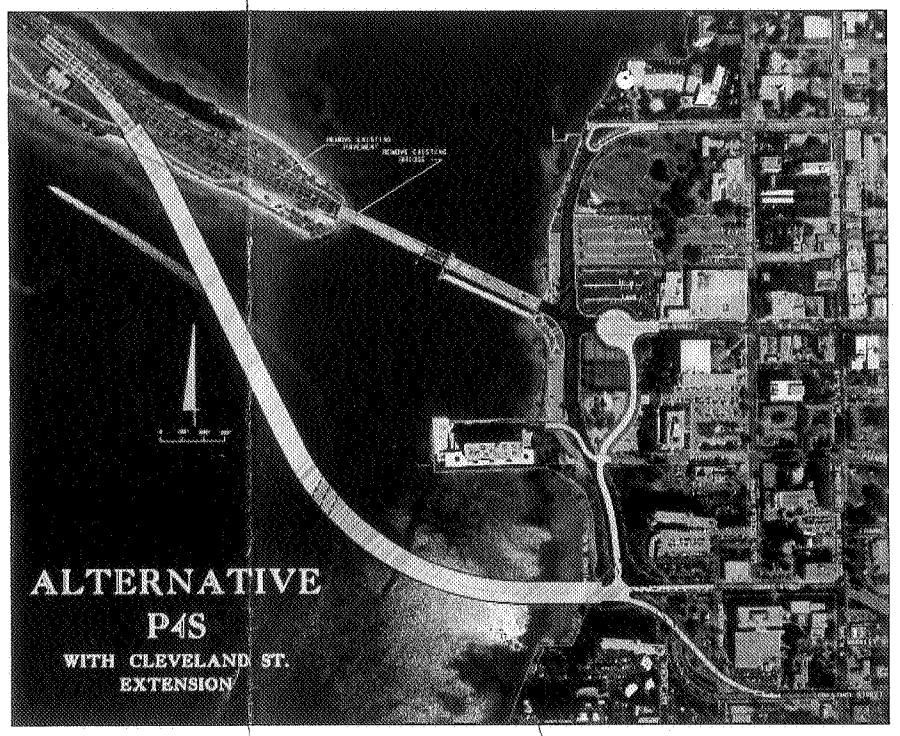
With this alternative, the roadway approach on the east end of the bridge is designed to be an extension of the bluff, which results in a shorter bridge structure. This shorter bridge structure, in turn, results in a lower construction cost. This alternative would have an at-grade intersection at Pierce Street, to allow right turns onto the new bridge and left turns off of the new bridge into downtown.

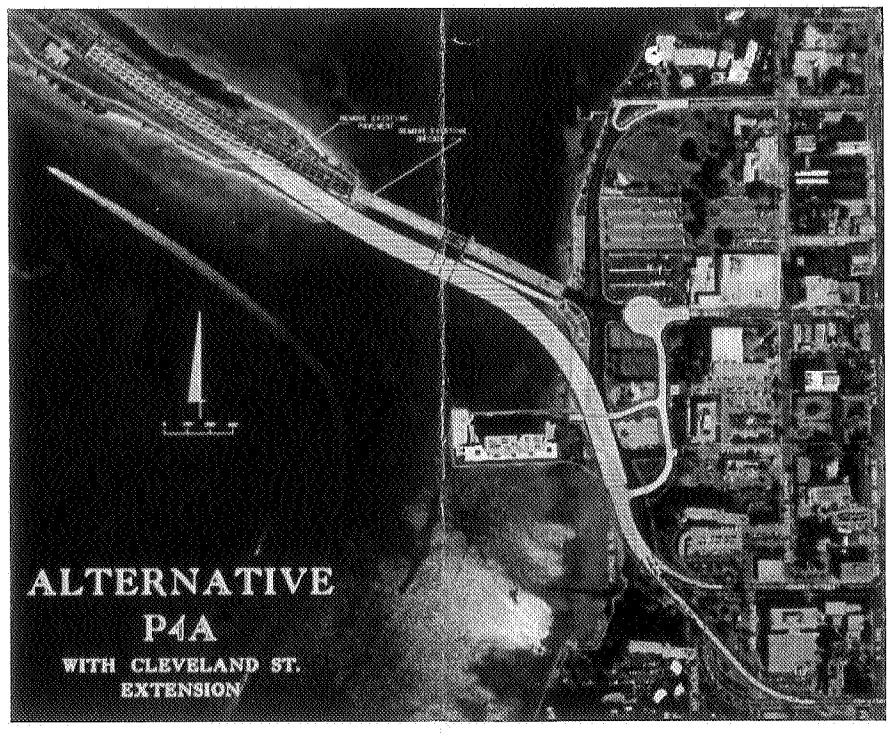
3.6.4 Evaluation of Alternatives

The evaluation of alternatives considered both the advantages and disadvantages which each alternative offered with respect to environmental impacts, traffic effects, consistency with the downtown redevelopment plan, aesthetics and costs.

A summary of the costs and impacts of each alternative, included in Table 3-3, is a revised Evaluation Matrix. This matrix has been updated since the initial selection of the preliminary Preferred Alternative to reflect alternative refinements, such as the Pierce Street Connection, to minimize impacts to resources protected by both Section 4(f) of the DOT Act of 1966 and Section 106 of the National Historic Preservation Act of 1968.







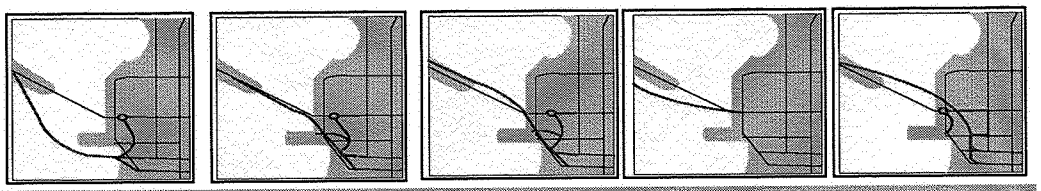
Memorial Causeway
(S.R. 60)
Bridge PD&E Study

PLAN VIEWS OF VIABLE BUILD ALTERNATIVES

FIGURE 3-8

TABLE 3-3
Alignment Alternatives Evaluation Matrix

Revised April 1998



Est. Costs ($ Mill.) for Bridge w/ 74' Clearance	P4S	P4A	P4A North	C4WS	P4 NE
Construction, Design, & Const. Supervision[1] (FL Bulb T/Segm. Box)	$31/ $37	$25/ $31	$29/ $35	$40/ $48	$24/ $29
Architectural and Urban Design Elements [2]	$2	$2	$2	$2	$2
Right-of-way and Utility Relocation Costs	1.2	2.4	1.9	0	3.9
Wetlands Mitigation ($75,000/ac. SB 1986)	0.0034	0.0024	0.0020	1.02	0.0013
Total Capital Costs (to nearest mill.) (FL Bulb T/Segm. Box)	$35/ $41	$31/ $36	$33/ $39	$43/ $51	$31/ $36
Periodic Channel Maintenance Costs to the City	None	None	None	Yes	None
Right-of-Way (R/W) Acreages & Relocations					
Net County-Owned Land Required (acres) *	0.37	0.63	0.42	0	1.33
Privately-Owned Land Required (acres)	0.02	0.10	0.16	0	0.33
Business Relocations (WTAN Radio)	No	Yes	Yes	No	No
Nonprofit Relocations (Arts Council)	Yes	No	Yes	No	Yes
Environmental Impacts & Navigational Issues					
Channel Relocation Required for 65' or 74' Clearance	No	No	No	Yes	No
Potential Need to Relocate Minor Channel South of the Causeway	Yes	No	No	No	No
Sea Grass Impacts (acres)	0.013 ac	0	0.0015 ac.	12 ac.	0.0016 ac.
Mangrove Impacts (acres)	0	0.0011 ac.	0.0064 ac.	1.6 ac.	0.0016 ac.
Other Wetland Impacts	0.032 ac	0.031 ac.	0.019 ac.	.023 ac.	0.014 ac.
Probable Noise level changes (# of noise sensitive receptors)	58	86	57	14	57
Potential Cultural Resource Involvement* **					
Harbor Oaks Residential Area Historic District	Yes	No	No	No	No
Bayfront Tennis Courts (Section 4(f))	No	No	No	No	Yes
Fort Harrison Hotel (candidate for *National Register*)	No	No	No	No	No
Pinellas Arts Council Building (candidate for *National Register*)	Yes	Yes	Yes	No	No
Traffic Flow & Access* **					
Requires Some On-Street Parking Removal	No	No	No	No	No
Maint. of Traffic (MOT) During Const. (1=Best, 5=Worst)	2	4	5	1	3
Socioeconomic Impacts					
Potential Avg.% Reduction in Sales to Cleveland St. Bus. west of Myrtle	0 to 5 %	0 to 5 %	0 to 5 %	Not Affected	0 to 5 %
Ability to connect peds & bicyclists, beach to downtown (1=Best)	5	3 **	3 **	1	2
Land Use Changes					
Ability to Expand Coachman Park to the west and south	Excellent	Good	Fair	Poor	Poor
Create more opportunity for pedestrian & waterfront uses	Excellent	Good	Fair	Poor	Poor

[1] Includes roadway approaches

[2] Includes railings, overlooks, stairs/elevator, lighting, park extension, pedestrian paving & roundabout

* includes allowance for existing R/W to be vacated, based on Cleveland Street Extension Concept except for P4A (based on Pierce Street Connection)

**pedestrian/bicyclist access could be improved by provision of an elevator/ramp/staircase structure

*** Based on Pierce Street Connecton refinement

The preliminary evaluation matrix used during the selection of the preliminary Preferred Alternative can be found in Appendix B.

Cleveland Street West Shifted (C4WS) Alternative

The advantages of this alternative include:

- Not necessary to reroute traffic from the Downtown Clearwater area
- Minimal impacts to Pierce 100 condominiums with respect to access and aesthetics.
- Minimal impacts to the Mainland Clearwater portion of the bridge

The disadvantages of this alternative include:

- Highest cost of all alternatives; approximately $14 million dollars higher than the other alternatives, excluding future maintenance costs for the new navigational channel
- Major relocation of the navigational channel (400m [1300 ft]) to the west; difficulty in obtaining Environmental Resource Permits (ERPs) due to environmental impacts
- Substantial impacts to sea grass beds (an estimated 4.86 ha [12 ac]) and mangroves; both of which are unique natural communities which are not able to be replanted and are difficult to mitigate
- Does not eliminate the bayfront signalized intersection nor alleviate the traffic congestion downtown
- Does not improve access for Pierce 100
- No increase in the amount of waterfront land for redevelopment efforts and park expansion

Pierce Boulevard (P4A) Alternative

The advantages of the Pierce Boulevard Alternative include:

- No navigational channel relocation required
- Minimal impacts to wetlands including sea grass beds and mangroves
- Improved safety and access to Pierce 100 Condominiums
- Improved flow of traffic between mainland Clearwater and Clearwater Beach
- Increase in the amount of waterfront land along Clearwater Harbor for City redevelopment and park expansion efforts

The disadvantages of the Pierce Boulevard Alternative include:

- Potential aesthetic and noise level changes to Pierce 100, City Hall, Harborview Center, and The Oaks
- Relocation of radio station WTAN required

Pierce Boulevard North (P4A North) Alternative

The advantages of this alternative include:

- No navigational channel relocation required
- Minimal impacts to wetlands including sea grass beds and mangroves
- Improved safety and access to Pierce 100 Condominiums
- Improved flow of traffic between mainland Clearwater and Clearwater Beach
- Increase in the amount of waterfront land along Clearwater Harbor for City redevelopment and park expansion efforts

The disadvantages of this alternative include:

- Potential aesthetic impacts to Pierce 100, The Oaks, Harborview Center, City Hall and the Pinellas County Arts Council
- Relocation of radio station WTAN required

Pierce Boulevard South (P4S) Alternative

The advantages of this alternative include:

- No navigational channel relocation required for Intracoastal Waterway, probable relocation of secondary east/west channel south of the Causeway
- Minimal impacts to wetlands including sea grass beds and mangroves
- Improved flow of traffic between mainland Clearwater and Clearwater Beach
- Improved safety and access to Pierce 100 Condominiums
- Provides the largest increase in the amount of open waterfront area along Clearwater Harbor, compared to the other alternatives, for City redevelopment and park expansion efforts
- Radio station WTAN would not have to be relocated

The disadvantages of this alternative include:

- Potential aesthetic impacts to Pierce 100, The Oaks, and Prelude 80
- Pinellas Arts Council building would have to be relocated

Alternative P4NE ("Bluff Boulevard")

Advantages of this alternative include:

- No navigational channel relocation required
- Minimal impacts to wetlands including sea grass beds and mangroves
- Increase in the amount of waterfront land along Clearwater Harbor for City redevelopment and park expansion efforts

- Improved flow of traffic between mainland Clearwater and Clearwater Beach
- Radio station WTAN would not have to be relocated

Disadvantages of this alternative include:

- Visual impacts to Harborview Center and City Hall
- Greater amount of right-of-way necessary, potentially including a portion of the Pinellas County Parking Garage and Harborview Center Parking area
- Potential visual and noise impacts to Coachman Park

3.6.5 Preliminary Preferred Alternative

On April 17, 1996, the Clearwater City Commission chose Alternative P4A as the Preliminary Preferred Alternative. This alternative has the lowest total capital costs, including right-of-way acquisition and mitigation costs. It also minimizes many of the potential environmental impacts associated with the project and is compatible with the downtown redevelopment plans. In addition, this alternative would facilitate the City's plans to expand Coachman Park to the waterfront.

Since the selection of P4A as the preliminary Preferred Alternative in April 1997, alignment refinements have been made to minimize impacts to the Haven Street House, a historic property protected by Section 4(f) of the DOT Act of 1966 and Section 106 of the National Historic Preservation Act of 1968, as well as to minimize impacts to the Bayfront Tennis Complex , also Section 4(f) protected resource. The latest version of this alternative is shown in plan view in Figure 3-9.

The preferred type of structure for the proposed bridge will be determined during the final design phase. Aesthetics and span lengths are expected to be important factors which will influence the type of structure proposed, in addition to public input. In addition to the type of structure, ancillary design features will be considered as mentioned above, including scenic overlooks on the bridge, decorative light poles, fixtures and bridge railings, and special concrete finishes and colors.

With respect to landscaping, a conceptual landscaping plan will be developed in coordination with the design of the proposed expansion of Coachman Park, a separate but related project which is proposed by the City.

With respect to the Haven Street House, additional landscaping will be planted to help soften the view towards the new bridge roadway approach from the house structure.

In addition, the Preliminary Engineering Report (Reference 3-3) discussed several special features that are presently being considered for inclusion in the final design concept:

- Bridge Features

  - scenic overlooks
  - decorative railings
  - aesthetic light poles and luminaires
  - architectural underside lighting
  - special concrete finishes and colors
  - special bicycle/pedestrian facility proposed for the south side of the structure

- Bridge Approaches

  A sidewalk partially on seawall next to Clearwater Harbor is proposed to run adjacent to the south side of the eastern bridge approach, to connect the higher-level bridge sidewalk to the existing ground level at the south end of the proposed bridge.

- Culvert

  A large culvert is proposed to be included underneath the Pierce Street Connector just east of the south bridge approach, to permit vehicular access to an underground storage vault (at parcel no. 13/08) owned by the Calvary Baptist Church.

- Guide Signing

The City proposes to transfer the S.R. 60 designation from Cleveland Street (and Gulf-to-Bay west of Highland Avenue) to Court and Chestnut Streets and Pierce Boulevard west of Highland Avenue. A conceptual signing plan has been developed which would help guide motorists through the revised street and highway network

3.6.6 Drainage and Stormwater Management

Existing land use and drainage characteristics on the mainland side of the project study area are comprised of urban development, served by curbed roadways and piped stormwater collector systems which discharge non-attenuated stormwater into Clearwater Harbor.

On the causeway (west) side of the project study area, the roadway is drained mainly by lateral overland sheetflow and occasional median drain pipes discharging directly into Clearwater Harbor. Drainage of the existing Memorial Causeway bridge structure is accomplished by scuppers in the bridge deck discharging directly into Clearwater Harbor.

Proposed bridge drainage measures will maintain the overall pre-existing drainage flow patterns evident in the existing drainage characteristics with some modifications. The proposed bridge spans include waterward bridge drainage scuppers and landward bridge deck storm water collector drains and pipe systems. Bridge deck drainage systems at the causeway approach will discharge into spreader swales situated along the causeway

S.R. 60
MEMORIAL CAUSEWAY BRIDGE
PROJECT DEVELOPMENT & ENVIRONMENT STUDY
STATE PROJECT NO. 15220-1599

CONCEPTUAL DESIGN PLANS FOR ALTERNATIVE P4A WITH THE PIERCE STREET CONNECTION

REV. 11-3-97

PREPARED FOR

CITY OF CLEARWATER

FLORIDA DEPARTMENT OF TRANSPORTATION

LEGEND:

PROPOSED R/W ---------- EXISTING R/W

PROPOSED PAVEMENT REMOVAL

PROPOSED PEDESTRIAN/BICYCLE FACILITY

4 LANE BRIDGE
DESIGN SPEEDS:
BRIDGE 70 KM/H (45 MPH)
APPROACHES 60 KM/H (35 MPH)

0 100' 200' 300'

REMOVE EXISTING BRIDGES

MEMORIAL CAUSEWAY

SR 60

INTRACOASTAL WATERWAY

DREW STREET

LAURA STREET

HARBORVIEW CENTER

LIBRARY

CITY HALL

CALVARY BAPTIST CHURCH

COURTHOUSE ANNEX

OAK COVE

THE OAKS

PARKING LOT

BAYFRONT

PIERCE STREET

HDR

FIGURE 3-9 PRELIMINARY PREFERRED ALTERNATIVE

roadsides providing treated broadflow discharge to Clearwater Harbor. The bridge deck drainage systems at the mainland approach will discharge into existing or improved storm water pipe systems discharging to scour abatement dissipater pools proposed at the pipe outfalls along the Clearwater Harbor waterfront.

On March 20, 1996, a pre-application meeting was held with the Southwest Florida Water Management District to discuss the project's proposed drainage. Recognizing that Clearwater Harbor is an Outstanding Florida Water, the Southwest Florida Water Management District determined that no additional water quality treatment was necessary because the proposed project is a bridge *replacement* with no increase in capacity.

3.7 References

Reference 3-1 - Memorial Causeway Bridge Feasibility Study Report. Prepared for the City of Clearwater in cooperation with FDOT by HDR Engineering Inc., July 1995.

Reference 3-2 - Traffic Technical Memorandum ("Traffic Report"). Prepared for the Memorial Causeway Bridge PD&E Study by HDR Engineering Inc., Revised Draft, December 1996.

Reference 3-3 - SR 60 (Memorial Causeway) Bridge Revised Second Draft Preliminary Engineering Report. Prepared for the City of Clearwater in cooperation with FDOT by HDR Engineering Inc., March 1998.

4.0 IMPACTS

4.1 Social and Economic Impacts

4.1.1 Community Services

Community services are shown in Figure 4-1. Community services located within the project study area include several Pinellas County and City of Clearwater office buildings (City Hall, Pinellas County Courthouse & Annex, Clearwater Municipal Services Building), City of Clearwater Public Library, police and fire stations, main post office, three churches (Peace Memorial Presbyterian, Calvary Baptist Church, Church of Scientology), two recreation/park areas (Coachman Park, Bayfront Tennis Complex), Downtown Clearwater Bus Station, Harborview Center (the City's newest civic center), Clearwater Chamber of Commerce, and the Pinellas Arts Council. No impacts are expected to the majority of these services. The Pinellas Arts Council is addressed in Section 4.2.1. Coachman Park and the tennis courts are addressed in Section 4.2.2.

A County surface parking lot located west of the Pinellas County Courthouse Annex will likely be impacted due to roadway geometric improvements required to meet current roadway design standards. Any lost parking spaces are expected to be replaced with either surface parking or parking garage spaces. Coordination with county officials regarding this issue has been ongoing.

Concerns have been expressed by County officials about the potential effect on pedestrian safety around the courthouse from the proposed bridge project since traffic volumes on Court and Chestnut Streets are expected to substantially increase. To facilitate pedestrian crossings of these streets by county employees and visitors, the Preferred Alternative is proposed to include pedestrian crossing signals or pedestrian bridges near Oak Avenue on Court and Chestnut Streets.

4.1.2 Community Cohesion

No divisive effects on any neighborhoods are expected due to the proposed project. Traffic patterns will change in the downtown area due to the rerouting of most beach-bound traffic to the new bridge via the Court Street/Chestnut Street one-way pair system. In addition, Drew Street will be "functionally closed" as a through street west of Alternate U.S. 19 (Fort Harrison Avenue). These traffic pattern changes are expected to reduce traffic volumes along Cleveland Street in downtown Clearwater.

Residents living in the nearby condominium of Pierce 100 are expected to have safer access to their property due to the proposed project. Access to Pierce 100 will be provided via Pierce Street, and their access will be under the new bridge.

This project has been developed in accordance with the Civil Rights Act of 1964, as amended by the Civil Rights Act of 1968 and Executive Order No. 12898.

4.1.3 Economic Impacts to Downtown

A separate study of the probable direct economic impacts of diverting traffic off of Cleveland Street in conjunction with the construction of a new bridge was performed by the University of South Florida's Center for Urban Transportation Research (CUTR) (Reference 4-1). The CUTR study concluded that businesses on Cleveland Street west of Myrtle Avenue could expect to lose between 0 to 5 percent of their sales due to traffic diversion from Cleveland Street. For businesses east of Myrtle Avenue, the average expected losses range from about 10 to 15 percent, based on an estimated 40 percent diversion of traffic off of Cleveland Street. Impacts to specific businesses could vary significantly, depending on their reliance on pass-by traffic for their business. Some of the most dependent businesses could be expected to relocate to the new "through" street (Court and Chestnut Streets) following the construction of a new bridge which ties into Court and Chestnut Streets. These businesses are predominantly located east of Myrtle Avenue.

The businesses in the central business district (Cleveland Street west of Myrtle Avenue) are mostly dependent on destination traffic and the large CBD employment base. The CBD is primarily a destination area and, overall, the economic impact on the CBD of diverting the pass-by traffic is expected to be negligible. If redevelopment activities for the CBD are implemented (e.g., pedestrian amenities, streetscape improvements, expanded Coachman Park, special signing for businesses, etc.), reduction of traffic and congestion in the CBD could help make the downtown a more attractive destination area, resulting in *increased*, not decreased, sales.

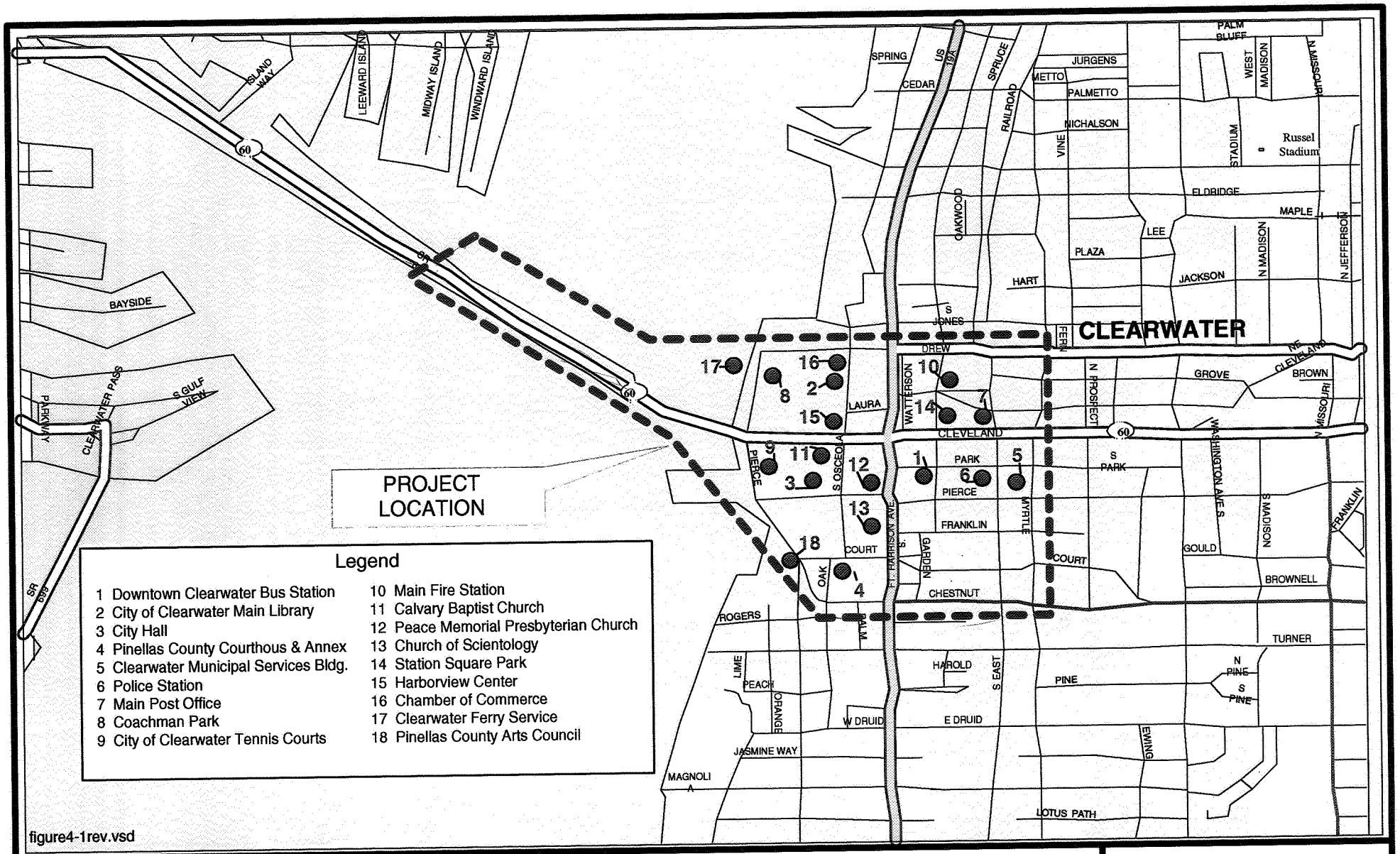
4.1.4 Land Use

Existing land uses adjacent to the project include recreation, commercial, public/semi-public, and multi-family residential (Figure 4-2). The downtown Clearwater area is highly developed with numerous restaurants, retail shops, office buildings, public city and county office buildings, and several churches. The multi-family residential uses which are located within the project area include Pierce 100 Condominiums, the Oaks (retirement home), and Oak Cove.

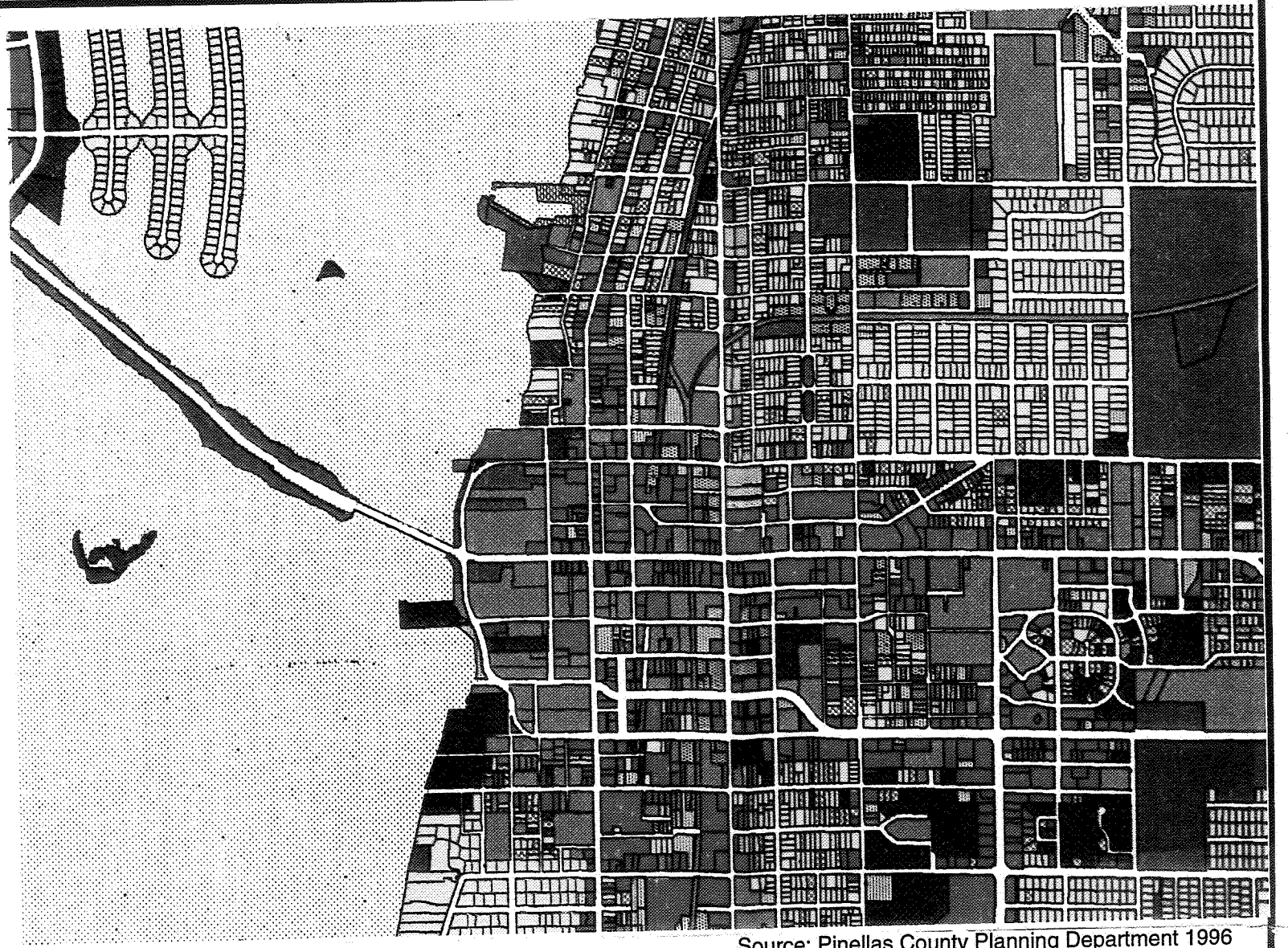
The causeway's existing land use is recreation/ open space. Other recreational/ open space sites include Coachman Park, the Bayfront Tennis Complex, and the old bridge fishing pier (Figure 4-2).

Future land uses for the project are shown in Figure 4-3. These are similar to the existing land uses with the addition of the Downtown Development District/ Regional Activity Center land use.

The proposed action is expected to result in only minor changes to land uses because it primarily uses existing right-of-way and follows existing roadway alignments. At present, the proposed project is *inconsistent* with the City of Clearwater Comprehensive Plan.



Memorial Causeway (S.R. 60) Bridge PD&E Study	**COMMUNITY SERVICES MAP**	**FIGURE 4-1**



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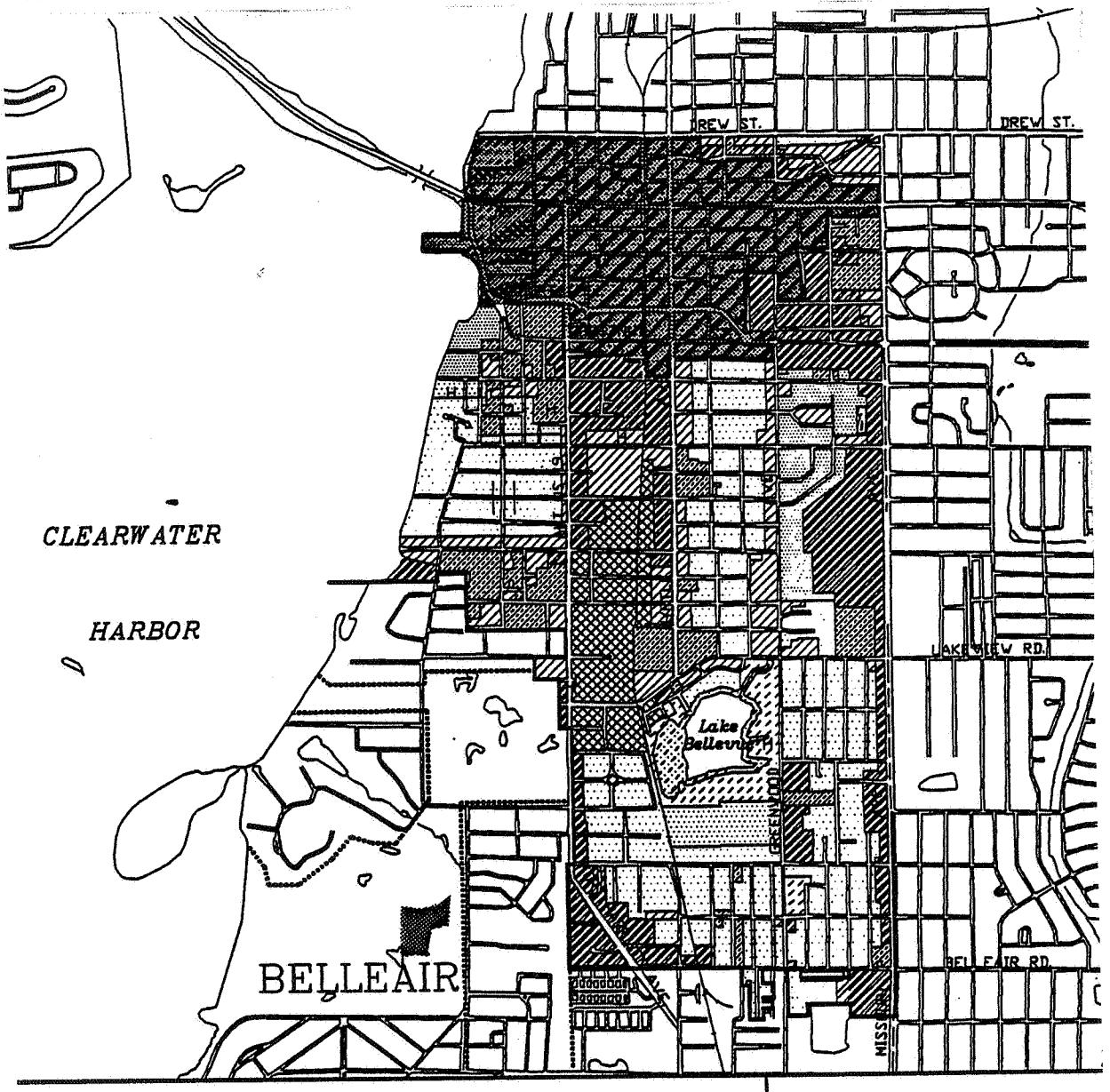
Source: Pinellas County Planning Department 1996

W:\MEMCSWAY\REPORTS\ENVIRON\FIGURES\FIGURE4-2.VSD

Memorial Causeway (S.R. 60) Bridge PD&E Study

EXISTING LAND USE MAP FOR THE PROJECT AREA

FIGURE 4-2



Downtown
Harbor Oaks South Greenwood
Future Land Use – Year 2000

Low Density Residential		Residential/Office	
Medium Density Residential		Commercial/Tourist Facilities	
High Density residential		Industrial	
Recreation		Public/Semi-Public	
Conservation		City Limits:	
Downtown Development Dist/ Regional Activity Center		Historic Resource	H

SOURCE: City of Clearwater Department of Planning and Development.

CLEARWATER
FLORIDA

Preparation of this map was aided through financial assistance recieved from the State of Florida under the Local Government Comprehensive Planning Assistance Program authorized by Chapter 86-187, Laws of Florida and administered by the Florida Department of Community Affairs.

Scale: 1" = 2000'

0 2000 feet

0 500 meters

N

November, 1988

Base map prepared by Martel Laboratories, Inc.

W:\MEMCSWAY\REPORTS\ENVIRON\FIGURES\FIGURE4-3.VSD

Source: City of Clearwater Comprehensive Plan 1989

Memorial Causeway (S.R. 60) Bridge PD&E Study

FUTURE LAND USE MAP DOWNTOWN CLEARWATER

FIGURE 4-3

However, the City's Comprehensive Plan will be updated during the next revision cycle to include the proposed project.

4.1.5 Relocations

A Conceptual Stage Relocation Plan (CSRP) has been prepared for this project (Reference 4-2). A total of one displacement is expected, a small business, WTAN Radio Station (AM 1340). Four potential relocation sites are identified in the CSRP.

No major businesses, in terms of employees or gross profit, will be displaced. Due to the small number and type of displacements, negative impact to the community is expected to be insignificant.

In order to minimize the unavoidable effects of right-of-way acquisition and displacement of people, the Florida Department of Transportation/ City of Clearwater will carry out a right-of-way and relocation program in accordance with Florida Statute 339.09 and the Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970 (Public Law 91-646 as amended by Public Law 100-17).

The Florida Department of Transportation provides advance notification of impending right-of-way acquisition. Before acquiring right-of-way, all properties are appraised on the basis of comparable sales and land use values in the area. Owners of property to be acquired will be offered and paid fair market value for their property rights.

No person lawfully occupying real property will be required to move without at least 90 days written notice of the intended vacation date and no occupant of a residential property will be required to move until decent, safe, and sanitary replacement housing is made available. "Made Available" means that the affected person has either by himself obtained and has the right of possession of replacement housing, or that the Florida Department of Transportation has offered the relocatee decent, safe, and sanitary housing which is within his financial means and available for immediate occupancy.

At least one relocation specialist is assigned to each highway project to carry out the relocation assistance and payments program. A relocation specialist will contact each person to be relocated to determine individual needs and desires, and to provide information, answer questions, and give help in finding replacement property. Relocation services and payments are provided without regard to race, color, religion, sex or national origin.

All tenants and owner-occupant displaces will receive an explanation regarding all options available to them, such as (1) varying methods of claiming reimbursement for moving expenses; (2) rental of replacement housing, either private or publicly subsidized; (3) purchase of replacement housing; (4) moving owner-occupied housing to another location.

Financial assistance is available to the eligible relocatee to:

1. Reimburse the relocatee for the actual reasonable costs of moving from homes, businesses, and farm operations acquired for a highway project;

2. Make up the difference, if any, between the amount paid for the acquired dwelling and the cost of a comparable decent, safe and sanitary dwelling available on the private market;

3. Provide reimbursement of expenses, incidental to the purchase of a replacement dwelling;

4. Make payment for eligible increased interest cost resulting from having to get another mortgage at a higher interest rate. Replacement housing payments, increased interest payments, and closing costs are limited to $22,500 combined total.

A displaced tenant may be eligible to receive a payment, not to exceed $5,250, to rent a replacement dwelling or room, or to use as down payment, including closing costs, on the purchase of a replacement dwelling. The brochures which describe in detail the Department's relocation assistance program and right-of-way acquisition program are "Your Relocation: Residential", "Your Relocation: Businesses, Farms and Nonprofit Organizations", "Your Relocation: Signs" and "The Real Estate Acquisition Process" and all of these brochures are distributed at all public meetings and made available upon request to any interested persons.

4.1.6 Utilities and Railroads

There are numerous utilities located within the study area, including City sanitary sewer, Clearwater gas, storm sewers, water, electric, telephone, and cable TV. Major utilities include a 0.305 m (12 in) subaqueous natural gas line which runs between the north side of the causeway and Drew Street beneath Clearwater Harbor. No impact to this line is expected. Subaqueous Florida Power electrical cables and GTE telephone cables also cross the Harbor south of and parallel to the existing bridge. Some of these lines will likely need to be relocated.

The City also has a 0.51 m (20 in) sanitary sewer force main which crosses the Harbor between the south side of the causeway and the lift station located south of the Bayfront Tennis Complex below the bluff, near City Hall. A 0.15 m (6 in) gas main runs parallel to this force main (Reference 4-3). These lines will need to be protected during and after construction. Power and telephone lines running along Pierce Boulevard will also need to be relocated. All affected utilities have been asked to provide cost estimates for these relocations, and these estimates will be included in the Final Preliminary Engineering Report.

A CSX railroad line runs along East Avenue within the project study area. According to CSX, the track is used by one freight train which travels from the train depot in Bellair to Tampa, via Oldsmar. No impact to this rail line is expected as a result of the proposed project.

4.2 Cultural and Historical Resources

4.2.1 Archaeological and Historical

In accordance with the procedures contained in 36 CFR, Part 800, a Cultural Resource Assessment, including background research and a field survey coordinated with the State Historic Preservation Officer (SHPO), was performed for the project (References 4-4, 4-5). As a result of the assessment, seven sites located within the Area of Potential Effect (APE) were identified, which were determined eligible for listing on (or listed on) the National Register of Historic Places (Figure 4-4). Through the application of the Criteria of Adverse Effect, the Federal Highway Administration in consultation with the State Historic Preservation Office, determined that the project would not have an adverse effect on the Haven Street House (8Pi8022). The Executive Director of the Advisory Council of Historic Preservation concurred with the conclusion. Based on the fact that no additional archaeological or historical sites or properties are expected to be encountered during subsequent project development, the Federal Highway Administration has determined that no other National Register properties would be impacted (Appendix E, Exhibit 4, Exhibit 6).

4.2.2 Recreational/Parklands [Section 4(f)]

Potential Section 4(f) lands within the project area include Coachman Park, the Bayfront Tennis Complex and a City of Clearwater fishing pier.

Coachman Park is located within the project area, northeast of the existing Memorial Causeway Bridge. The proposed project will cause no adverse impacts to the park, including noise, visual effects, or traffic access. No right-of-way is proposed to be acquired from the park. The City has recognized the opportunity for the park to be expanded to the waterfront due to the proposed project. In addition, access to the park will be made easier for bicyclists and pedestrians due to the rerouting of through traffic on Drew Street and Cleveland Street to the Court and Chestnut Streets one-way pair system.

The Bayfront Tennis Complex is a City-owned recreational facility located on the south east corner of the Cleveland Street, Drew Street and Pierce Boulevard intersection. The proposed action will not require right-of-way from the tennis complex. No impacts to the tennis complex, either direct or indirect, are expected.

The City's old-bridge fishing pier is proposed to be demolished as part of the construction of a new bridge and its functions would be replaced by a more modern fishing facility to

be located in the vicinity of Coachman Park. Funds to replace the fishing pier are already budgeted in the City's fiscal year 2000 Capital Improvement Program.

The Federal Highway Administration has determined that Section 4(f) does not apply to the project (Appendix E, Exhibit 5).

4.3 Natural and Physical Impacts

4.3.1 Pedestrian and Bicycle Facilities

The Memorial Causeway is presently classified as "bicycle friendly" by the Pinellas County Metropolitan Planning Organization since it has a paved bicycle path which runs along the south side of the Causeway, between Clearwater Beach and the west end of the existing bridge. Existing provisions for pedestrians and bicyclists are very limited on the existing Memorial Causeway Bridge. The existing facility consists of 1.5 m (5.0 ft) sidewalks on each side of the bridge. There is only a small raised curb to separate the sidewalk from the roadway. Bicyclists must either take up a traffic lane or share the narrow sidewalks with pedestrians.

Sidewalks are proposed to be included on the outside of each bridge structure, assuming that a "twin structures" alternative is selected. These sidewalks are proposed to be a minimum of 2.0 m (6.6 ft) in width. The sidewalk on the south side is proposed to be a special bicycle/pedestrian facility 3.6 m (12 ft) in width. The bridges are also proposed to include paved outside shoulders which can be used by bicyclists in addition to emergency use by disabled vehicles. All sidewalks and bicycle pathways will tie into connecting facilities on the roadway approaches at either end of the proposed new bridge.

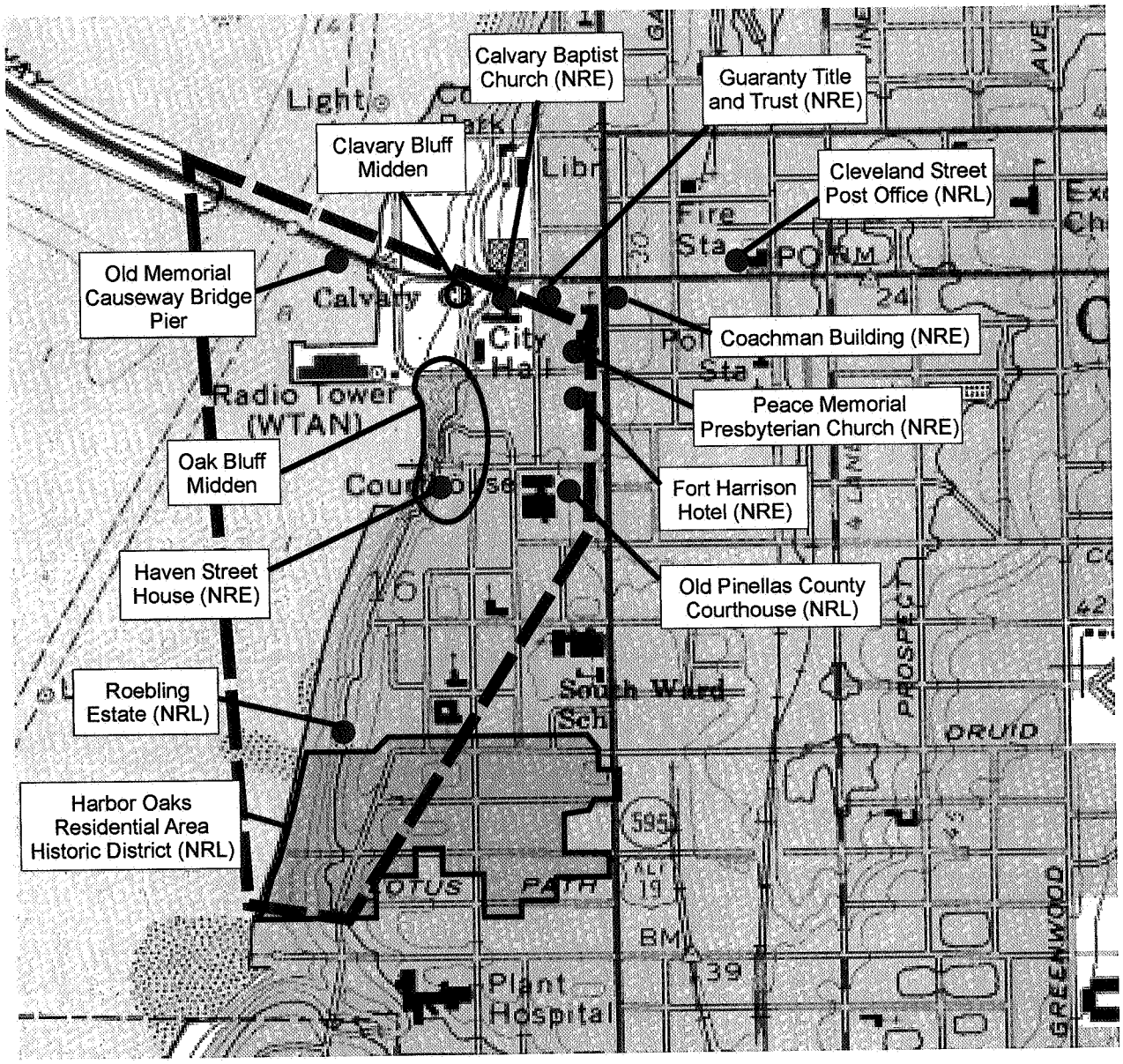
Bicyclists who approach the bridge on the north side will be encouraged through signing to use the south side of the bridge to cross the Harbor, since a special bike/ped facility is proposed for that side of the bridge. For bicyclists who prefer to use the north side of the bridge, they would be free to ride on the shoulder.

4.3.2 Visual/Aesthetic

This section is a brief summary of the Visual Impacts Analysis Report (Reference 4-6) prepared for the project.

In assessing the visual impacts of a new facility, factors taken into consideration include its form, bulk, spacing, lines, textures, and colors, and how well these characteristics blend with or complement the existing visual environment. Other factors that are analyzed include the unity of elements in a view, the visual "clutter" in a view, and its vividness – how memorable a view is.

Viewers are divided into two groups: those who use the facility and have a view from the facility, and those involved in activities adjacent to the facility and have a view of the facility. Because of the sensitive nature of the project area and the relatively short length



Legend

- Archaeological Site
- Historic Structure
- Historic District
- Area of Potential Effect

(NRL) - Listed on the National Register
(NRE) - Eligible for listing on the National Register

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S.R. 60/Memorial Causeway Bridge PD&E Study	**CULTURAL RESOURCES IN THE PROJECT AREA**	**FIGURE 4-4**

of time that motorists spend on the roadway within the project area, this analysis summary only discusses views of the facility from various sites in its environment.

In the area of the project, Clearwater Harbor is the primary feature of all existing views. It runs north-south and its opposite shores, with the exception of the Causeway, are separated by about 1.6 – 3.2 km (1 – 2 mi) of water. The Memorial Causeway crossing the harbor is the most dominant feature aside from the water itself. A 7.6 m (25 ft) high bluff, which runs from north to south on the downtown side of the Harbor and about 90 m (300 ft) east of the water's edge, is the only natural change in the elevation of the site. It is held in high regard by the citizens of Clearwater for the views of the harbor it provides.

The viewsheds along the corridor can be classified into 6 distinct "Visual Assessment Units."

Unit 1 – Sand Key -- Sand Key sits to the southwest of the project area. From Sand Key, the view will change in that the new bridge will rise above the tree line while the existing bridge blends into the tree line. The bridge will appear as a thin stripe which originates at Pierce 100. Because of the increased span length the piers will stand out as more distinct elements. However, the bridge will continue to be a very small element in the total visual field.

Unit 2 – Harbor Oaks -- Harbor Oaks is a historic residential development located approximately 975 m (3,200 ft) south of the existing bridge. From Harbor Oaks the change in the view will be similar to the change from Sand Key. The bridge on the downtown side will continue to be blocked by Pierce 100. From this distance the bridge will appear as a thin stripe which originates at Pierce 100. The bridge will continue to be a small element in the total visual field.

Unit 3 – Clearwater Beach/Memorial Causeway -- Three viewpoints were chosen to represent the range of views possible from the beach.

South Shore:
The view from the southeastern shore of Clearwater Beach will include the full length of the bridge and its higher profile. Because of the additional height the bridge will be above the tree line and will be more prominent. The piers will be more widely spaced and simpler, reducing the visual clutter of the existing view and allowing for views of the harbor to the north underneath the structure.

Island Estates – Windward Island:
The view from Island Estates will include the full length of the bridge and its high profile. Because of the additional height the bridge will be above the tree line and will be more prominent. The piers will be more widely spaced and simpler, reducing the visual clutter of the existing view and allowing for views of the harbor to the south underneath the structure.

Memorial Causeway:
P4A will run parallel to the existing bridge over the water. Therefore while it will be significantly higher, the view will not include much of the bridge's superstructure, but rather a large amount of the bridge deck. Existing views of downtown Clearwater's skyline will be blocked when looking east along the roadway.

Unit 4 – Seminole Point -- From Seminole Point, the bridge will be approximately twice as high as the existing structure and therefore much more prominent on the horizon. The piers will be more widely spaced than the existing bridge, opening up the views of the harbor to the south and southwest underneath the bridge, including views of the Clearwater Pass bridge.

Unit 5 – Pierce 100 -- Viewpoints:

Looking North: From the ground and lower level units, views of the harbor will be opened up through the piers of the new bridge. From the 4th and 5th floors the view will include the bridge near eye level (approximately 183 m (600 ft) . Above that, the views of the harbor to the north will be unchanged. From all levels, the bridge's increased size will be obvious.

Looking West: The westernmost end of the bridge will be visible.

Unit 6 – Harbor Front (The Bluff) -- There is a wide range of views available from the harbor front. Generally, from the viewpoints on the bluff, alternative P4A will be a new, more prominent feature in the field of vision with more prominent horizontal and vertical curves. From the viewpoints at water level, the bridge will be mostly overhead, and new views through the structure will be created which are blocked by the existing bridge. The height and shape of the piers as well as the vertical curvature will be the most striking aspects of the structure.

A short stretch of the bridge will cross over land. While this will do little to disrupt most of the views from the waterfront, it will impact the area visually in other ways. The simplicity and appearance of the bridge underside will be an important design consideration with major visual consequences. Additionally, 2 or 3 pier lines will be on land, adding large features to viewpoints directly under or adjacent to the structure.

4.3.3 Air Quality

The project alternatives were subjected to a graphical Screening Test which makes various conservative worst-case assumptions about the meteorology, traffic, and site conditions (Reference 4-7). The Screening Test uses these assumptions in the MOBILE Emissions Series Model and CALINE3 models to produce a series of curves which can be used to determine the critical distance. The critical distance is the closest a receptor can be to a given intersection without any chance of a significant air quality impact. The

Screening Test for Urban Areas was used. Table 4-1 contains the input data and results for the worst-case intersections.

TABLE 4-1
AIR QUALITY SCREENING TEST DATA AND RESULTS

Intersection	Intersection Leg	Alternative	Year	Speed* km/hr (mph)	Peak Volume** (VPH)	Critical Distance m (ft)	Closest Receptor m (ft)
Court/ Ft. Harrison	Northbound	No-Build	2000	48 (30)	1240	< 3 (10)	393 (1290)
	Northbound	No-Build	2020	48 (30)	1140	< 3 (10)	393 (1290)
	Northbound	P4A	2000	48 (30)	1503	< 3 (10)	393 (1290)
	Northbound	P4A	2020	48 (30)	1392	< 3 (10)	393 (1290)
Chestnut/ Ft. Harrison	Eastbound	No-Build	2000	48 (30)	1104	< 3 (10)	503 (1650)
	Eastbound	No-Build	2020	48 (30)	1098	< 3 (10)	503 (1650)
	Eastbound	P4A	2000	48 (30)	1842	< 3 (10)	503 (1650)
	Eastbound	P4A	2020	48 (30)	1833	< 3 (10)	503 (1650)
Memorial Cswy/ Downtown Connector	Eastbound	P4A	2000	56 (35)	2372	3 (10)	186 (600)
	Eastbound	P4A	2020	56 (35)	2443	3 (10)	186 (600)
		No-Build	n/a	n/a	n/a	n/a	n/a
Bayfront Intersection	Eastbound	No-Build	2000	48 (30)	2069	3 (10)	9 (30)
	Eastbound	No-Build	2020	48 (30)	2134	3 (10)	9 (30)
		P4A	n/a	n/a	n/a	n/a	n/a

* Speeds are defined as the average cruise speed for the highest peak-hour volume leg.
**Source: Traffic Report for the Memorial Causeway Bridge PD&E Study, Revised December 1996.

The receptors used for this analysis include the Pierce 100 pool area, Bayfront Tennis Complex, Coachman Park, and the fishing pier (located just south of the existing bridge).

For Alternative P4A, the closest receptor was found to be the Bayfront Tennis Complex. For each of the intersections, the critical distance is always less than the distance to the

closest receptor. The project therefore will not have a significant impact on air quality and passes the air quality screening test.

Construction activities will cause minor short-term air quality impacts in the form of dust from earthwork and unpaved roads and smoke from open burning. These impacts will be minimized by adherence to all State and local regulations and to the FDOT Standard Specifications for Road and Bridge Construction.

All State and local agencies were provided with an opportunity to comment on this project. There were no adverse comments regarding air quality.

The proposed project is exempt from the requirement that a conforming determination be made pursuant to 40 CFR 51.460.

4.3.4 Noise

A noise study was conducted to evaluate potential noise impacts with the proposed improvements (Reference 4-8). A total of 123 noise sensitive sites were identified as having the potential to be impacted by traffic-related noise. Of the 123 sites, 119 are located at multi-family residences (118 sites at Pierce 100 Condominiums and 1 site at a retirement facility west of Bay Avenue), and 4 sites are recreational (3 sites at the Bayfront tennis courts located east of the project and 1 site at Coachman Park).

The FHWA approved STAMINA Noise Model was used to predict existing and future Build/No-Build noise levels using the predicted design hour demand volumes or level-of-service "C" volumes, whichever are less.

The Noise Study Report contains a table which gives future No-Build and Build noise levels for all 123 noise sensitive sites. Future noise levels with the project are predicted to be below the Federal Highway Administration's Noise Abatement Criteria (NAC) at 121 of the 123 noise sensitive sites and just approach the NAC at 2 of the sites (at the Bayfront tennis courts). The results for specific sites are summarized below.

Pierce 100—Existing and future No-Build noise levels at the Pierce 100 Condominiums are predicted to range from 58 to 62 dBA. With the project, noise levels are predicted to range from 59 to 64 dBA, levels which are below the NAC threshold. Most of the units will experience noise level increases of 1 or 2 dBA; 5 units are expected to experience increases of 3 dBA. The increases in noise levels are a direct result of changes in the relative distance of the two bridges to each of the units and changes in the elevational relationship of both bridges to each unit.

Coachman Park—Existing and future No-Build levels at Coachman Park (at the "bandshell" [stage]) are predicted to be 65 dBA, just approaching the NAC. With the project, noise levels are expected to decrease to 61 dBA, a reduction of 4 dBA.

Bayfront Tennis Complex—Existing and future No-Build noise levels at the tennis courts south of Cleveland Street range from 65 to 70 dBA, levels both approaching and exceeding the NAC. With the project, these levels are expected to decrease to 63 to 65 dBA, a reduction of 2 to 6 dBA depending on the court location. Despite the expected reduction in noise levels, future noise levels with the new bridge are still expected to *approach* the NAC at 2 of the sites. The first site is expected to change from 70 dBA (existing and future No-Build) to 65 dBA (future Build). The second site is expected to change from 67 dBA (existing and future No-Build) to 65 dBA (future Build).

Noise Abatement Considerations—As required by the FHWA, noise abatement measures were considered for the 2 sites predicted to have noise levels approaching the NAC with the project. The measures considered for this project were traffic management, alternative bridge alignments, and the construction of noise barriers. Each of these is discussed in greater detail in the Noise Study Report.

- Although feasible, **traffic management measures** are not considered to be a reasonable noise mitigation measure for this project.

- Although feasible, **alternative alignments** would increase impacts unrelated to noise in the area surrounding the project. Therefore, this measure is considered to be unreasonable.

- **Noise barriers**—Noise levels at the Bayfront Tennis Complex are predicted to just approach the NAC (65 dBA). The results of the barrier analysis indicated that a barrier 3.65 m (12 ft) in height would not reduce noise levels at this site due to the width of the roadway and the alignment/elevation of the proposed bridge structure. Barriers of greater height are not recommended on bridge structures. Because a barrier of reasonable height would not provide even the minimum required reduction in noise levels (5 dBA), a barrier is not recommended to reduce noise levels at this location.

Based on the results of the evaluation, there appear to be no reasonable methods to reduce predicted noise levels for the 2 sites.

Temporary noise impacts during construction will be controlled by enforcement of the FDOT *Standard Specifications for Road and Bridge Construction.*

4.3.5 Wetlands

A variety of wetland communities are present within the proposed project area (Table 4-2). Wetland communities include estuarine intertidal unconsolidated shore, mangroves, intertidal sea grass and algae beds, subtidal sea grass beds, salt marsh, and subtidal unconsolidated bottom. A wetland location map is provided as Figure 4-5 (Reference 4-9).

TABLE 4-2
WETLAND CLASSIFICATION AND DESCRIPTION

Wetland ID	NWI Classification	Description
Wetland 1	E2US2 – Estuarine, Intertidal, Unconsolidated Shore, Sand	Sandy Shore
Wetland 2	E2AB1 – Estuarine, Intertidal, Aquatic Bed, Algal	Algal Bed
Wetland 3	E2AB3 – Estuarine, Intertidal, Aquatic Bed, Rooted Vascular	Shoal Sea Grass Bed
Wetland 4	E2FO3 – Estuarine, Intertidal, Forested, Broad Leaved Evergreen	Mangroves
Wetland 5	E1AB3 - Estuarine, Subtidal, Aquatic Bed, Rooted Vascular	Manatee and Turtle Sea Grass Bed
Wetland 6	E1UB2 – Estuarine, Subtidal, Unconsolidated Bottom Sand	Open Water with a Sand Bottom

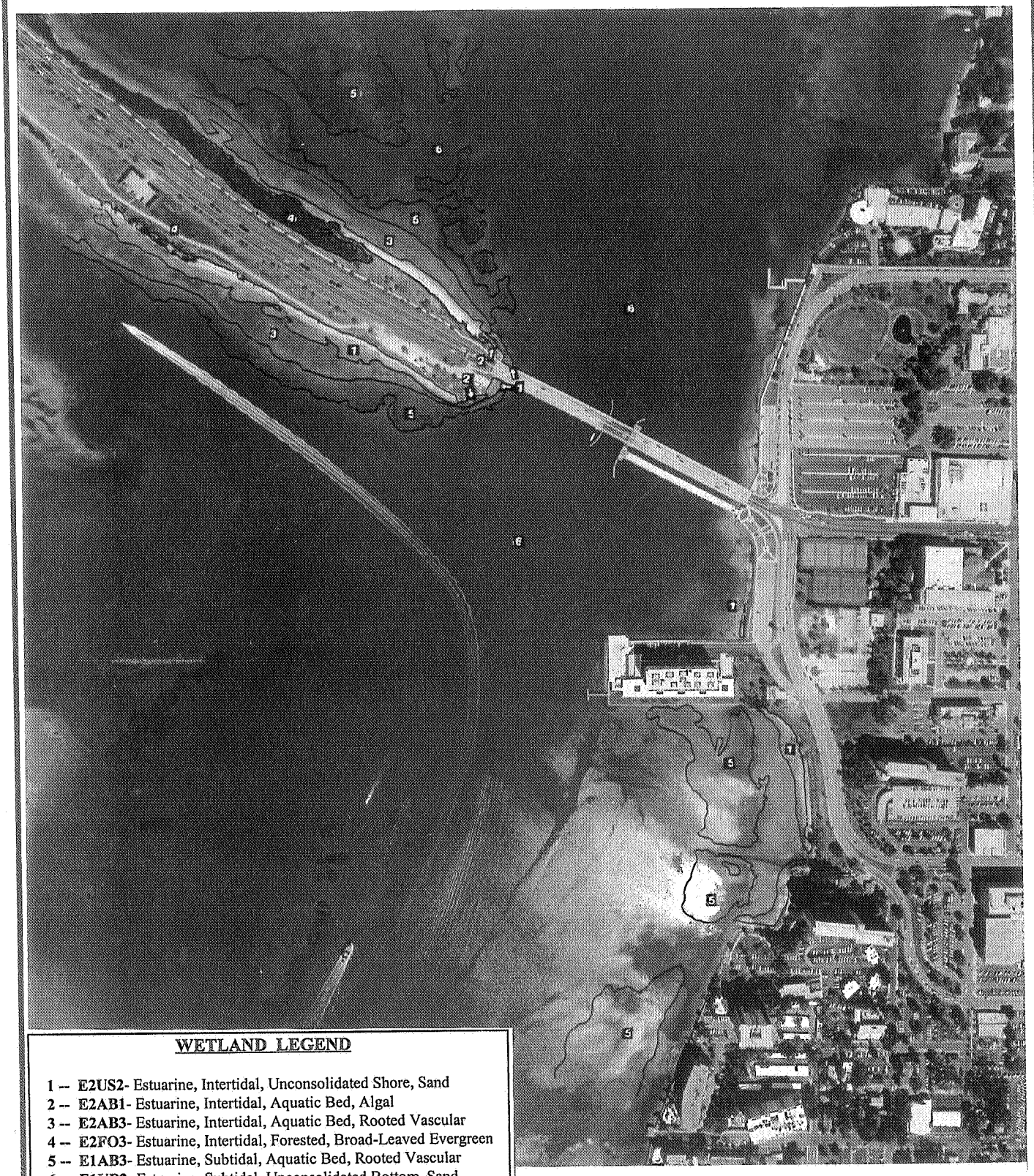
The sea grass beds (Wetlands 3 and 5) include three species of sea grass: shoal grass (*Halodule wrightii*), manatee grass (*Syringodium filiforme*) and turtle grass (*Thalassia testudinum*). Shoal grass beds exist within the intertidal zone (Wetland 3), adjacent to the northern and southern sides of the causeway shoreline. Manatee and turtle grass beds exist within the shallower portions of the subtidal zone, to a depth of approximately 1.8 m (6 ft) (Wetland 5). These turtle and manatee grass beds exist to the north and south of the causeway and to the south of the bridge, along the eastern shore.

Submerged and intertidal sea grass beds are considered high quality, providing various water quality and habitat functions. Collectively, the sea grass beds provide refuge, substrata, and/or sustenance for a variety of plants and animals. Various macro-algae species exist among the beds, both along the substrate and epiphytically on the leaves. Numerous fish species utilize these areas during larval, juvenile, and adult life stages. Crustaceans (shrimp, crabs), Echinoderms (urchins), Gastropods (whelk, conch), marine mammals (dolphins, manatee), sea turtles (green, loggerhead), various wading birds (herons, egrets), and numerous other organisms also utilize these sea grass beds.

Mangroves exist along the western portion of the project area (Wetland 4), primarily along the northern side of the causeway. The dominant species is black mangrove (*Avicennia germinans*) with scattered red mangroves (*Rhizophora mangle*) waterward of the black mangroves. This community provides cover for aquatic wildlife, and provides a critical link in the food chain through leaf fall, resulting in detritus for micro and macro invertebrates.

WET 2.0 Analysis

All wetlands affected by the project have been grouped and classified according to the United States Fish and Wildlife Services Classification of Wetlands and Deepwater Habitats. Sea grass beds and mangroves were evaluated using the Wetland Evaluation



WETLAND LEGEND

1 -- **E2US2**- Estuarine, Intertidal, Unconsolidated Shore, Sand
2 -- **E2AB1**- Estuarine, Intertidal, Aquatic Bed, Algal
3 -- **E2AB3**- Estuarine, Intertidal, Aquatic Bed, Rooted Vascular
4 -- **E2FO3**- Estuarine, Intertidal, Forested, Broad-Leaved Evergreen
5 -- **E1AB3**- Estuarine, Subtidal, Aquatic Bed, Rooted Vascular
6 -- **E1UB2**- Estuarine, Subtidal, Unconsolidated Bottom, Sand

Memorial Causeway (S.R. 60) Bridge PD&E Study	WETLAND LOCATION MAP	FIGURE 4-5

Technique (WET 2.0). Wetlands evaluated represent all of the habitats affected by the proposed project according to the similarity of vegetative composition and hydrologic regime. The WET 2.0 evaluation results in a qualitative probability rating of High, Moderate, or Low for each function and value rated. A Level I and Level II assessment was completed for Social Significance and Effectiveness and Opportunity. The Wetland Evaluation Report (Reference 4-8) contains the WET 2.0 summary sheets and site documentation forms, as well as assessment area figures.

Social significance addresses the value of a wetland to society due to its special features, designations, potential economic values and strategic location. Effectiveness addresses the capability of a wetland to perform a function due to its physical, chemical, and biological characteristics. Opportunity addresses the chance a wetland has to perform this function given the conditions in the area that allow or preclude such function occurring.

Results of WET 2.0 Evaluation

Parameters with functions and values common to the habitats evaluated are discussed below:

Groundwater Recharge and Discharge: All wetlands rated low for effectiveness for groundwater recharge and discharge and moderate for social significance. Low ratings can be attributed to the estuarine/tidal qualities of the wetlands.

Floodflow Alteration: Low effectiveness ratings were identified for the wetlands. This resulted from the fact that the wetlands are tidal and are a buffer against floodflows only if mild storm surges occur at low tide.

Sediment Stabilization: High and moderate ratings were identified for social significance. The sea grass beds rated low for effectiveness due to the fact that there is a lack of rubble and the wetlands do not contain a 20' wide area of erect vegetation to reduce wave and current energy. The forested wetland rated high for effectiveness because of the mangroves which provide a reduction in wave and current energy.

Sediment/Toxicant Retention: Wetlands were rated low for this parameter because the wetlands are exposed to boat wakes and there is an unconstricted outlet.

Nutrient Removal/Transformation: Low ratings were identified for effectiveness. This was due to the wetlands having low sediment trapping functions, greater flushing action, and organic sediments. This results in less capacity for retaining carbon in sufficient amounts for supporting nutrient removal.

Production Export: Wetlands were rated moderate for effectiveness. This was because the wetlands were estuarine but erect vegetation was not present in sufficient density to transfer nutrients from the sediment to the water column.

Wildlife Diversity/Abundance (D/A): All wetlands received a high rating in terms of social significance. This is because species may be present that are listed on the USFWS National Species of Special Emphasis List (West Indian Manatee and Sea turtles).

Wildlife D/A Breeding : The wetlands rated low for effectiveness because little erect vegetation is present. However sea grass beds provide spawning and nursery grounds for a variety of fish and invertebrates.

Wildlife D/A Migration and Wintering: Wetlands were rated low to moderate for this parameter. This was most likely due to the lack of vegetation available to migrating birds.

Aquatic D/A: Wetlands rated moderate for social significance and effectiveness for aquatic diversity and abundance. This is due to the large area of surface water, the lack of toxins, and the diversity of depths of the water.

Uniqueness/Heritage: Wetlands rated high for social significance because threatened and endangered species may be present in the waters (West Indian Manatee and Sea Turtles).

Recreation: Wetlands rated high for social significance because of the available boating activities in and around the wetlands.

Impact Assessment

Impacts to the wetlands were calculated using a 1:2000 scale aerial mapping overlain by the project alternative. Table 4-3 provides a summary of wetland impacts by alternative.

Alternatives P4A, P4A North, and P4A South have similar impacts to vegetated wetlands, with only slight variations. The total acres of impact range from 184 m2 (0.05 acres) for P4A South to 72 m2 (0.02 acres) for P4 NE. Wetland impacts expected as a result of the preliminary Preferred Alternative are approximately 127 m^2 (1365 ft^2) of algal bed and sandy shore, along the southern portion of the existing causeway. Of this total, 4.4 m^2 (47 ft^2) are mangroves.

TABLE 4-3
SUMMARY OF WETLAND IMPACTS BY ALTERNATIVE

Alternative	Impacts (m^2/ft^2) to Seagrass Beds*	Impacts (m^2/ft^2) to Mangroves**	Other impacts (m^2/ft^2)	Total (m^2/ft2)
P4A	None	4.4/47	127/1365	131/1412
P4A North	15/65	26/282	77/824	117/1271
P4A South	53/565	None	131/1412	184/1977
P4NE	7/71	7/71	58/622	72/735
C4WS***	49036/527833	6508/70056	92/988	55636/598877

All impacts estimated using a pier length of 4.4 meters and a pier width of 1.5 meters
*--Seagrass Beds refer to Wetland 3-E2AB3
**--Mangroves refer to Wetland 4-E2FO3
***-Alternative includes impacts to sea grass beds as a result of the relocation of the channel.

Mitigation Strategies

Impacts to wetlands are regulated by the Southwest Florida Water Management District, U.S. Army Corps of Engineers, and the U.S. Coast Guard. Copies of correspondence and coordination with these agencies are included in Appendix C. Permits and compensation of impacts will be required. The project will not completely avoid impacts to wetlands due to the predominance of wetland systems in the project area. However, avoidance and minimization of wetlands is of primary importance in the mitigation process and was a priority in the selection of the preferred alignment. The preliminary "Preferred Alternative" minimizes impacts to mangroves and sea grass beds. Planting of sea grasses has been shown to have marginal success and therefore will not be considered a viable mitigation option. One concept to be considered for impact compensation includes planting of salt marsh grasses along the mainland and causeway shorelines. This will provide habitat for fisheries as well as water quality enhancement. Another mitigation option to be considered for compensation is Senate Bill 1986 (SB 1986). This bill provides a mechanism for the Florida Department of Transportation (FDOT) to directly pay the Florida Department of Environmental Protection (FDEP) $75,000/acre of wetland impacts. FDEP then uses these funds for mitigation strategies to compensate for the wetland impacts incurred from the project.

4.3.6 Aquatic Preserves

This project is included in the Pinellas County Aquatic Preserve. After Coordination with the Southwest Florida Water Management District, it has been determined that the project will not have an impact on the Pinellas County Aquatic Preserve. All coastal waters within Pinellas County are designated Aquatic Preserves. As a result of this designation, *no* degradation of water quality is permitted, other than that allowed in Rule 62-4.242(2) and (3) F.A.C..

4.3.7 Water Quality and Waterways

The primary drainage feature in the vicinity of the project is Stevenson Creek. It outfalls into Clearwater Harbor approximately 2.4 km (1.5 mi) north of the Memorial Causeway Bridge. Water Quality in the creek is rated as "Good" (FDEP 305 (b) Report, 1994). Clearwater Harbor is a Class III water body.

Coordination was conducted with the Southwest Florida Water Management District (SWFWMD) on March 20, 1996 and April 30, 1997. SWFWMD staff indicated that since this was a bridge replacement project with no increase in laneage, treatment of stormwater leaving the bridge would not be required. However, stormwater conveyance systems will be required on the mainland and causeway portions of the proposed project.

The proposed stormwater facility design will include at a minimum, the water quality requirements for water quality impacts as required by the Florida Department of Environmental Protection (FDEP) in Rules 62-25, 62-40, and 62-312 F.A.C.. Therefore,

no further mitigation for water quality impacts will be needed. Additional information is included in the Water Quality Impact Evaluation (WQIE) Check List (Appendix D).

The existing and proposed bridges cross the Gulf Intracoastal waterway. The existing channel is 30.5 m (100 ft) in width and maintained by the U.S. Army Corps of Engineers. Water depths in the channel near the existing bridge range from about 2.9 m (9.6 ft) to 4.4 m (14 ft) at Mean Low Water. The existing vertical navigational clearance in the bridge's closed position is 7.6 m (25 ft). The proposed vertical navigational clearance with the new bridge is approximately 22.6 m (74 ft). No relocation of the navigational channel is proposed.

Long-term impacts of the proposed bridge replacement on navigation should be positive. A high-level, fixed-span bridge will allow boaters to travel along this portion of the Intracoastal Waterway freely, without delays due to bridge closings or bridge malfunctions.

Short term construction impacts will be limited to short, intermittent closures during the construction phase of the project. These closures are estimated to last approximately half an hour and will be widely advertised as required by the U.S. Coast Guard. Every effort will be made to keep these closures to a minimum.

A bridge permit will be required by the U.S. Coast Guard, as indicated by their response to the Advance Notification package for the project. Coordination has been completed with both the U.S. Coast Guard and the U.S. Army Corps of Engineers. USCG personnel have reviewed project information, visited the site, and attended public meetings regarding the project.

4.3.8 Outstanding Florida Waters

Clearwater Harbor is an Outstanding Florida Water as defined in 62-302.700 (h) F.A.C. under the designation of Waters within State Aquatic Preserves. As a result of this designation, *no* degradation of water quality is permitted, other than that allowed in Rule 62-4.242(2) and (3) F.A.C.. As discussed in the previous section (Water Quality), the FDEP Rules 62-25, 62-40, and 62-312 F.A.C. are applicable to this water body. SWFWMD regulatory staff have indicated that treatment of bridge stormwater runoff will not be required since pollutant loadings into the harbor are not expected to increase as a result of the project.

4.3.9 Contamination

The *Contamination Evaluation Report* (Reference 4-10) identified a total of three (3) sites that have potential involvement with hazardous wastes/materials or petroleum contamination. All three of these sites are located on Chestnut Street immediately east of the construction area of the Preferred Alternative.

The sites include two gas stations which are currently operating, including Gruver's Chevron Gas Station (415 South Ft. Harrison Avenue) and Pick Kwik Food Store #124 (441 Chestnut Street). Both of these sites have contamination and are in the State's Early Detection Incentive (EDI) Program. The third site is the Pinellas County Courthouse Annex. The Courthouse Annex has reported contamination, resulting from two underground storage tanks, to the Florida Department of Environmental Protection and has submitted a contamination assessment report to that agency. Figure 4-6 shows the location of the three sites.

A risk rating of "high" was assigned to each site based on a field inspection and evaluation of agency records. Each of the active gas station sites have documented evidence of existing soil and/or groundwater contamination. However, there has been no actual remediation to date. The Pinellas County Courthouse Annex warrants further soil and groundwater investigation by FDOT prior to utility placement or construction activities. Additional information is available in the Contamination Evaluation Report prepared for this project.

The State of Florida has evaluated the proposed right-of-way and has identified potentially contaminated sites for the various proposed alternatives. Results of this evaluation were utilized in the selection of a preferred alternative. When a specific alternative is selected for implementation, a site assessment will be performed to the degree necessary to determine levels of contamination and if necessary, evaluate the options to remediate along with the associated costs. Resolution of problems associated with contamination will be coordinated with appropriate regulatory agencies and , prior to right-of-way acquisition, appropriate action will be taken, where applicable.

4.3.10 Floodplains

A *Location Hydraulic Report* was completed for the proposed project (Reference 4-11). The following statements summarize the findings of the report. Floodplains are illustrated in Figure 4-7.

1. No impacts to drainage areas are anticipated to occur with any of the Memorial Causeway Bridge replacement alternatives. Flows through the bridge crossing are a result of tidal fluctuation and flushing of the coastal harbor, and are not subject to backwater conditions. Landward alignment alternatives for the new bridge will not block existing drainage patterns due to the new bridge spanning over areas subject to storm water surface runoff and conveyance. Any proposed bridge storm water collector system connections to existing storm water pipe systems will be evaluated and sized to minimize any additional backwater conditions. In reference to areas of potential flooding, the FEMA Flood Insurance Study for the City of Clearwater identifies the flooding source as the Gulf of Mexico which tidally circulates harbor flows both upstream and downstream of the bridge crossing. Consequently, the bridge crossing hydraulic effects on areas of potential flooding are considered to be negligible.

2. The existing bascule bridge was built in 1963, making it 34 years old in 1997. The bridge has proved adequate to handle the water flows associated with the harbor while requiring only routine maintenance of the structure. The bridge was inspected on June 30, 1996 and although it was rated as functionally obsolete, the bridge's channel and channel protection, and scour assessment were given a rating of 7 and 6 respectively, or "good" and "satisfactory condition". The proposed bridge will maintain as a minimum the pre-existing harbor crossing width.

3. The frequency of traffic interruption due to flooding is controlled primarily by the elevation of the existing causeway beyond the limits of the existing or proposed bridge. Table 3 of the FEMA flood study outlines still water flood stages for 10 year through 500 year reoccurrence storms. It is noted that the existing causeway (west bridge approach) elevation 2.44m (8.0 NGVD) would be over topped by the 50 year still water flood stage 2.71 m (8.9 NGVD). In addition, based on these FEMA flood stages, similar flood conditions would occur at the mainland approach of the existing bridge. It is noted that the proposed bridge includes a mainland approach above the floodplain, thereby reducing facility flooding to the extent practicable. Since the existing causeway and barrier island destinations are below the base floodplain elevation, improvement of these flood conditions are beyond the scope of this bridge replacement project.

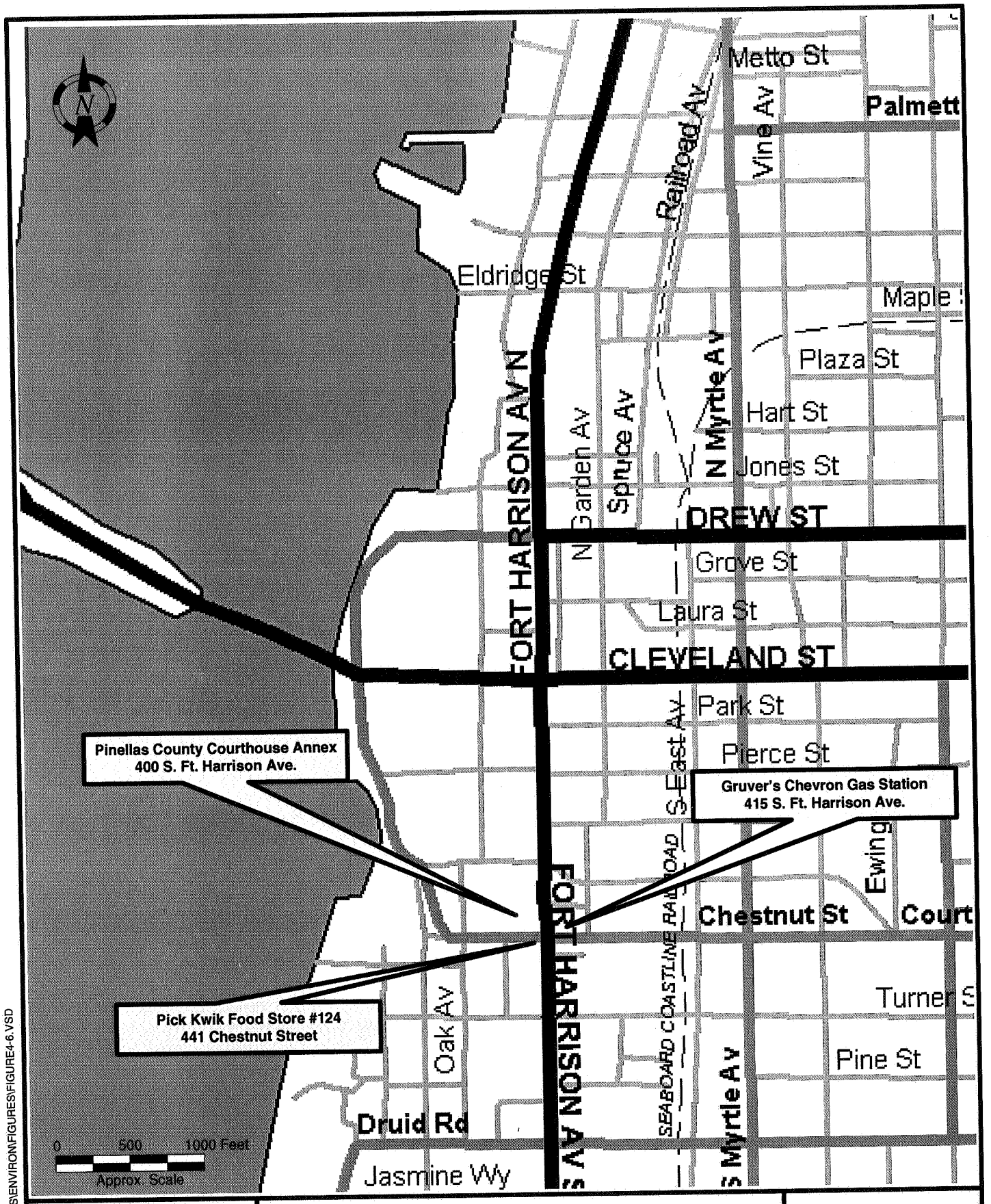
4. All proposed bridge alignment alternatives will maintain as a minimum the pre-existing harbor crossing width. The existing bascule bridge has proven to provide adequate hydraulic performance . Due to the tidal nature of the harbor crossing bridge hydraulics, no significant change in discharge capacity, backwater or surface water elevation is likely to occur as a result of the proposed bridge project.

5. The proposed bridge replacement improvements are perceived to not cause any flood water related impacts on emergency services or evacuation by virtue of increased vertical clearance and mainland spanning of the base floodplain.

6. This project is located in a Tidal Influenced area which has a storm surge associated with the 100 Year Flood within harbor waters of the Gulf of Mexico. Therefore, there is very little likelihood of flood risk or overtopping as a result of the proposed bridge project.

7. Quantifying encroachment for floodplain compensation is not required since this project is located in a tidal storm surge Floodplain. However, the bridge approaches associated with the proposed project are anticipated to generate on the average no more than 1.0 hectare (2.5 acres) of embankment fill area. Most of this fill quantity would be situated on the mainland bluff areas and out of the "still water" base flood elevation 3.17 m (10.4 NGVD).

8. There are no transverse or longitudinal floodplain encroachments.



W:\MEMCSWAY\REPORTS\ENVIRON\FIGURES\FIGURE4-6.VSD

Memorial Causeway (S.R. 60) Bridge PD&E Study	CONTAMINATED SITES LOCATION MAP	FIGURE 4-6

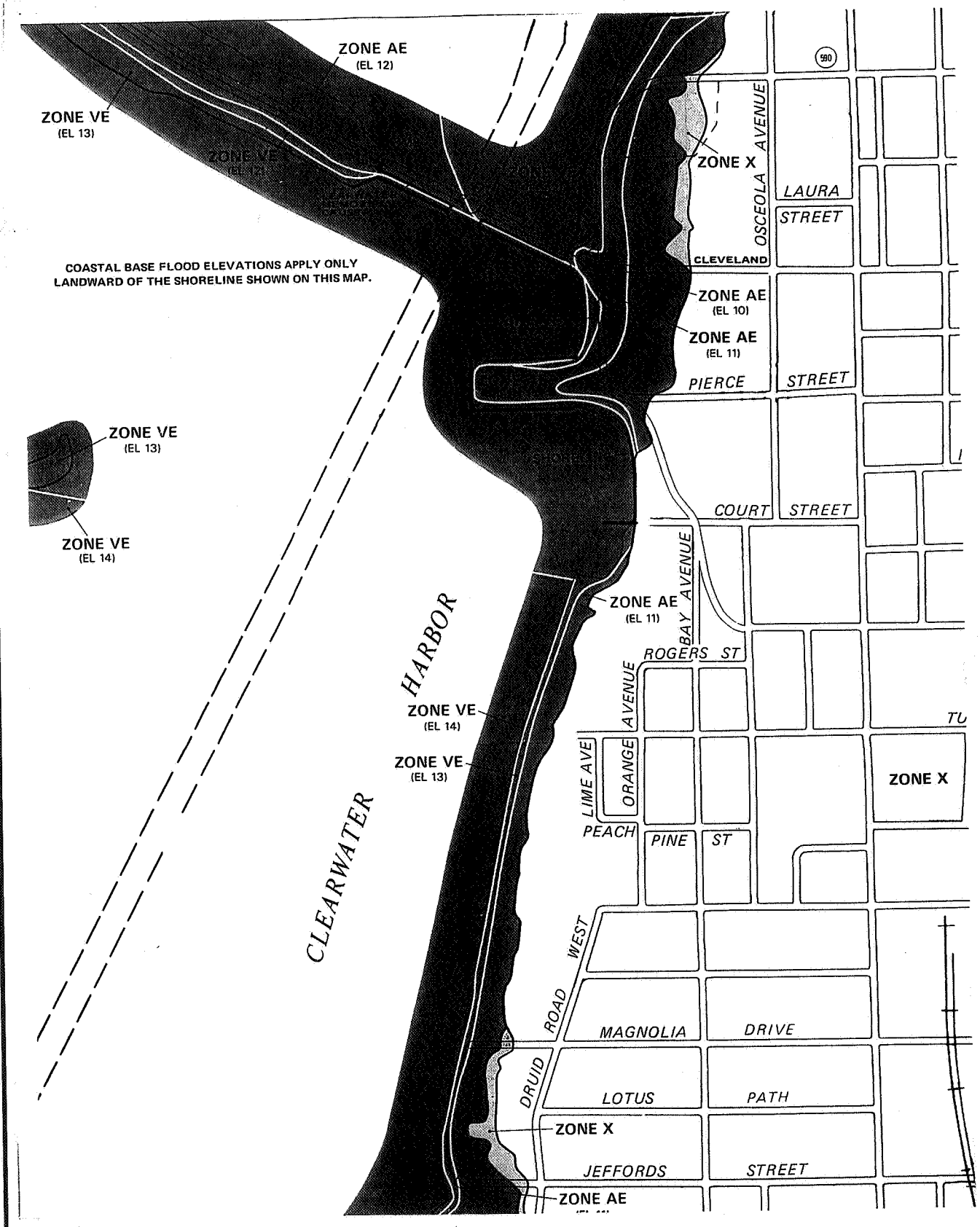


figure 4-7.vsd

Memorial Causeway (S.R. 60) Bridge PD&E Study	**FLOOD INSURANCE RATES MAP FOR THE PROJECT AREA**	**FIGURE 4-7**

9. No known impacts to any regulated floodways would occur as a result of the proposed bridge replacement project.

10. The known floodplain category within the limits of the proposed bridge is the 100 year flood storm surge elevation defined by FEMA as zone VE, 3.96 m (13.0 NGVD). In addition, the FEMA flood study identifies the 100 year still water base flood stage at elevation 3.17 m (10.4 NGVD).

11. Proposed bridge drainage measures were outlined as being in compliance with the water management district during the project's pre-application meeting. The proposed drainage measures include waterward bridge drainage scuppers and landward bridge deck storm water collector drains and pipe systems. In addition, bridge deck drainage systems at the causeway approach will discharge into spreader swales situated along the causeway roadsides providing attenuated broadflow discharge to Clearwater Harbor. The bridge deck drainage systems at the mainland approach will discharge into existing or improved storm water pipe systems discharging to scour abatement dissipater pools proposed at the pipe outfalls along the Clearwater Harbor waterfront. The Memorial Causeway Bridge replacement project is consistent with the City of Clearwater's Downtown Redevelopment plan and the MPO's Long Range Transportation Plan.

12. Based on the fact that both the island communities and downtown Clearwater are already developed within their base floodplain areas, the proposed Memorial Causeway Bridge replacement is not considered to be a catalyst for encouraging further development. However, the proposed project is integral to the City's plans for redevelopment of downtown Clearwater and the expansion of Coachman park.

13. Since this project is not within any regulated floodways, no coordination with FEMA regarding this issue is required. The disposition of this project's exemption from encroachment compensation in a tidal surge floodplain was addressed during the pre-application meeting with the Southwest Florida Water Management District.

14. Based on determinations outlined in the above engineering information, the flood risk associated with the Memorial Causeway Bridge replacement alternatives is considered to be of *insignificant* impact to floodplain issues involving risks to highway users, facility interruption, properties and development, and beneficial floodplain values.

Therefore, since the proposed bridge replacement would basically maintain the existing waterway crossing corridor (to the extent allowable due to traffic control use of the existing bridge during new bridge construction), and no previous history of drainage problems are evident, the Memorial Causeway Bridge replacement project is considered to be a Floodplain Evaluation Category 4.

The proposed structure will perform hydraulically in a manner equal to or greater than the existing structure, and backwater surface elevations are not expected to increase. As a result, there will be no significant adverse impacts on natural and beneficial floodplain values. There will be no significant change in flood risk, and there will not be a significant change in the potential for interruption or termination of emergency service or emergency evacuation routes. Therefore, it has been determined that this encroachment is not significant.

4.3.11 Coastal Zone Consistency

The Office of Planning and Budget, Office of the Governor has determined that this project is consistent with the Florida Coastal Zone Management Plan (Exhibit 1, Appendix E).

4.3.12 Wildlife and Habitat

Natural areas within the project limits are predominantly wetlands. Upland habitat is limited to the causeway and consists of turf grass areas bordered by evergreen shrubs along the causeway shoreline. Common shrub species include southern bay berry (*Myrica cerifera*), groundsel tree (*Baccharis halimifolia*), and Brazilian pepper (*Schinus terebinthifolius*).
Wetland communities include estuarine intertidal unconsolidated shore, mangroves, intertidal sea grass and algae beds, subtidal sea grass beds, and subtidal unconsolidated bottom. These communities can be found in several "settings", including the causeway edges, shallow and deepwater areas throughout the harbor, and on spoil islands. Spoil islands are the result of the deposition of sediments dredged from the harbor during channel construction and maintenance. Over time these islands have eroded, become vegetated, and now provide habitat for a variety of wildlife. The nearest such island (Spoil Island No. 25) is located approximately 365m (1,200 ft) south of the causeway. This island has historically suffered from erosion on the southern side and breakwaters have been constructed to protect the island and the flora and fauna now occupying the site. This island functions as a stop over area and nesting location for a variety of coastal birds.

Impacts to wildlife are directly related to impacts to habitats required for reproduction, feeding, and resting. The primary habitats within the project area include sea grass beds, mangroves, saltmarsh, and beach. Table 4-3 provides a summary of wetland impacts by alternative. With the exception to alternative C4WS, direct impacts to sea grass beds are associated with bridge pier placement. Significant shading effects are not anticipated as the distance to the lowest bridge member will be approximately 7.6 to 14.0 m (25 to 46 ft) above the waters surface near the causeway and approximately 9.8 m (32 ft) on the eastern shore depending on the alternative. Impacts associated with these alternatives are not likely to adversely affect habitat critical for support of threatened or endangered species. Alternative C4WS will cause significant damage to sea grasses and mangroves within Clearwater Harbor.

As discussed above, the preliminary Preferred Alternative will predominately impact algal bed and the sandy shore along the Memorial Causeway and will have no adverse effect on habitat critical for the support of threatened or endangered species. In addition, Spoil Island No. 25 will not be affected by the preliminary Preferred Alternative.

Threatened and Endangered Species

The study area encompasses an area within 1.6 km (1 mi) of the existing Memorial Causeway Bridge. The area surrounding the bridge consists of the open water of Clearwater Harbor, beaches, and commercial and residential buildings.

A preliminary list of threatened and endangered species potentially occurring within Pinellas County was obtained from Florida Natural Areas Inventory (FNAI). The list included 15 plant species and 55 wildlife species. However, there were only 3 "Element Occurrence Records" within the study area. This included the manatee (*Trichechus manatus*), hairy beach sunflower (*Helianthus debilis* ssp. *vestitus*), and the beach dune (a "natural community"). Florida Game and Fresh Water Fish Commission (FGFWFC) correspondence listed several species either documented, or with a high probability to occur, in the project area. These species include: the West Indian manatee, loggerhead sea turtle, Least tern, Brown pelican, Snowy egret, Reddish egret, Little blue heron, Tricolored heron, White ibis, and the common snook. There are also 5 species of birds, as documented by the FGFWFC, that are nesting on Spoil Island No. 25, a protected rookery (#615131--Florida Atlas of Breeding Sites for Herons and Their Allies, Nongame Wildlife Program Technical Report No. 10) that is described above. These birds include Great egret, Snowy egret, Great blue heron, Black-crowned night heron, and the Reddish egret. Piping plover may also occur near the study area. FGFWFC also references a small second island located west and south of the causeway but does not elaborate on species present (Reference 4-12).

Correspondence from the National Audubon Society documented several nesting pairs of birds that were absent from the FNAI list and the FGFWFC list that are present on island # 615131 (Spoil Island No. 25). These species include Brown pelican, Double-crested cormorant, Little blue heron, Tricolored heron, Green heron, and the American oystercatcher. Colonial Waterbird Monitoring for 1996 as conducted by the Florida Audubon Society documented 535 nesting pairs of 11 species of birds located on the island.

In addition to the "Element Occurrence Records", FGFWFC correspondence, and National Audubon Society correspondence, species listed in "Rare and Endangered Biota of Florida" were also evaluated for possible occurrence within the project area. These evaluations included consideration of the known species ranges and habitat requirements, site reviews, and literature reviews.

The review of "Rare and Endangered Biota of Florida", the FNAI list, and FGFWFC correspondence indicated that one plant species and several wildlife species may be located within 2.4 km (1.5 mi) of the project study area. The remainder of the species are located outside of the project corridor.

Potential Listed Species

To determine potential impacts to wildlife resources, all listed species that potentially occur within the project area were identified. Table 4-4 presents a list of protected species potentially occurring within the project area.

The wading bird rookery (Spoil Island 25/GFC #615131) should be protected from construction-related activities, including potential navigation channel realignment. Alternative P4A, the Preferred Alternative, avoids impacts to the rookery island.

Impacts to wildlife are directly related to impacts to the habitats required for reproduction, feeding, and resting. The previous sections identified and described the existing habitats, their functions and values, and habitat requirements for potentially occurring state and federally listed species. Impacts to upland habitats are negligible and confined to the possible removal of individual southern bay berry or groundsel shrubs.

None of the areas affected by P4A North, P4A South, P4NE, or P4A (the preliminary Preferred Alternative) represent colonial bird nesting sites or support vegetative associations not found elsewhere in the Harbor. Impacts associated with these alternatives are not likely to adversely affect threatened or endangered species or habitat critical for the support of those species. Alternative C4WS Alternative C4WS will cause significant damage to sea grasses and mangroves within Clearwater Harbor; and therefore, will have impact habitat critical to these species.

This project has been evaluated for impacts on threatened and endangered species. A literature review was conducted to determine those possible threatened or endangered species which may inhabit the project area. This search resulted in findings that no listed species would be affected by the proposed action. This determination was made after review of the advance notification responses and field survey of the project area by a biologist. Furthermore, the potential for impacts to critical habitat was assessed as the relationship of the project to the Fish and Wildlife's designated "Critical Habitat".

Coordination on behalf of the FHWA, with United States Fish and Wildlife Service, has resulted in the Service's concurrence that no Federally listed endangered or threatened species or critical habitat will be adversely affected by the proposed project (Exhibit 2, Appendix E).

TABLE 4-4
POTENTIAL THREATENED, ENDANGERED, & PROTECTED SPECIES IN THE PROJECT AREA

Species	Status*		Documented (Y/N)
Amphibians and Reptiles	**State**	**Federal**	
Atlantic green turtle *(Chelonia mydas*	SE	FE	N
Atlantic ridley *(Lepidochelys kempii)*	SE	FE	N
Loggerhead sea turtle *(Caretta caretta)*	ST	FT	N
Leatherback turtle *(Dermochelys coriacea)*	SE	FE	N
Atlantic hawksbill turtle *(Eretmochelys imbricata imbricata)*	SE	FE	N
Birds	**State**	**Federal**	
Reddish egret *(Egretta rufescens)*	Rare	FC	Y
Snowy egret *(Egretta thula)*	SSC	---	Y
Least tern *(Sterna antillarum)*	ST	---	N
Brown pelican *(Pelecanus occidentalis)*	SSC	---	Y
Little blue heron *(Egretta caerulea)*	SSC	---	Y
Tricolored heron *(Egretta tricolor)*	SSC	---	Y
White ibis *(Eudocimus albus)*	SSC	---	Y
Great egret *(Casmerodius albus)*	SSC	---	Y
Black-crowned night heron *(Nycticorax nycticorax)*	SSC	---	Y
Piping plover *(Charadrius melodus)*	ST	FT	N
Mammals	**State**	**Federal**	
Manatee *(Trichechus manatus latirostris)*	SE	FE	Y
Fish	**State**	**Federal**	
Atlantic sturgeon *(Acipenser oxyrhynchus)*	SSC	---	N
Common snook *(Centropomus undecimalis)*	SSC	---	N
Plants	**State**	**Federal**	
Hairy beach sunflower *(Helianthis debilis ssp. vestitus)*	---	FC	Y

* FE: Federally Endangered, FT: Federally Threatened, FC: Federal Candidate Species, ST: Threatened in Florida, SE: Endangered in Florida, SSC: Species of Special Concern in Florida

Precautions, safety guidelines, and Best Management Practices will be implemented during construction of the new bridge to protect manatees and sea turtles. A continuous Manatee and Sea Turtle Watch Program (MWP) will be established to minimize the potential impacts of bridge construction on manatees and sea turtles. The conditions which shall constitute the MWP are provided in Appendix E, Exhibit 3 and have received concurrence with USFWS.

4.3.13 Farmlands

Through coordination with the Soil Conservation Service, it has been determined that the project area does not meet the definition of "farmland" as defined in 7 CFR Part 658. Therefore, the provisions of the Farmland Protection Act of 1984 do not apply to this project .

4.3.14 Construction

Construction activities for the proposed SR 60 (Memorial Causeway) bridge project will have air, noise, water quality, traffic flow, and visual impacts for those residents and travelers within the immediate vicinity of the project. A concecptual staging and maintenance of traffic (MOT) plan is provided in the Preliminary Engineering Report (Reference 4-13).

The air quality impact will be temporary and will primarily be in the form of emissions from diesel-powered construction equipment and dust from embankment. Air pollution associated with the creation of airborne particles will be effectively controlled through the use of watering or the application of the calcium chloride in accordance with FDOT's "Standard Specifications for Road and Bridge Construction" as directed by the FDOT Project Engineer.

Noise and vibration impacts will be from the heavy equipment movement and construction activities such as pile driving or shaft drilling, and vibratorty compaction of embankments. Noise control measures will include those contained in FDOT's "Standard Specifications for Road and Bridge Construction".

Water quality impacts resulting from erosion and sedimentation will be controlled in accordance with FDOT's "Standard Specifications for Road and Bridge Construction" and through the use of Best Management Practices.

Maintenance of traffic and sequence of construction will be planned and scheduled so as to minimize traffic delays throughout the project. Signs will be used as appropriate to provide notice of road and bridge closures. The local news media will be notified in advance of construction-related activities which could inconvenience the community so that motorists, residents, and business persons can plan travel routes in advance.

A sign providing the name, address, and telephone of a Department contact person will be displayed on-site to assist the public in obtaining immediate answers to questions and logging complaints about project activity.

Access to all businesses and residences will be maintained to the extent practical through controlled construction scheduling. In the SR 60 (Memorial Causeway) bridge area along Court and Chestnut Streets, Pierce Boulevard and Cleveland Street, present traffic congestion may become worse during stages of construction where narrow lanes may be necessary. Traffic delays will be controlled to the extent possible where many construction operations are in progress at the same time. The contractor will be required to maintain one lane of traffic in each direction at all times and to comply with the Best Management Practices of FDOT.

For the residents living along the project area, some of the materials stored for the project may be displeasing visually; however, this is a temporary condition and should pose no substantial problem in the short term.

Construction of the roadway and bridges requires excavation of unsuitable material (muck), placement of embankments, and use of materials, such as limerock, asphaltic concrete, and portland cement concrete. Demucking is anticipated at most of the wetland sites and will be controlled by Section 120 of the FDOT Standard Specification. Disposal will be on-site in detention areas or off-site. The removal of structures and debris will be in accordance with local and State regulation agencies permitting this operation. The contractor is responsible for his methods of controlling pollution on haul roads, in borrow pits, other materials pits, and areas used for disposal of waste materials from the project. Temporary erosion control features as specified in the FDOT's Standard Specifications, Section 104, will consist of temporary grassing, sodding, mulching, sandbagging, slope drains, sediment basins, sediment checks, artificial coverings, and berms.

4.4 References

Reference 4-1 – An Economic Impact Analysis of the Proposed Memorial Causeway Bridge Replacement on the Central Business District of Clearwater, Florida. Prepared by Center for Urban Transportation Research, November 1996.

Reference 4-2 - Conceptual Stage Relocation Plan. Prepared for the City of Clearwater for the Memorial Causeway Bridge PD&E Study. Prepared by Gulf Coast Property Acquisition, Inc., June 1997.

Reference 4-3 - Clearwater Harbor Directional Drill Force Main and Gas Main Installation Plans. Prepared for the City of Clearwater by CD&M, July 1995

Reference 4-4 - A Cultural Resource Assessment Survey. Prepared for the City of Clearwater for the Memorial Causeway Bridge PD&E Study. HDR Engineering, Inc. April 1997.

Reference 4-5 - Section 106 Consultation Case Study Report and Supporting Documentation for the SR 60 (Memorial Causeway) Bridge PD&E Study. Final Draft, January 9, 1998. Prepared by HDR Engineering, Inc.

Reference 4-6 - Visual Impacts Analysis. Prepared by Fred Gostemoella & Associates, August 1997.

Reference 4-7 - Air Quality Report. Prepared for the City of Clearwater for the SR 60 (Memorial Causeway) Bridge PD&E Study. Prepared by HDR Engineering, Inc., July 1997.

Reference 4-8 - Noise Study Report. Prepared for the City of Clearwater for the SR 60 (Memorial Causeway) Bridge PD&E Study. Prepared by Transportation Solutions, Inc., and HDR Engineering, Inc., February 1998.

Reference 4-9 - Wetland Evaluation Report. Prepared for the City of Clearwater for the SR 60 (Memorial Causeway) Bridge PD&E Study. Prepared by HDR Engineering, Inc., April 1997.

Reference 4-10 -Contamination Evaluation Report. Prepared for the City of Clearwater for the SR 60 (Memorial Causeway) Bridge PD&E Study. Prepared by HDR Engineering, Inc., March 1996.

Reference 4-11 – Location Hydraulic Report. Prepared for the City of Clearwater for the SR 60 (Memorial Causeway) Bridge PD&E Study. Prepared by HDR Engineering, Inc., 1996.

Reference 4-12 -Wildlife and Habitat Report. Prepared for the City of Clearwater for the SR 60 (Memorial Causeway) Bridge PD&E Study. Prepared by HDR Engineering, Inc., April 1997.

Reference 4-13 – S.R. 60 (Memorial Causeway) Bridge Draft Preliminary Engineering Report. Prepared for the City of Clearwater in cooperation with FDOT by HDR Engineering Inc., March 1998.

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5.0 COMMENTS AND COORDINATION

A Public Involvement Program is being carried out as an integral part of this project. The purpose of this program is to establish and maintain communication with the public-at-large and individuals and agencies concerned with the project and its potential impacts. To ensure open communication and agency and public input, the City of Clearwater, together with the Department, provided an early notification package to state and federal agencies and other interested parties defining the project and, in cursory terms, describing anticipated issues and impacts. This section of the document details the program to fully identify, address, and resolve all project-related issues identified through the public involvement program. Section 5.1 describes the Advance Notification Process and Sections 5.2 and 5.3 describe the results of interagency and community coordination.

5.1 Advance Notification Process: Comments and Responses

The City of Clearwater, in cooperation with the Florida Department of Transportation, informed federal, state and local agencies of the existence of this project and its scope through the Advance Notification Process. The City initiated early project coordination on March 22, 1996 by distribution of the Advance Notification package to the Florida State Clearing House in the Department of Community Affairs. Individual packages were also sent to local and federal agencies by the City. The Advance Notification package is included in Appendix F. The following agencies received an Advance Notification package. An asterisk (*) indicates those agencies that responded to the package.

FEDERAL

- Federal Highway Administration, Division Administrator (MS 29)
- Federal Emergency Management Agency - Natural Hazards Branch, Chief
- Federal Railroad Administration - Office of Economic Analysis, Director
- U.S. Department of the Interior - Bureau of Land Management, Eastern States Office
- U.S. Department of Housing and Urban Development, Regional Environmental Officer
- U.S. Department of Interior - U.S. Geological Survey, Chief
- U.S. Environmental Protection Agency - Region IV, Regional Administrator
- U.S. Department of Interior - Fish and Wildlife Service, Field Supervisor
- U.S. Army Corps of Engineers - Regulatory Branch, District Engineer
- U.S. Department of Commerce - National Marine Fisheries - Habitat Conservation Division *
- U.S. Department of Interior - National Park Service - Southeast Regional Office
- U.S. Department of Commerce - National Oceanic and Atmospheric Administration
- U.S. Department of Health and Human Services - Center for Environmental Health and Injury Control

- U.S. Department of Interior - Bureau of Indian Affairs - Office of Trust Responsibilities
- U.S. Coast Guard - Commander (oan) - Seventh District *

STATE

- Florida Department of Environmental Protection *
- Florida Department of State - Division of Historical Resources *
- Florida Department of Agriculture - Division of Forestry *
- Florida Department of Commerce - Division of Economic Development *
- Office of Planning and Budgeting - Environmental Policy Unit *
- Florida Game and Fresh Water Fish Commission *

REGIONAL

- Southwest Florida Water Management District *
- Tampa Bay Regional Planning Council

LOCAL

- Local Government Officials

Stated below are the pertinent comments from the agencies which responded to the Advance Notification. The agency letters are included in Appendix F.

Florida Department of Environmental Protection
(Exhibit 1)

Comment #1: "Significant realignment of the bridge could potentially cause negative impacts to sea grass beds and hard bottom communities. The bridge design adopted should incorporate a construction methodology which minimizes construction impacts on sea grass and other sensitive bottom communities. Every effort should be made to minimize wetland impacts by emphasizing avoidance oriented corridor alignments and avoidance or minimization of fill placement within the Aquatic Preserve."

Response: The preferred alignment is the least environmentally damaging build alternative. This alternative minimizes wetland impacts. Construction impacts will be minimized through the application of Best Management Practices.

Comment #2: "In the event the existing bascule bridge is replaced by a high fixed bridge, the new bridge would span a greater distance. The section of the causeway under the bridge span would be unused. Two options could be considered for the unused excess property: 1) the unused section of the causeway could be removed to allow greater tidal flushing in Clearwater Harbor, or 2) a passive park. Hydrographic studies should be

conducted to determine what effect removing part of the causeway would have on the system."

Response: The portion of the causeway under the proposed high-level, fixed span bridge is not proposed to be removed. Considerations are being given to this area's future use, including a passive park area.

Comment #3: "The proposed project may be a concern for the endangered West Indian manatee. Protective measures should be taken (at a minimum, the standard manatee construction conditions) during demolition and construction. If the project is located near an important manatee aggregation or foraging area, the time frame for the demolition/construction should be considered."

Response: The contractor and subcontractor shall ensure that care is taken to conduct all construction 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 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 which would jeopardize the well-being of these species. To minimize the potential impacts of bridge demolition and construction on manatees and sea turtles, a continuous Manatee and Sea Turtle Watch Program will be established as discussed in the *Wildlife and Habitat Report* for this project.

Comment #4: "In the event Alternative P4 is chosen, the available navigational width underneath the bridge would allow for the safe passage of both manatees and boaters."

Response: No response required.

Comment #5: "From the information provided, it appears that the proposed project will require a Submerged Lands Environmental Resource Permit."

Response: No response required

Florida Game and Fresh Water Fish Commission
(Exhibit 2)

Comment #1: "Listed species either documented, or with a high probability to occur, in the project area include endangered species (E), threatened species (T), or species of special concern (SSC) - West Indian manatee (E), loggerhead sea turtle (T), least tern (T), brown pelican (SSC), snowy egret (SSC), reddish egret (SSC), little blue heron (SSC), tricolored heron (SSC), white ibis (SSC), and common snook (SSC). Areas of particular interest to listed wildlife include the causeway shoreline (foraging areas for shore and wading birds), and two islands located west and south of the roadway."

Response: The preferred alignment is the least environmentally damaging build alternative. Shoreline habitat and the two spoil islands are effectively avoided.

Comment #2: "The largest island is wading bird rookery #615131, utilized by great egret, snowy egret, great blue heron, black-crowned night heron, and reddish egret. We recommend that the wading bird rookery should be protected from construction related activities, including potential navigation channel realignment. The proposed bridge design and alignment should be established to avoid impacts to the rookery island."

Response: The preferred alternative does not directly impact this rookery island and indirect or secondary impacts are not expected. As indicated in the *Wildlife and Habitat Report* completed for this study, none of the areas affected by the project represent colonial bird nesting sites or support vegetative associations not found elsewhere in the harbor.

Comment #3: "If an extended fixed-span bridge of greater length is proposed, portions of the existing causeway should be removed. In any case, we recommend that the construction of flow channels through the existing causeway should be examined to assess the potential for improvement of hydraulic conditions and water quality in Clearwater Harbor."

Response: The portion of the causeway under the proposed high-level, fixed span bridge is not proposed to be removed. The construction of flow channels throughout the existing causeway would likely impact sensitive intertidal and subtidal seagrass bed. For this reason, hydrologic improvements of this nature were not considered.

Comment #4: "The wetland mitigation and stormwater management proposals associated with the project should not negatively impact the habitat of listed wildlife species."

Response: Comment acknowledged

Comment #5: "Any potential channel realignment should not impact sea grass beds and mangrove systems, and should not negatively impact the habitat of listed wildlife species."

Response: Channel realignment is not required for the preferred alternative.

Southwest Florida Water Management District
(Exhibit 3)

Comment #1: "The Southwest Florida Water Management District had determined that the referenced project is generally consistent with the District's activities. However, the District is interested in coordinating with the applicant on wetland impacts and mitigation projects associated with Tampa Bay. Our interest in these activities stems from ongoing local programs (SWIM, NEP) to improve Tampa Bay's water quality."

Response: Coordination will be continued as the project moves forward.

Florida Department of State
Division of Historical Resources
(Exhibit 4)

Comment #1: "Therefore, conditioned upon the FDOT undertaking a cultural resource survey, and appropriately avoiding, minimizing, or mitigating project impacts to any identified significant archaeological or historic sites, the proposed project will have no effect on any sites listed. If these conditions are met the project will also be consistent with the historic preservation aspects of Florida's Coastal Management Program."

Response: A cultural resources survey of the corridor was completed as part of the PD&E study. The results of this survey were coordinated through the State Historic Preservation Officer. This area is addressed in Section 4.2 of this report.

Florida Department of Agriculture
Division of Forestry
(Exhibit 5)

Comment #1: Indicated that the document had been reviewed and that there was no comment.

Response: No response required.

Florida Department of Commerce
Division of Economic Development
(Exhibit 6)

Comment #1: "The existing bridge is functionally obsolete and the replacement (1.6 miles in length) will enhance traffic safety in that area as well as benefit tourism and economic development."

Response: No response required.

Comment #2: "Based on those portions of the Coastal Zone Management Act of 1972 and the Florida Coastal Management Program for which the Department of Commerce has responsibility, we believe the proposed plans and actions will be consistent with criteria in Chapter 288, Florida Statutes: positive impacts on income and employment; social benefits outweigh identifiable social costs; no adverse effects on any key Florida industry; and official lead agency support for the project."

Response: No response required.

Office of Planning and Budgeting
Environmental Policy Unit
(Exhibit 7)

Comment #1: "There is no adverse impact to the department's budget, since this project is programmed in the 5-year work plan."

Response: No response required.

United States Department of Commerce
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
(Exhibit 8)

Comment #1: "Submerged aquatic vegetation (sea grasses) occurs within the project area and could be adversely affected by direct removal from relocation of the channel. Sea grasses are a vital component of the Clearwater Harbor estuarine complex and are beneficial to a variety of commercially and recreationally important finfish and shellfish....Compensating for loss of sea grass habitat is difficult, costly, and typically their overall results are marginal. It is the position of the NMFS that adverse impacts to sea grasses must be avoided."

Response: Channel realignment is not required for the preliminary preferred alternative, Alternative P4A. This alternative effectively minimizes impacts to seagrasses and mangroves in the project area.

Comment #2: "Emergent saltmarsh and mangrove habitats also occur in the project area. These areas provide forage and refuge habitat to a variety of commercially and recreationally important finfish and shellfish. While we recommend that impacts to these areas be avoided, compensatory mitigation for unavoidable impacts to these habitat types is typically more successful. Establishment of fringe emergent vegetation, such as smooth cord grass and/or mangroves, along the causeway shoreline would provide habitat value and protect the shoreline."

Response: No response required.

Comment #3: "Due to the highly urbanized nature of the project area and other man-made modifications to the surrounding environment, off-site mitigation for impacts to emergent wetlands may be more ecologically beneficial than on-site mitigation. Therefore, mitigation alternatives enhancing existing restoration activities or existing natural areas within Clearwater Harbor should also be investigated."

Response: No response required.

Comment #4: "Options for removal of the existing structure that involve explosives or other techniques that may affect threatened or endangered species, or protected marine mammals (i.e. dolphins) should be coordinated with our Protected Species Management Branch."

Response: The contractor and subcontractor shall ensure that care is taken to conduct all construction 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 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 which would jeopardize the well-being of these species. To minimize the potential impacts of bridge demolition and construction on manatees and sea turtles, a continuous Manatee and Sea Turtle Watch Program will be established as discussed in the Environment Assessment.

United States Department of Transportation
United States Coast Guard
(Exhibit 9)

Comment #1: "A Coast Guard bridge permit will be required for this project. Guide clearances of 100 feet horizontal and 65 feet vertical have been established for this portion of the Gulf Intracoastal Waterway. We recommend that you contact and survey waterway users to determine whether greater clearances may be required to meet the needs of navigation. This needs analysis should reduce the likelihood of your permit being delayed for navigational considerations. The Coast Guard decision on navigation adequacy is a necessary part of the permit approval process."

Response: As part of the this study, a boat height survey was completed to determine the vertical clearance for the proposed bridge that would meet the needs of the boating community. The City has determined through this analysis that the proposed bridge's vertical clearance should be approximately 22.6 m (74 ft). In addition, this height is consistent with the height of the Clearwater Pass Bridge, which provides access to and from the Gulf of Mexico.

5.2 Interagency and Public Coordination and Consultation

As project development activities progressed and as a result of input received through the Advance Notification process, a series of meetings have been held with various agencies and the public. Provided below is a chronology of coordination meetings which have taken place on the project to meet identified concerns. In addition, a summary is provided of the public meetings which have been held regarding the project.

Pinellas County Metropolitan Planning Organization Meeting, November 6, 1995: The City and its consultant conducted a meeting with several members of the County's Metropolitan Planning Organization to primarily brief the MPO staff about the status of the Memorial Causeway Bridge PD&E Study. Other topics discussed include the need to ensure the proposed project will be consistent with the MPO plan and priorities, and funding sources.

Pinellas County MPO Technical Coordinating Committee Meeting, November 29, 1995: The City and its consultant attended the meeting to brief the TCC on the status of the Memorial Causeway Bridge replacement studies and address their questions regarding the project.

Pinellas County MPO Citizen's Advisory Committee Meeting, November 30, 1995: The City and its consultant attended the meeting to brief the CAC on the status of the Memorial Causeway Bridge replacement studies and address their questions regarding the project.

Pinellas County MPO Kick-off Meeting, March 13, 1996: The City's Mayor, City staff and its consultant held an open house in the Clerk's Conference room for the benefit of MPO members. A presentation to the MPO followed. Topics covered included project status, a review of the results of the feasibility study, a description of the upcoming PD&E study, and an introduction of the study team members.

Southwest Florida Water Management District, Pre-Application Meeting, March 20, 1996: The consultant met with the Southwest Florida Water Management District Staff to discuss water quality, stormwater management, drainage and permitting issues for the proposed project.

City of Clearwater, Environmental Advisory Board Meeting, March 20, 1996: The City's consultant gave a presentation to the City's Environmental Advisory Board. The presentation consisted of a project update and discussion of potential environmental issues which would need to be evaluated as part of the study.

Scoping Meeting, March 26, 1996: The City and its consultant meet with staff members from FDOT, United States Army Corps of Engineers and United States Coast Guard. The purpose of the meeting was to clarify the roles of the two federal agencies in the PD&E Study process. The attendees were updated on the project's status and the

results of the feasibility study. Additional topics included potential environmental impacts of construction of a new bridge, FHWA's involvement, State Environmental Impact Report (SEIR) vs. NEPA document, methods for determination of adequate vertical clearance, and potential funding sources.

City of Clearwater, City Commission Meeting, May 2, 1996: The City's consultant gave a brief presentation to the Clearwater City Commission. Topics of the presentation included current engineering activities, the introduction of Alternative P4A North and the Cleveland Street Extension, results of the traffic analysis and the assessment of probable economic impacts. In addition, it was mentioned that the study had been upgraded to a federal NEPA process from the SEIR and the implications of this change on the project's schedule. Potential funding sources were also discussed at this meeting.

Pinellas County Traffic Engineering Division, July 2, 1996: A meeting was held between the Pinellas County Traffic Engineering Division and the City's consultant. This meeting was meant to brief the County on the alternatives under consideration and the probable traffic impacts of the project.

City of Clearwater, City Commission Meeting, July 18, 1996: A presentation was given to the City Commission by City Staff and the City's consultant. The purpose of this presentation was to give a project update and to discuss the funding alternatives available to pay for a new bridge.

Southwest Florida Water Management District Meeting, August 28, 1996: A meeting was held between the City's consultant and the staff of the Southwest Florida Water Management District. The purpose of the meeting was to give the District an update of the project's status and address environmental issues including potential sea grass, mangroves, and water quality impacts. In addition, the consultant introduced the C4WS alternative to the District staff. This alternative was then discussed in detail due to the expected high environmental impacts. Mitigation alternatives for sea grass bed impacts were also discussed.

Pierce 100, Board Meeting, September 9, 1996: A presentation was given to the residents of Pierce 100 at their September board meeting. The purpose of the presentation was to update the residents on the project's status and the alternatives under consideration.

Army Corps of Engineers Meeting, September 24, 1996: This meeting was held between the City's consultant, FDOT, and the Army Corps of Engineers at the ACOE office on MacDill Air Force Base. The meeting's purpose was to discuss the project's status, and in particular, alternative C4WS and its potential environmental impacts and channel relocation.

Pinellas County Metropolitan Planning Organization Presentation, October 9, 1996: The City and its consultant gave a brief update of the study and the PD&E process to the Pinellas County MPO members. The update included the following topics: the current alternatives under consideration and their cost estimates; additional road improvements which may be necessary, and the urban design opportunities the new bridge will have for the Downtown Clearwater area.

Sand Key Civic Association, November 6, 1996: A presentation was given to the Sand Key Civic Association regarding the project's status and the alternatives under consideration.

Clearwater City Commission, City Commission Meeting, February 3, 1997: The City's staff and consultant presented a project update on the status of the PD&E study.

Clearwater City Commission, City Commission Meeting, April 17, 1997: This presentation was given to the City Commissioners by the City's staff and consultant. The purpose of the presentation was to recommend a preliminary Preferred Alternative as well as discuss additional issues.

Pinellas County MPO, Technical Coordinating Committee, April 23, 1997: This presentation was given to the MPO's TCC to inform them of the need to amend the County's Long Range Transportation Plan to include the project and to update the committee on the project's status.

Pinellas County MPO, Citizens Advisory Committee, April 24, 1997: This presentation was given to the MPO's CAC to inform them of the need to amend the County's Long Range Plan to include the project and to update the committee on the project's status.

City of Clearwater Department of Parks and Recreation meeting, May 8, 1997: This meeting involved the City engineer, staff from the City's Department of Parks and Recreation, and the City's consultant. The purpose of the meeting was to discuss the expected impacts of the proposed project on the Bayfront Tennis Complex. Topics discussed included the tennis courts' existing conditions and usage, the City's options regarding the Complex's future, and the potential for Section 4(f) involvement.

Pinellas County Metropolitan Planning Organization, May 14, 1997: This presentation was given to the MPO by the City to request an amendment to the Long Range Transportation Plan which would add the bridge project to both the Plan and the TIP Priority List of Projects.

Environmental Advisory Board Meeting, September 17, 1997: A brief presentation was given to this board by the City's consultant to brief them on the status of the project and to address environmental impacts and issues.

In addition to the above presentations and meetings, interagency coordination, especially with the U.S. Coast Guard and U.S. Army Corps of Engineers, has also taken place throughout the study process through telephone conversations and correspondence. This correspondence is provided in Appendix C.

5.3 Formal Public Meetings and Workshops

A total of four (4) Local Interest Group (LIG) meetings were held in addition to the alternatives public workshop. A brief summary of these meetings is included here, and memos documenting these meetings in more detail will be included in the Comments and Coordination Report. In addition to the five meetings described here, numerous presentations have been given to community organizations, civic associations, and city advisory boards.

The purpose of the Local Interest Group (LIG) was to encourage participation of those members of the community who wanted to be more involved in the details of the study. The responsibilities of the LIG group were to advise the City and its consultants, review key study products, identify concerns and opportunities, assist in the development of design concepts, help to develop consensus, and participate in the formal public meetings. The membership of the LIG was open to all interested citizens; however, certain agency representatives, citizens, and other groups with an identifiable interest in the study were invited to participate. The membership of the LIG was composed primarily of local residents impacted by the proposed project, downtown Clearwater business owners, and other groups and including the Downtown Development Board, Clearwater Beautification Committee, and the Clearwater Chamber of Commerce. The attendance of the LIG meetings ranged from 36 people at the first meeting to 110 people at the fourth meeting.

Each of the four LIG meetings were directed toward a specific purpose as described below. The LIG meetings were designed to build upon prior meetings, and the format of later meetings was modified based on the input of LIG meeting attendees.

The **first LIG meeting** was held on the evening of March 28, 1996 at Clearwater's Harborview Center. The purpose of the first meeting was to provide an overview of the study, as well as an opportunity for LIG members to identify important design and community issues related to the proposed project. The brainstorming process resulted in the identification of topics of concern to be examined further by the study team.

The **second LIG meeting** was held on the evening of May 23, 1996 at the Peace Memorial Presbyterian Church in downtown Clearwater. The purpose of this meeting was to expand on the topics of concern which were identified at the first meeting. These topics were broken down into four main areas: process (funding and need); navigation, harbor, environment, causeway removal and fishing facilities; traffic and economic development; and urban design. After a project update, the attendees were divided into four smaller groups representing each of the areas of concern. The questions developed from the brainstorming process were used to focus the group discussions. Following the

breakout session, a spokesperson for each group summarized the comments on their topic for the rest of the LIG members. In addition, updated information was presented on the alternative alignments and design opportunities for the proposed bridge.

The **third LIG meeting** was held on the evening of June 27, 2996 at the Peace Memorial Presbyterian Church. The purpose of this meeting was to look at the topics and comments from the past meetings and verify which issues were important to LIG members. The criteria to be used to evaluate these issues was also determined. In addition, an overall project update and presentation of the alternative alignments was also provided by the study team. Figures 5-1 and 5-2 summarize the LIG-developed issues and criteria in ranked order.

The **fourth and final LIG meeting** was held on October 15, 1996 at the Calvary Baptist Church Education Building in downtown Clearwater. The meeting began with an open house format at which the LIG members had an opportunity to view the alternatives under consideration and informally ask the study team questions. The formal portion of the meeting included an update to the project, discussion of new alternatives, and presentation of the findings of the downtown economic impacts study conducted for the project. In addition, the LIG members were given an opportunity to evaluate each of the alternatives relative to the criteria and issues determined by the LIG in the earlier meetings. At the end of the meeting, the LIG members were asked to "vote" as to which alternative they preferred. Of the build alternatives, the top choice was Alternative P4NE and the second most popular choice was Alternative P4S.

The LIG meetings provided the study team with an opportunity to receive feedback from interested citizens throughout the PD&E study. These meetings helped the study team focus on the issues which were of concern to community groups. In addition, LIG ideas were used to develop or refine three of the five alignment alternatives.

The **Alternatives Public Workshop** was held on December 3, 1996 at the First Christian Church in Clearwater. All property owners located within 91.4 m (300 ft) of the centerline of any proposed alternative were notified by letter in advance of the meeting. The purpose of this workshop was to present information to the public regarding the various alternative alignments under consideration. In addition, the public was given an opportunity to comment on the project through written comments, statements to a court reporter, or oral statements to the group. Unlike the LIG meetings, the aim of this workshop was to involve a broader segment of the general public. Therefore, this meeting was formally advertised in the *St. Petersburg Times*. The workshop was held as an open house format with a brief formal presentation and public comment period included. A summary of public comments received will be included in the Comments and Coordination Report.

The proposed project is supported by most local community leaders. Opposition to the proposed project has been expressed by nearby condominium residents and by some

downtown merchants, who are concerned about a possible reduction in retail sales as a result of shifting traffic patterns.

In addition to the above public involvement opportunities, a public hearing is planned following circulation of the Draft Environmental Assessment. The public hearing is held to give the public a final opportunity to comment on the project prior to the completion of the project development and environment study. This meeting will likely be held in the Clearwater City Commission Chambers. Prior to the hearing, letters of notice will be mailed out to Local Interest Group members and property owners located within 91.4 m (300 ft) of the project. Testimony and public comments will be recorded and the hearing will be advertised in both the *St. Petersburg Times* and the *Florida Administrative Weekly*.

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6.0 APPENDICES

A. Plan and Profile Drawings for Corridor Alternative Alignments

B. Plan and Profile Drawings for Viable Build Alternatives

C. Permitting Agency Coordination

D. Water Quality Impact Evaluation

E. Correspondence Received

F. Advance Notification and Response Letters

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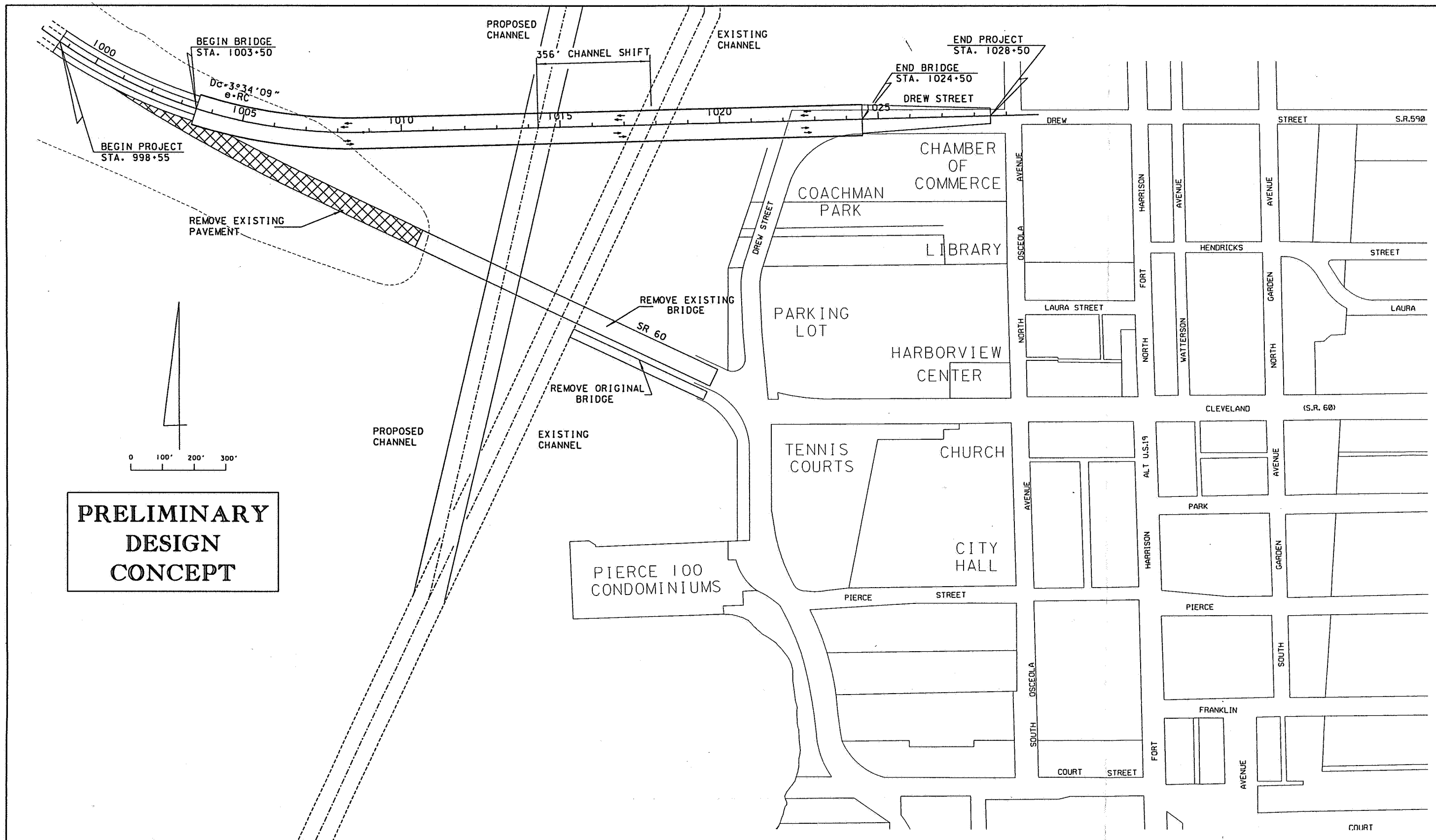
APPENDIX A

PLAN AND PROFILE DRAWINGS FOR CORRIDOR ALTERNATIVE ALIGNMENTS



Memorial Causeway Bridge Feasibility Study

HDR ENGINEERING, INC.

May 1995

ALTERNATIVE D4
4 LANE BRIDGE

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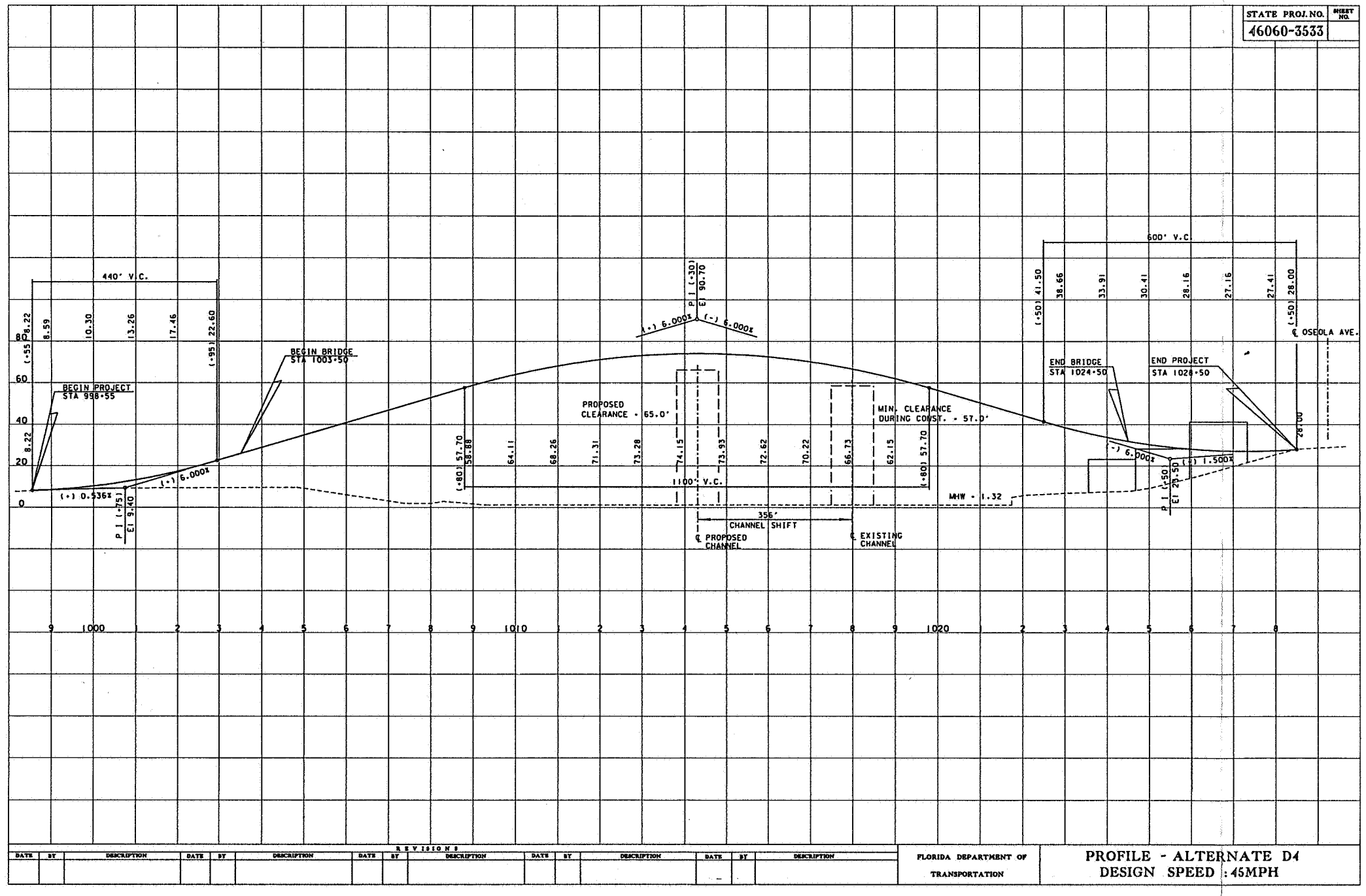
46060-3533	



REVISIONS												
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FLORIDA DEPARTMENT OF TRANSPORTATION

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DESIGN SPEED : 45MPH

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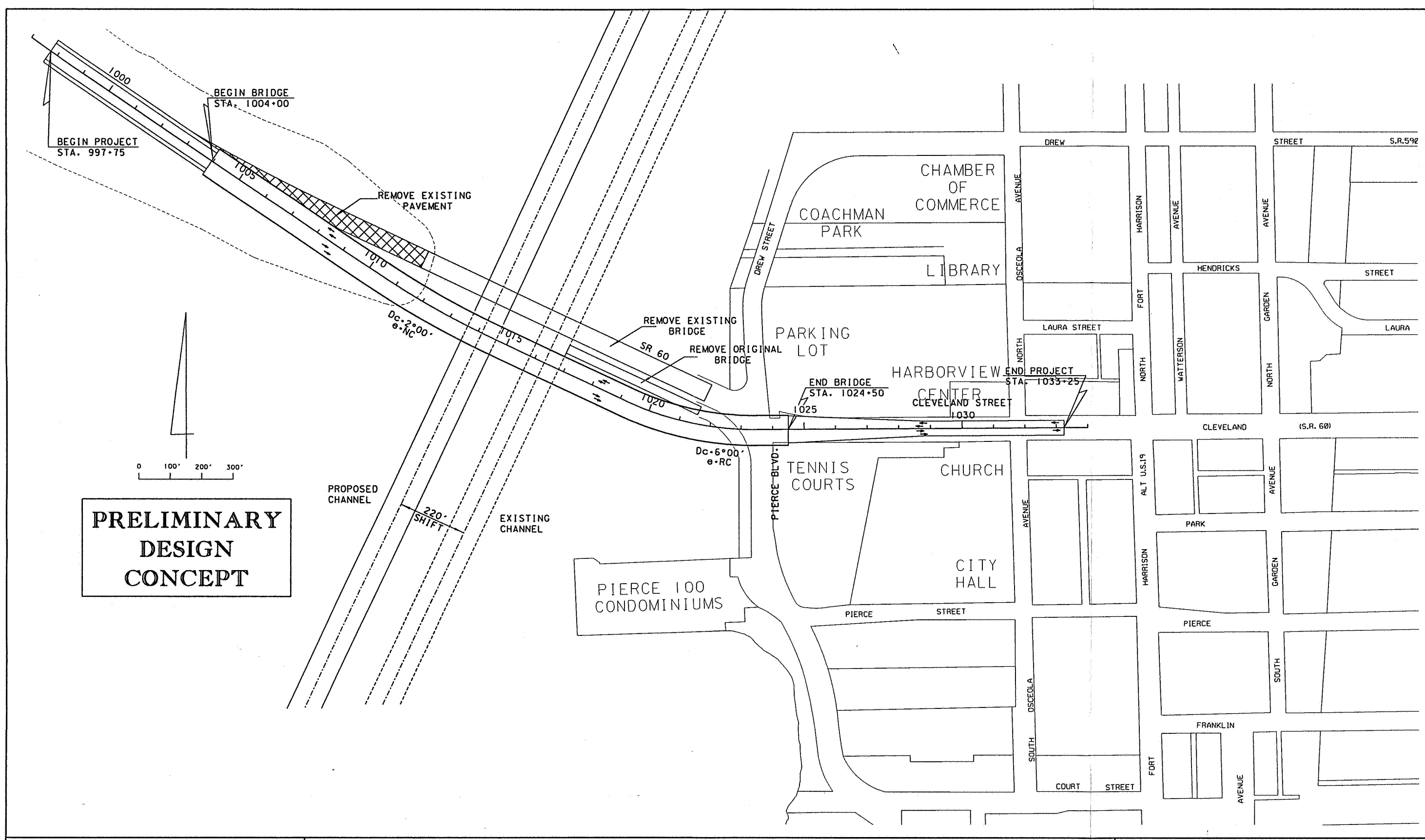

PRELIMINARY DESIGN CONCEPT

Memorial Causeway Bridge Feasibility Study

HDR ENGINEERING, INC.

May 1995

ALTERNATIVE C4
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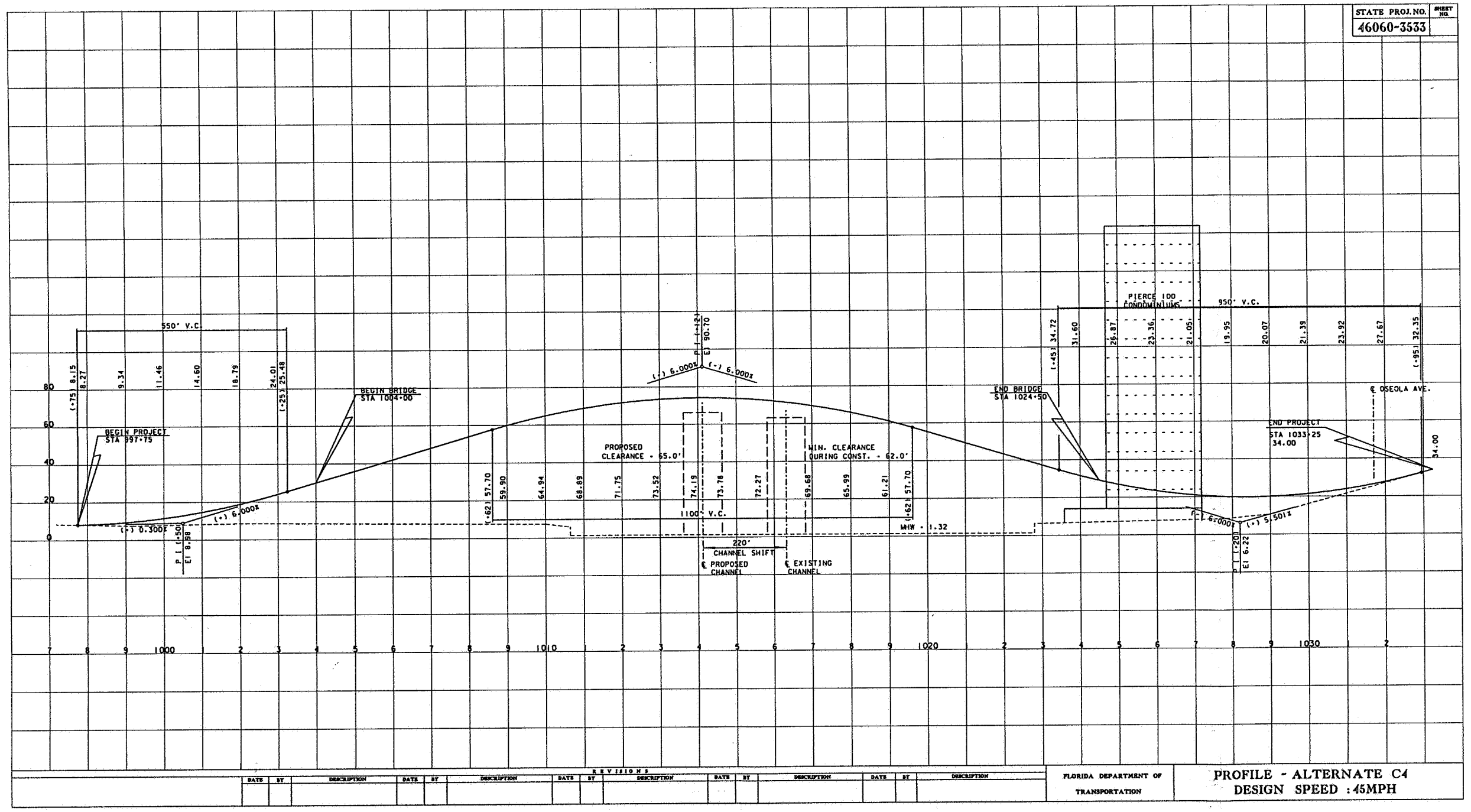

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FLORIDA DEPARTMENT OF TRANSPORTATION

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DESIGN SPEED : 45MPH

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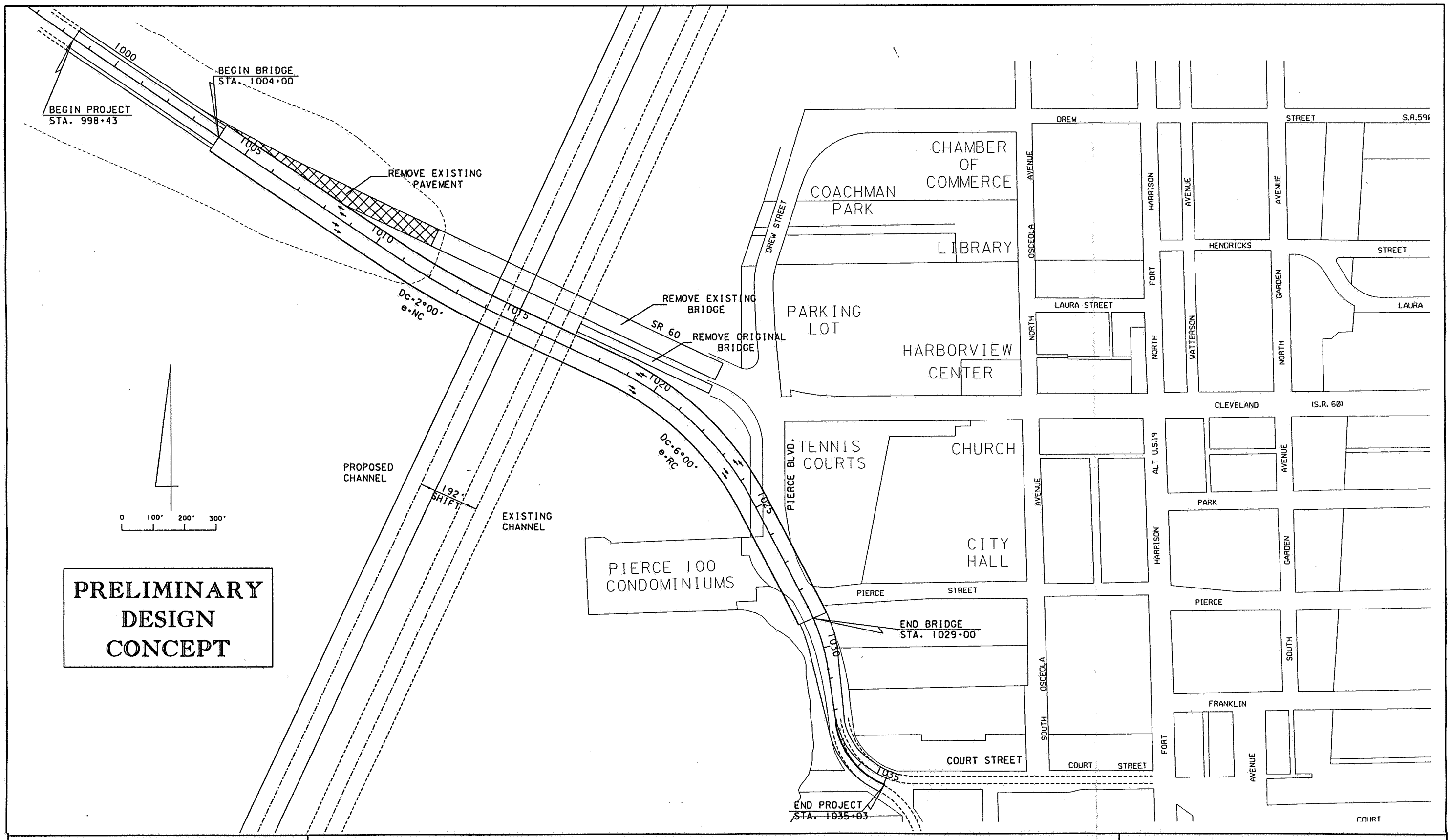

PRELIMINARY DESIGN CONCEPT

Memorial Causeway Bridge Feasibility Study

HDR ENGINEERING, INC.

May 1995

ALTERNATIVE P4
4 LANE BRIDGE

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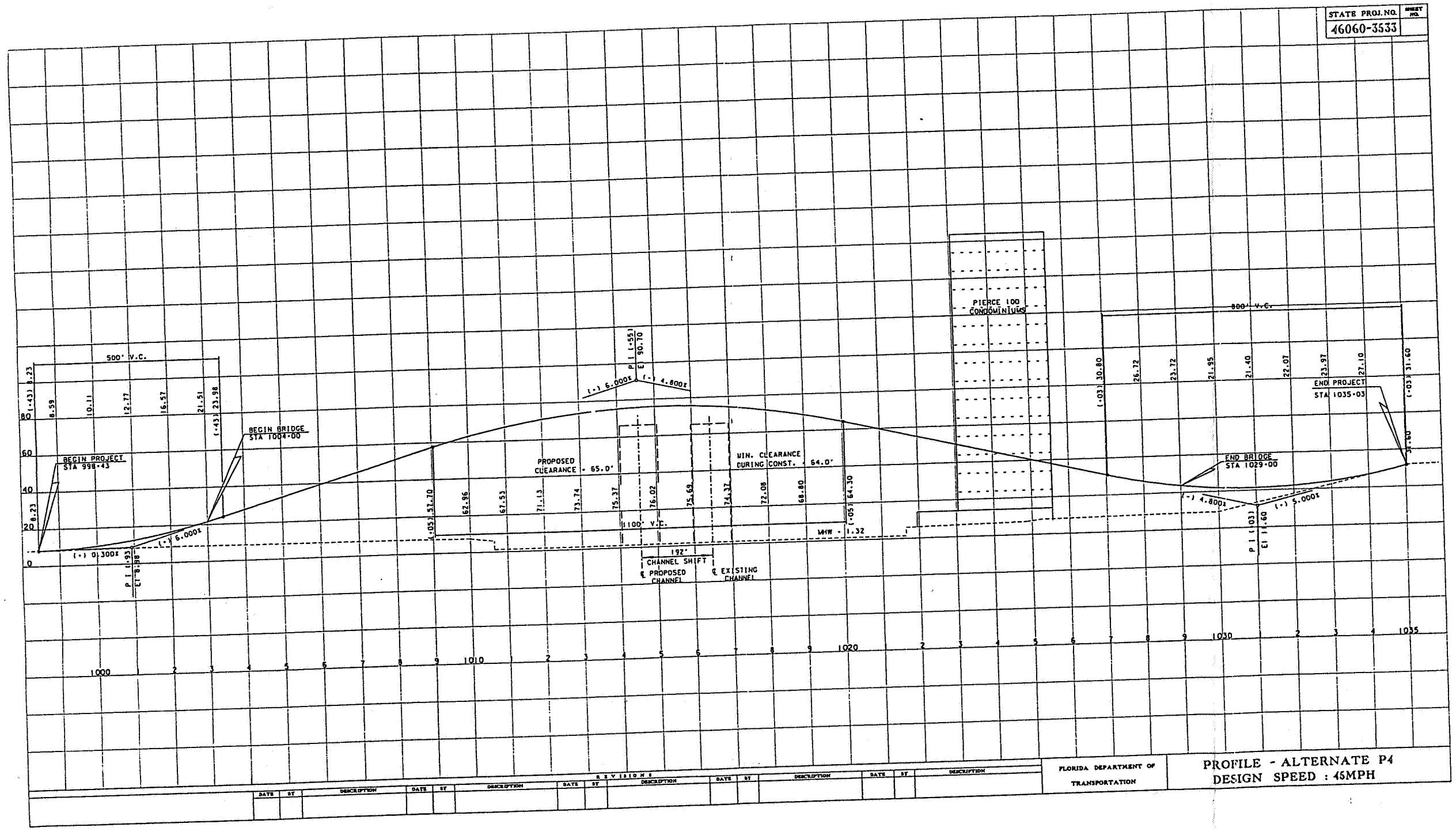

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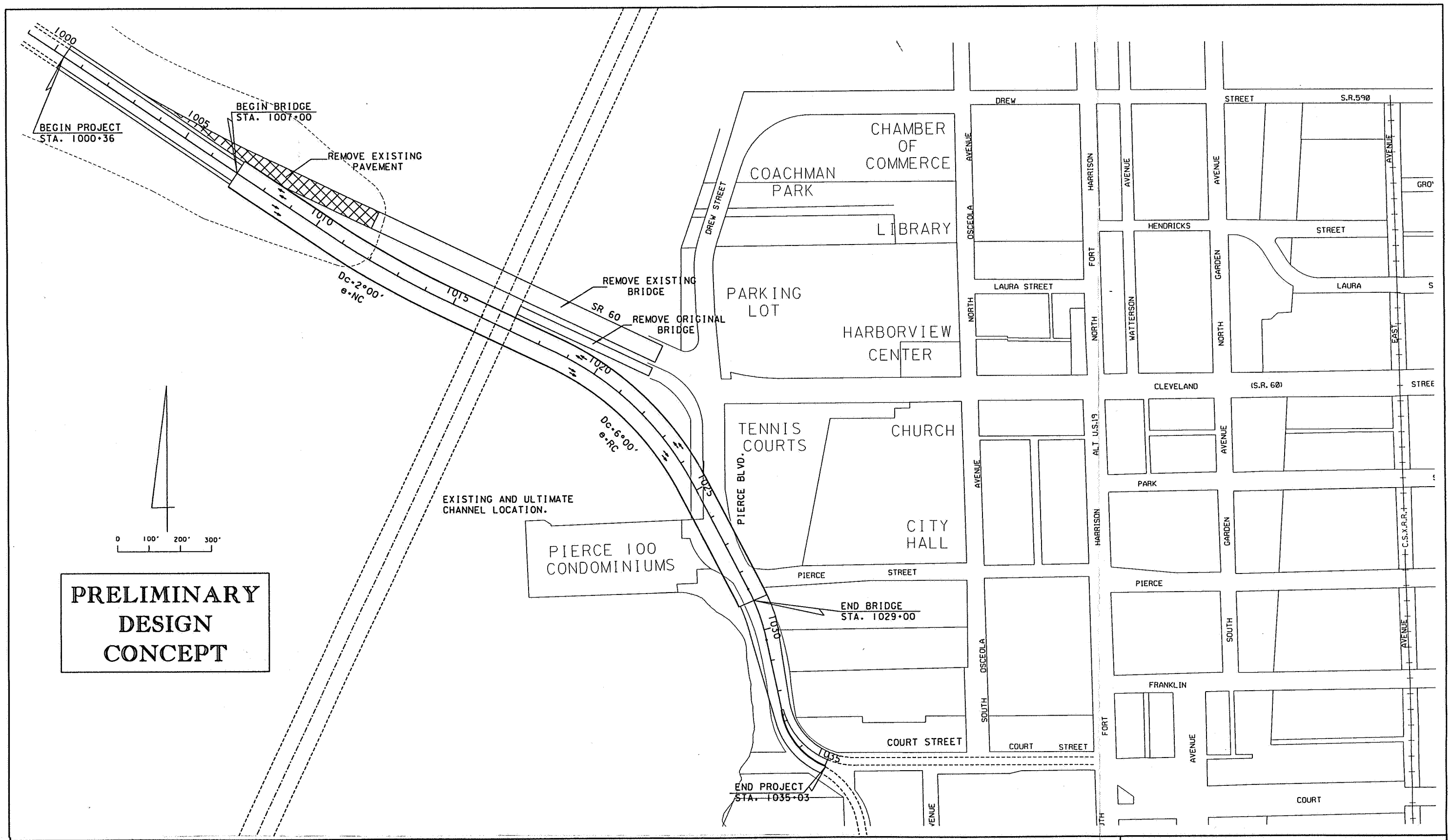
PROFILE - ALTERNATE P4
DESIGN SPEED : 45MPH

ALTERNATIVE P4 - PROFILE



Memorial Causeway Bridge Feasibility Study

HDR ENGINEERING, INC.

May 1995

ALTERNATIVE P4A
4 LANE BRIDGE

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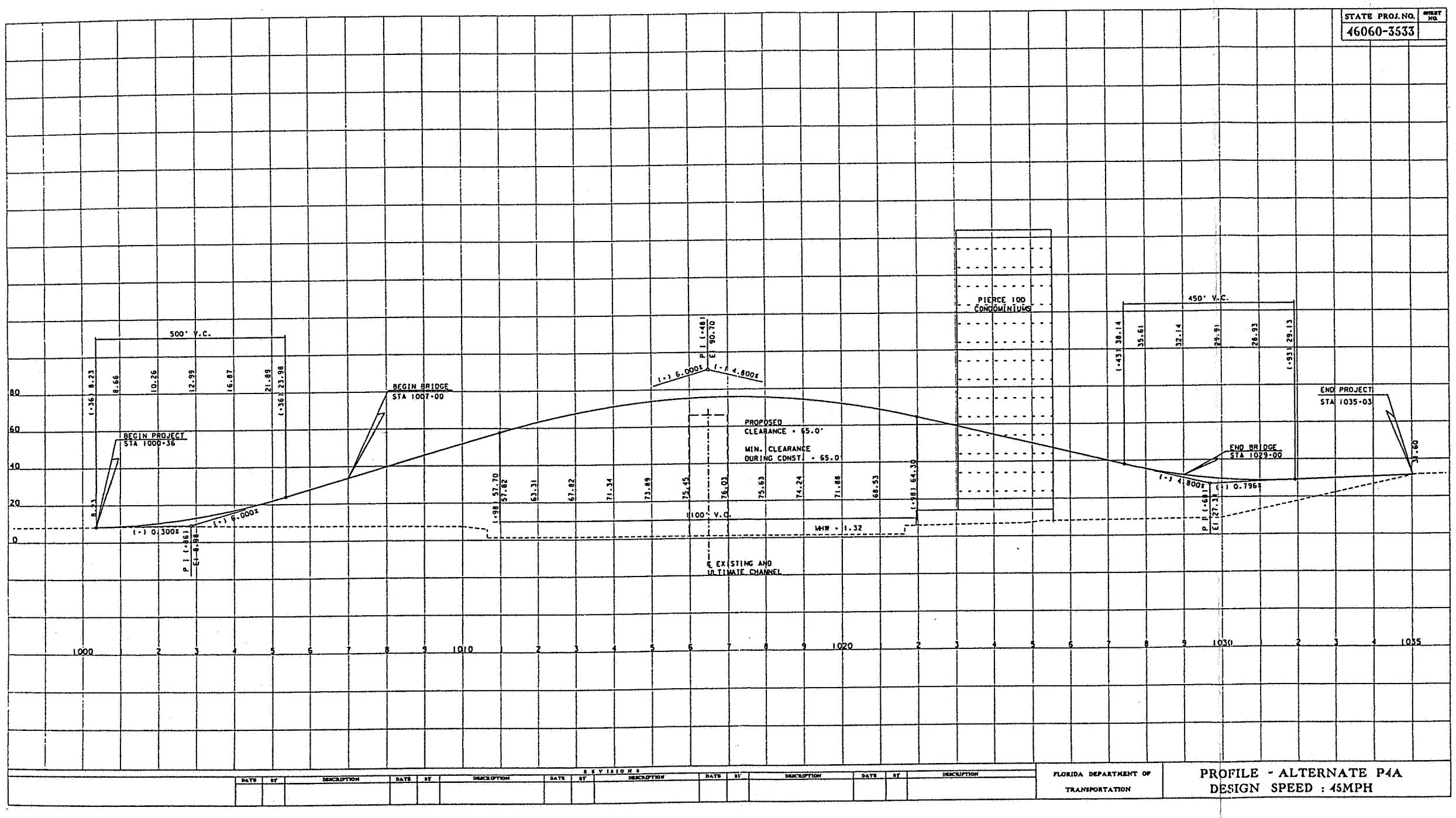

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FLORIDA DEPARTMENT OF TRANSPORTATION

PROFILE - ALTERNATE P4A
DESIGN SPEED : 45MPH

ALTERNATIVE P4A - PROFILE

BEGIN PROJECT
STA. 1000+36

BEGIN BRIDGE
STA. 1007+00

REMOVE EXISTING PAVEMENT

1000
1005
1010
540' TAPER
1015
1020
1025
1030
1035

REMOVE EXISTING BRIDGE

REMOVE ORIGINAL BRIDGE

SR 60

END BRIDGE
STA. 1024+50

END BRIDGE
STA. 1029+00

END PROJECT
STA. 1033+25

END PROJECT
STA. 1035+03

DC=6°00'
e=RC

DC=6°00'
e=RC

EXISTING AND ULTIMATE CHANNEL LOCATION.

0 100' 200' 300'

PRELIMINARY DESIGN CONCEPT

CHAMBER OF COMMERCE

COACHMAN PARK

LIBRARY

PARKING LOT

HARBORVIEW CENTER

CLEVELAND STREET

TENNIS COURTS

CHURCH

CITY HALL

PIERCE 100 CONDOMINIUMS

COURT STREET

DREW STREET

PIERCE BLVD.

DREW

LAURA STREET

CLEVELAND

PIERCE STREET

COURT STREET

OSCEOLA AVENUE

HARRISON

FORT

WATTERSON

GARDEN

NORTH

SOUTH

AVENUE

HENDRICKS

LAURA

FRANKLIN

PARK

COURT

ALT U.S.19

S.R.590

(S.R. 60)

C.S.X.R.R.

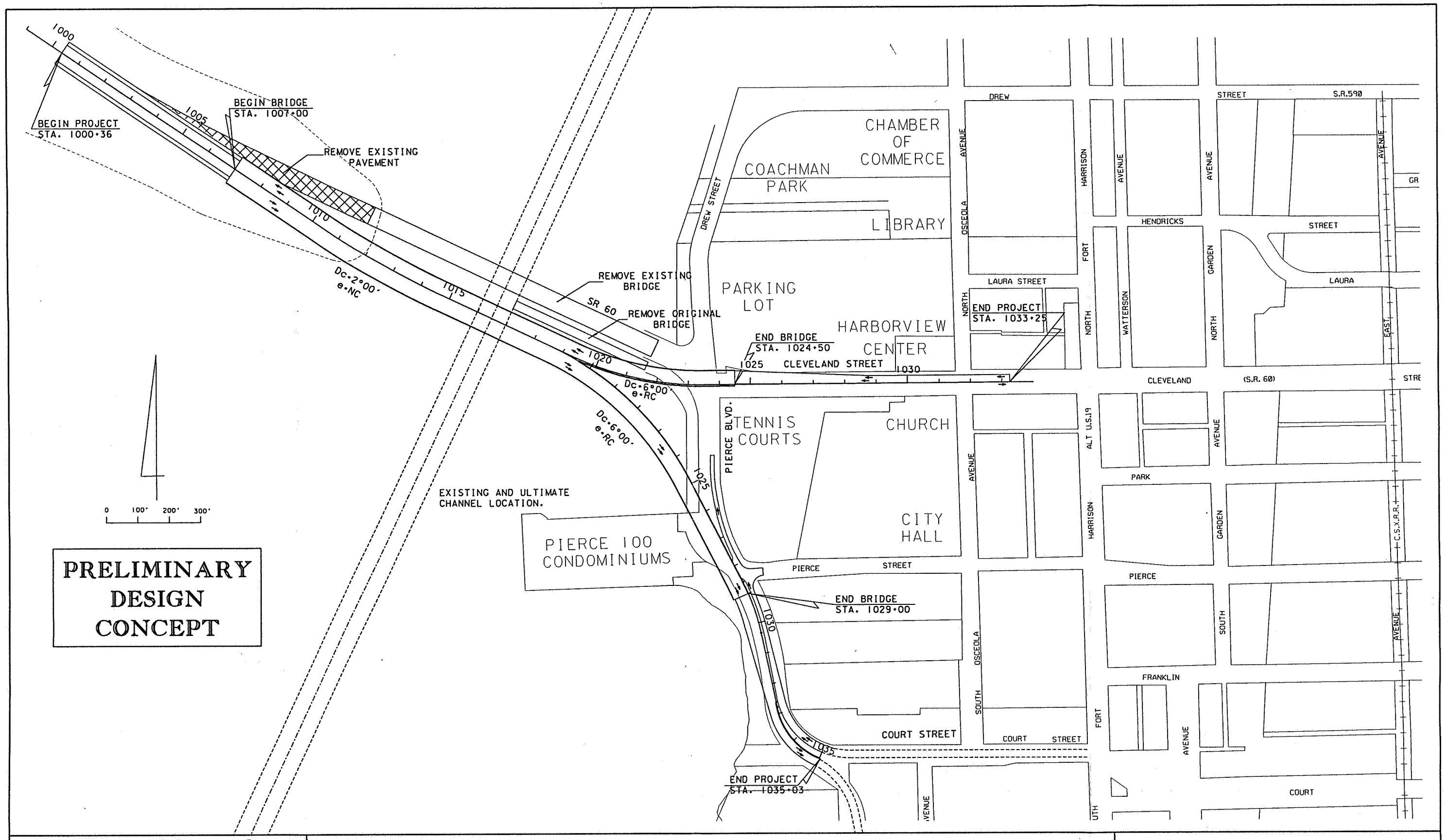
EAST

Memorial Causeway Bridge Feasibility Study

HDR ENGINEERING, INC.

May 1995

ALTERNATIVE C1P4
4 LANE BRIDGE



PRELIMINARY DESIGN CONCEPT

Memorial Causeway Bridge Feasibility Study

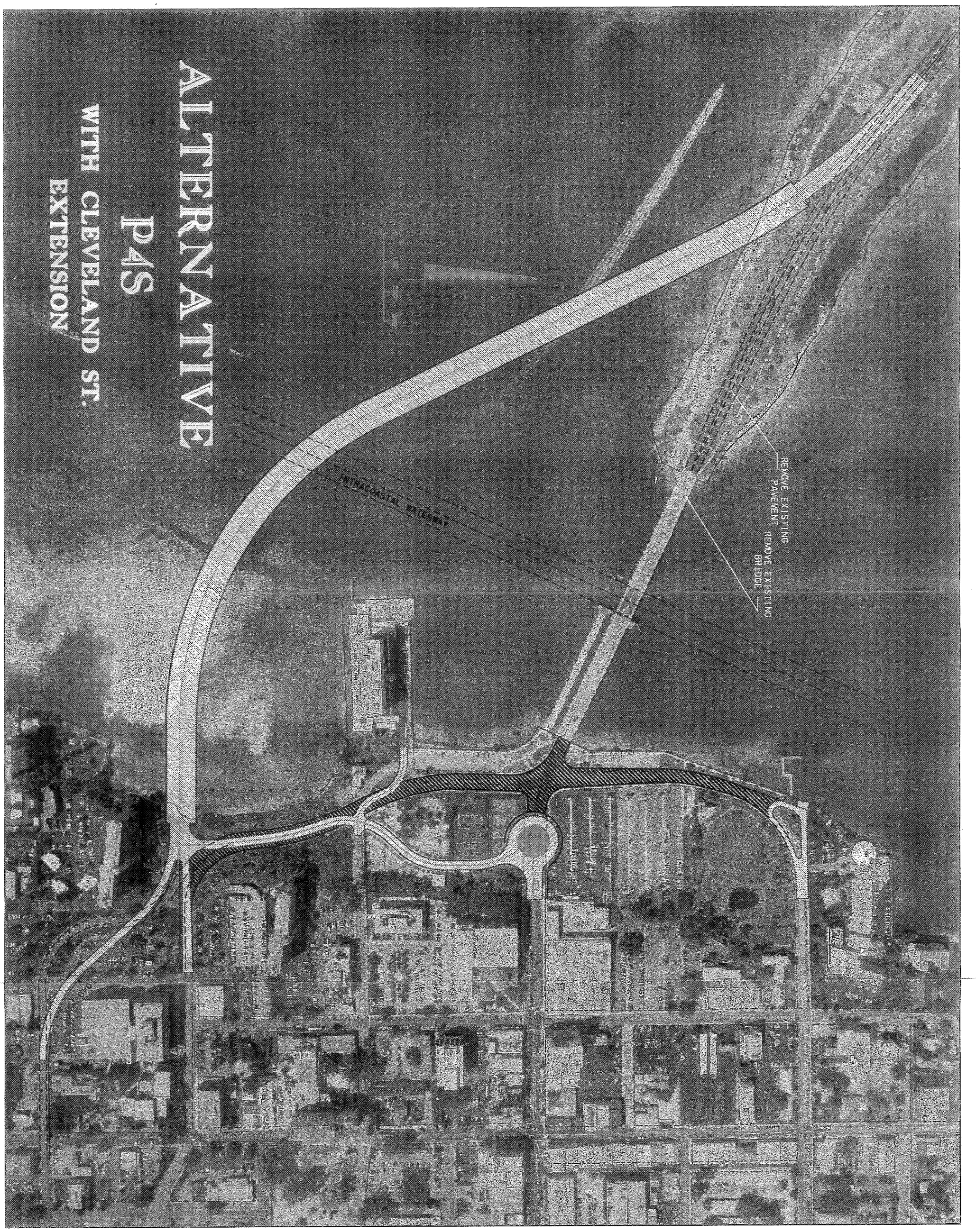
HDR ENGINEERING, INC.

May 1995

ALTERNATIVE C2P2
4 LANE BRIDGE

APPENDIX B

PLAN AND PROFILE DRAWINGS FOR VIABLE BUILD ALTERNATIVES



ALTERNATIVE P4S PLAN VIEW

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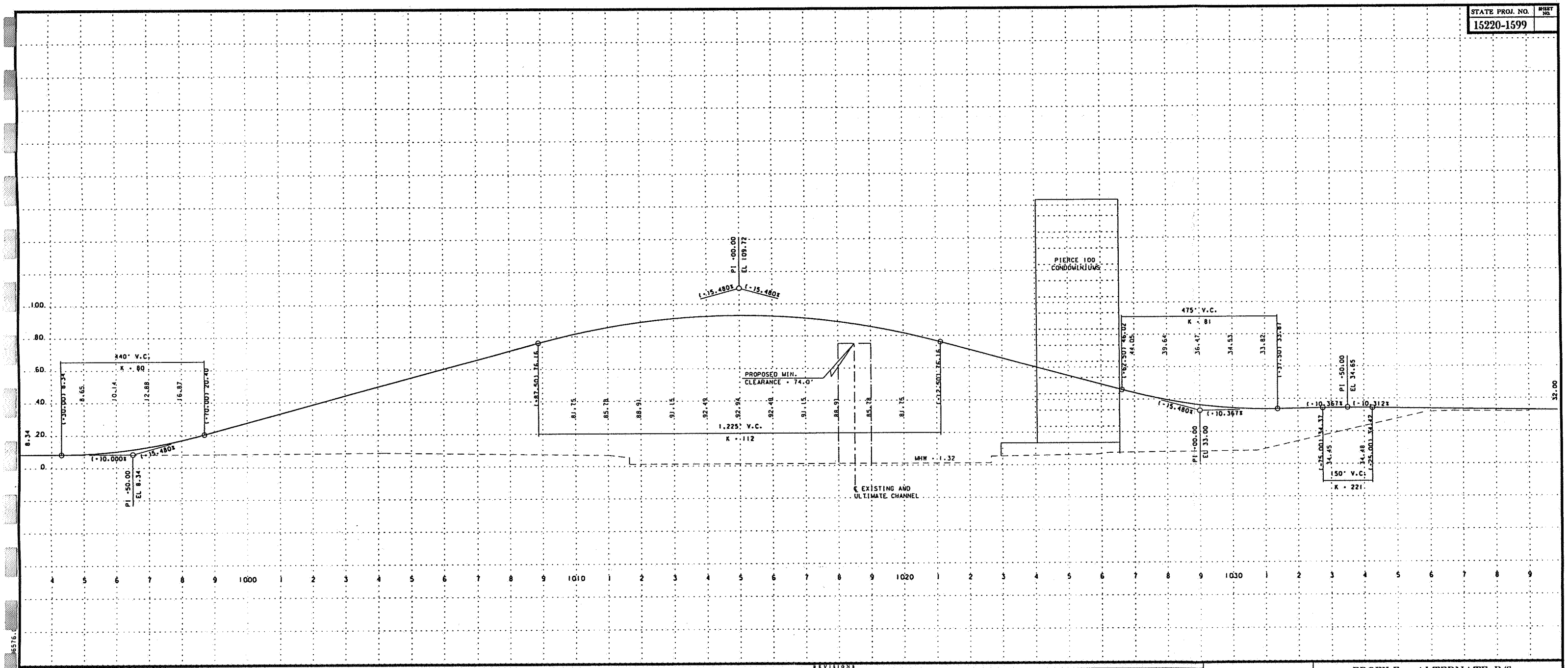
15220-1599	



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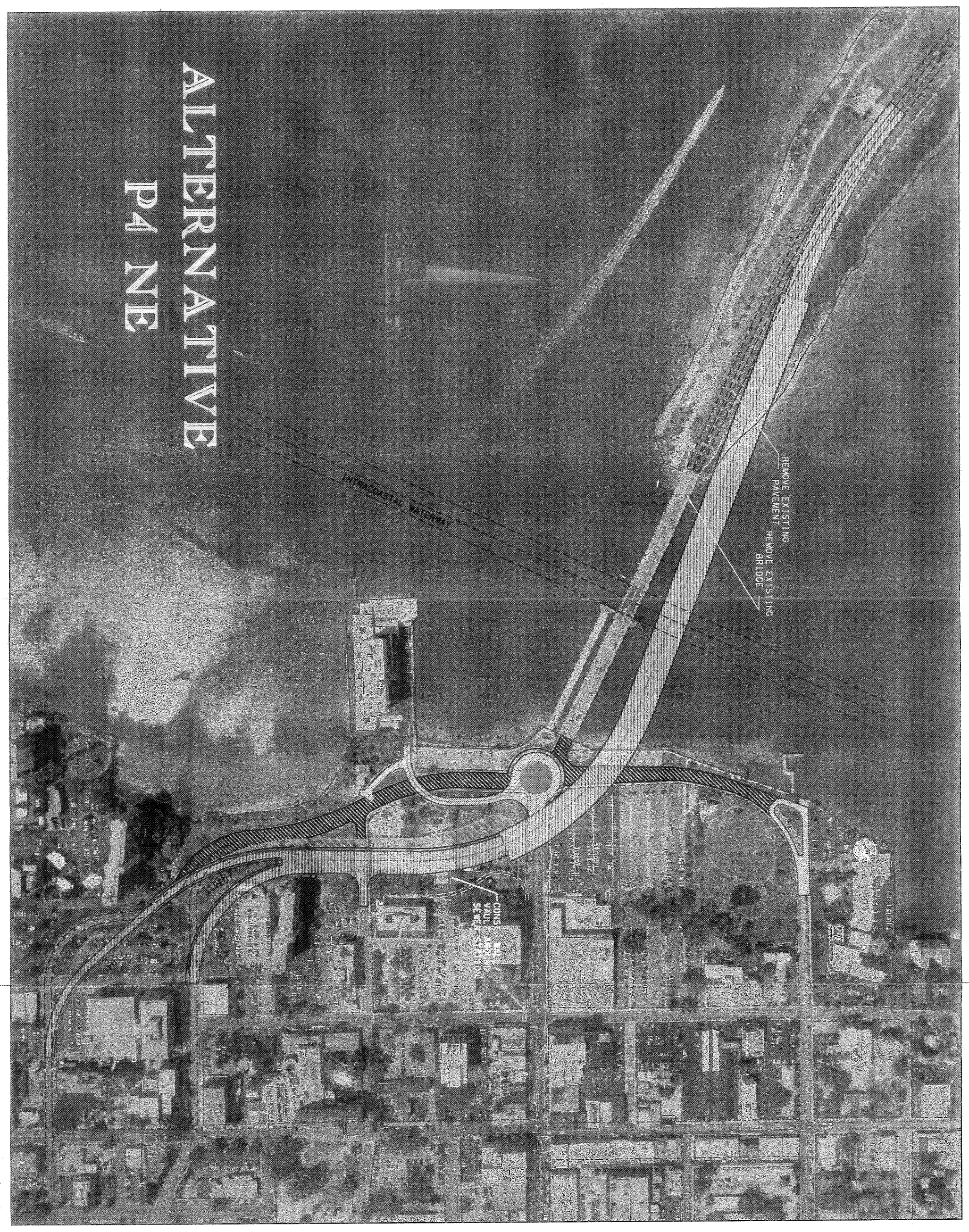
FLORIDA DEPARTMENT OF TRANSPORTATION

PROFILE - ALTERNATE P4S
DESIGN SPEED : 70 KM/H (45MPH)

ALTERNATIVE P4S - PROFILE



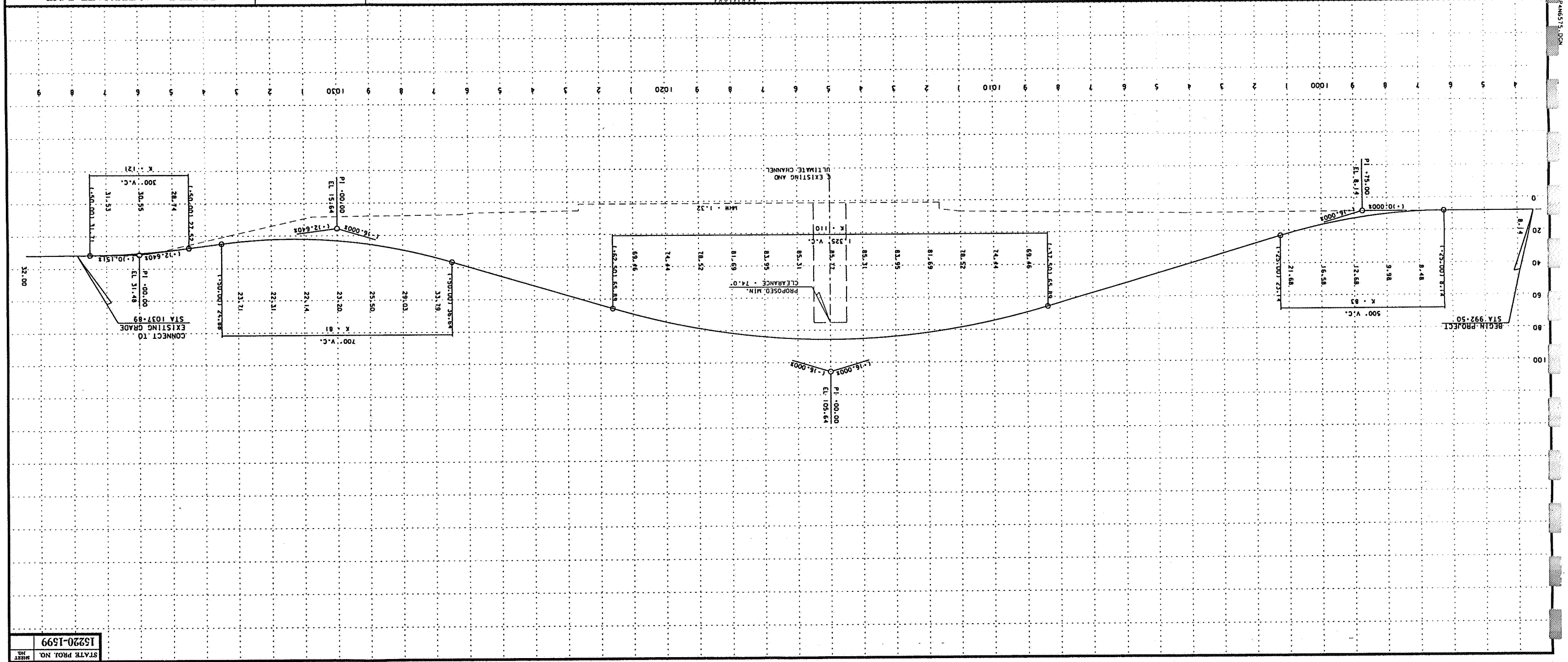
ALTERNATIVE P4NE PLAN VIEW

ALTERNATIVE P4NE - PROFILE

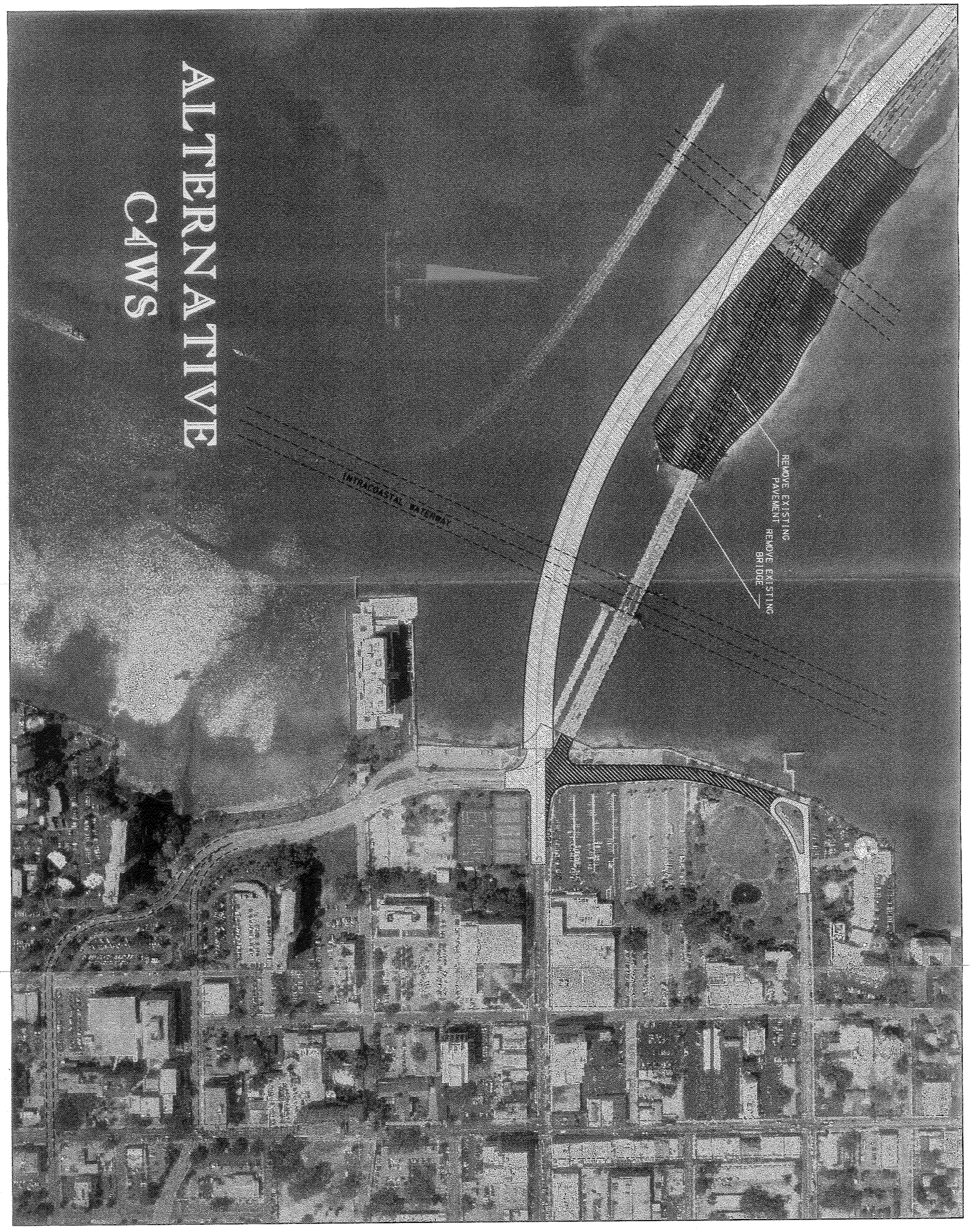
PROFILE - ALTERNATE P4NE
DESIGN SPEED : 70 KM/H (45MPH)

FLORIDA DEPARTMENT OF TRANSPORTATION

DESCRIPTION	BY	DATE
REVISIONS		

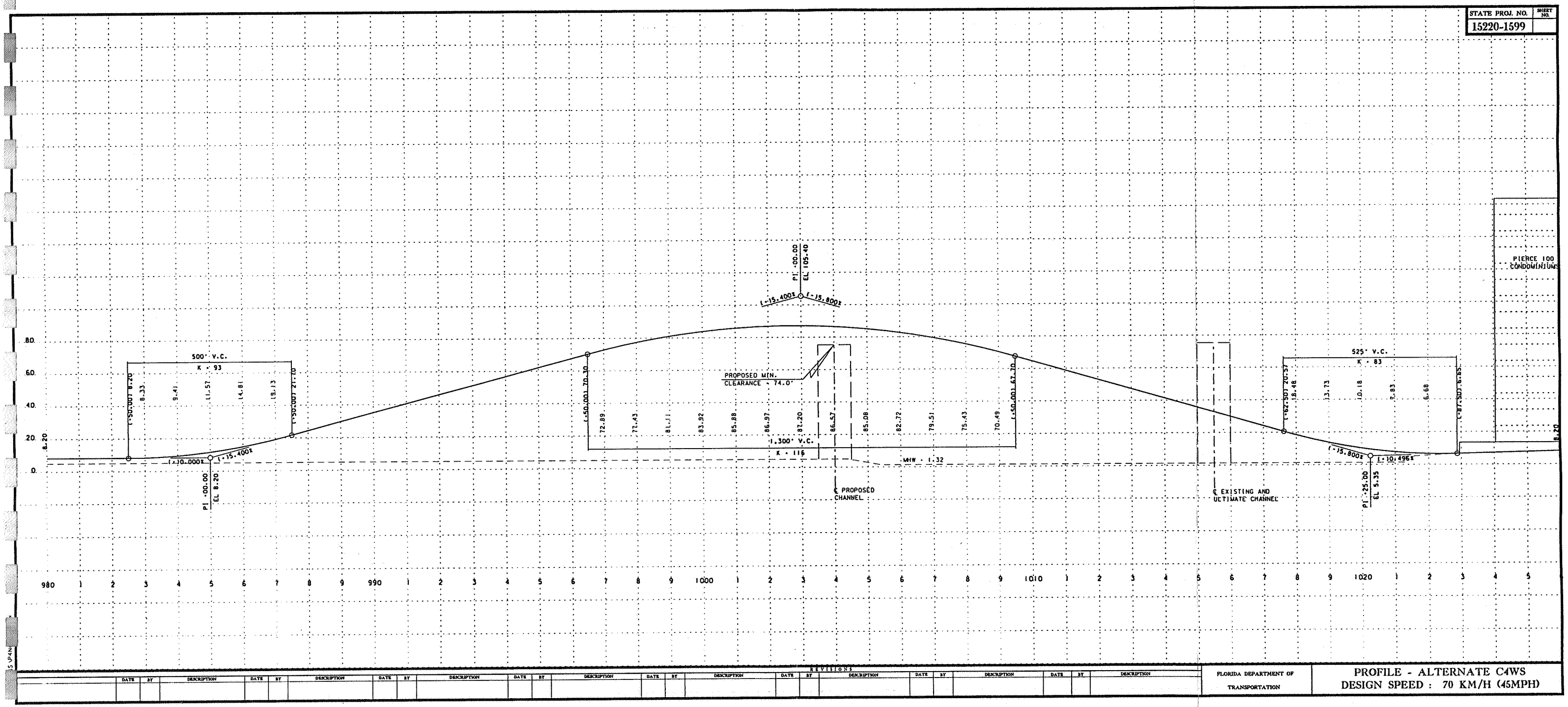


STATE PROJ. NO.	SHEET NO.
15220-1599	



ALTERNATIVE C4WS PLAN VIEW

STATE PROJ. NO.	SHEET NO.
15220-1599	



REVISIONS																							
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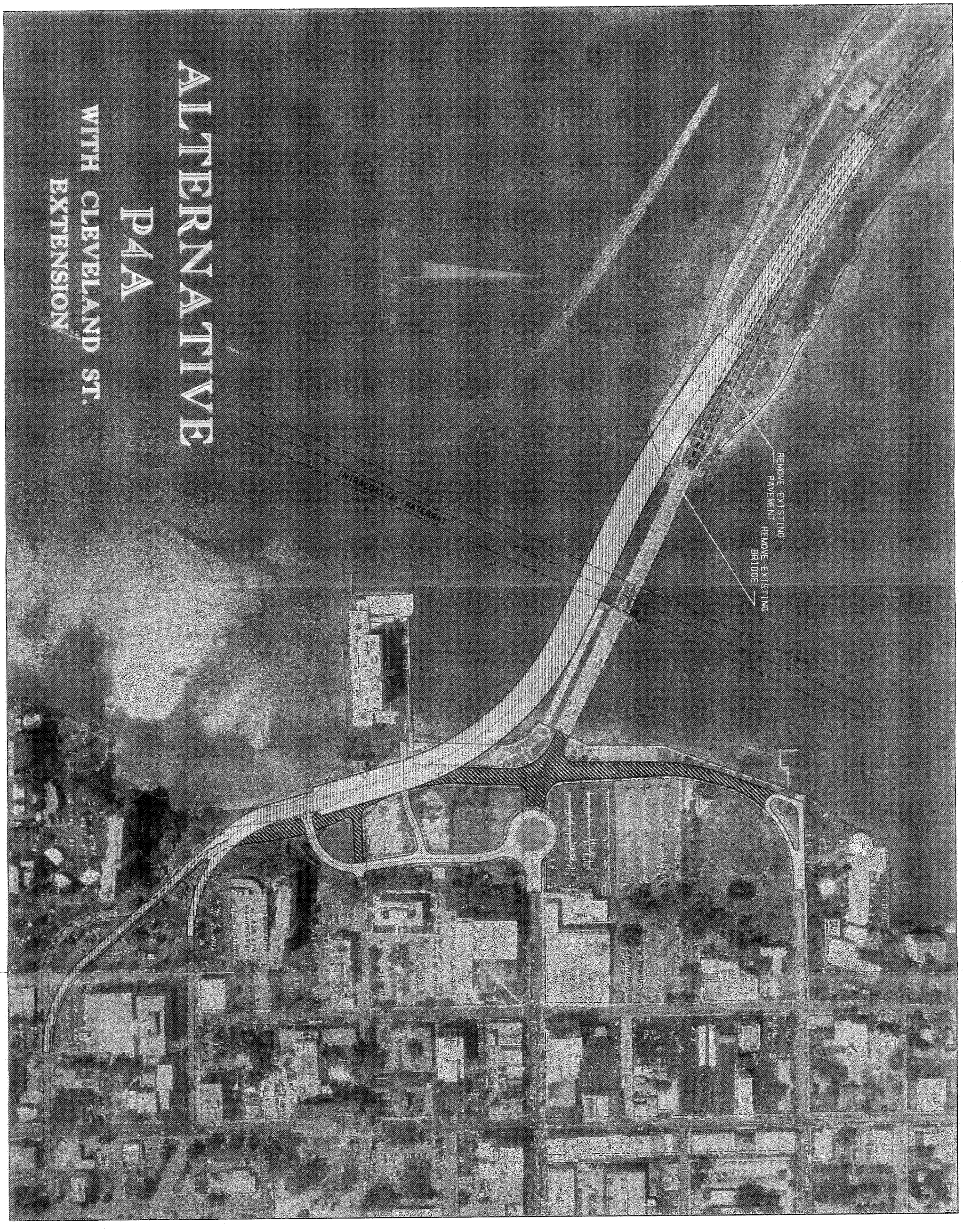
FLORIDA DEPARTMENT OF TRANSPORTATION

PROFILE - ALTERNATE C4WS
DESIGN SPEED : 70 KM/H (45MPH)

ALTERNATIVE C4WS - PROFILE

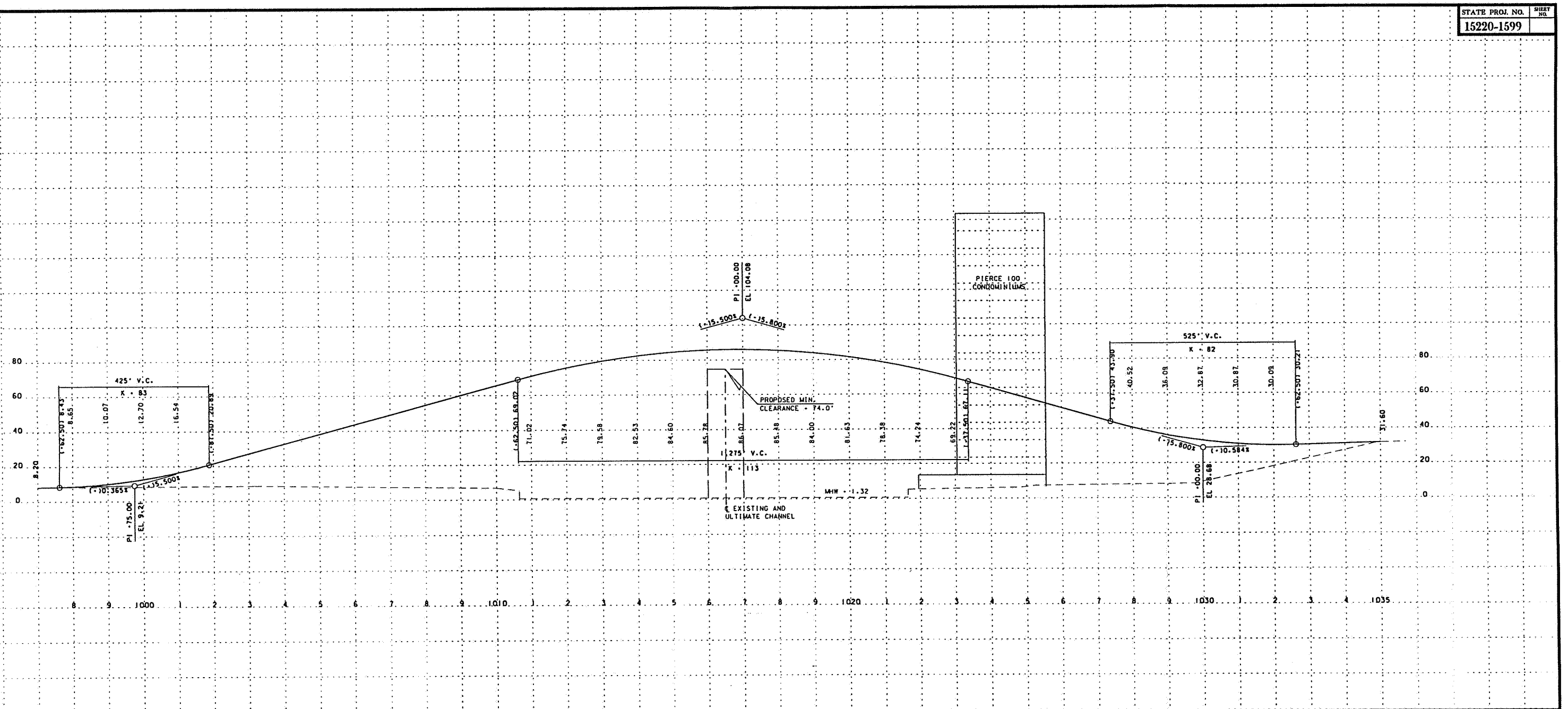
ALTERNATIVE P4A

WITH CLEVELAND ST. EXTENSION



ALTERNATIVE P4A PLAN VIEW

STATE PROJ. NO.	SHEET NO.
15220-1599	



REVISIONS																							
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

FLORIDA DEPARTMENT OF TRANSPORTATION

PROFILE - ALTERNATE P4A
DESIGN SPEED : 70 KM/H (45MPH)

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ALTERNATIVE P4A - PROFILE

ALTERNATIVE P4A NORTH

WITH CLEVELAND ST. EXTENSION

ALTERNATIVE P4A NORTH PLAN VIEW

ALTERNATIVE P4A NORTH - PROFILE

PROFILE - ALTERNATE P4A (NORTH)
DESIGN SPEED : 70 KM/H (45MPH)

FLORIDA DEPARTMENT OF TRANSPORTATION

DESCRIPTION	BY	DATE
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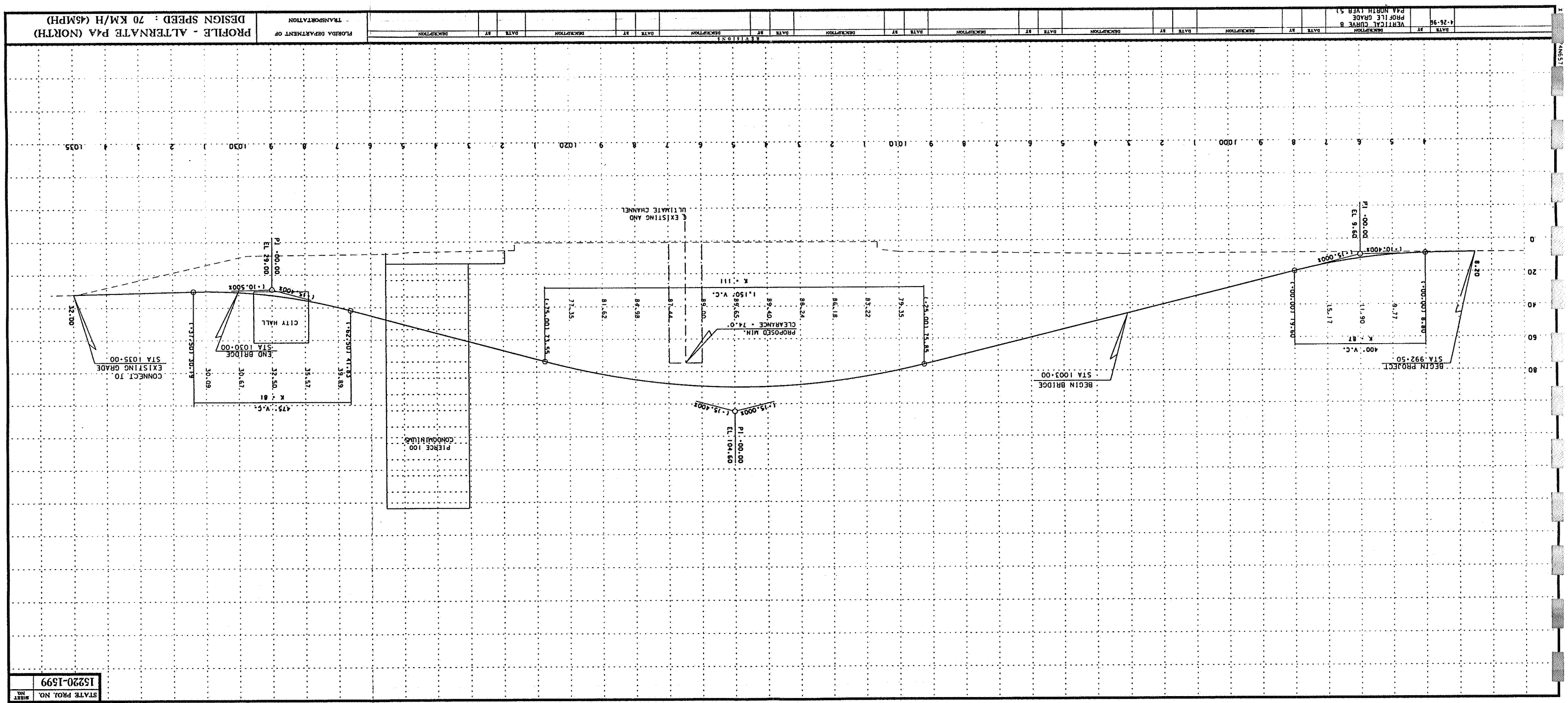
VERTICAL CURVE & PROFILE GRADE P4A NORTH (VEB 5)		4-26-96



STATE PROJ. NO.	SHEET NO.
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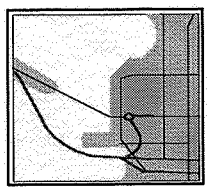
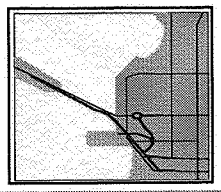
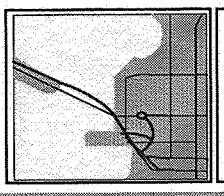
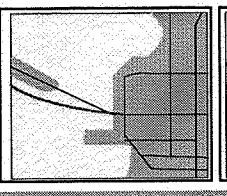
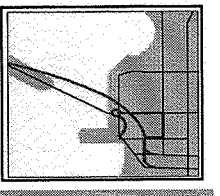
APPENDIX B
Alignment Alternatives Evaluation Matrix

January 1997

Est. Costs ($ Mill.) for Bridge w/ 74' Clearance	P4S	P4A	P4A North	C4WS	P4 NE
Construction, Design, & Const. Supervision[1] (FL Bulb T/Segm. Box)	$31/ $37	$26/ $32	$29/ $35	$40/ $48	$24/ $29
Architectural and Urban Design Elements [2]	$2	$2	$2	$2	$2
Right-of-way and Utility Relocation Costs	1.7	2.4	2.4	0.5	5
Wetlands Mitigation ($50,000/ac. ; 4:1 ratio)	0.05	0.05	0.05	2.4	0.05
Total Capital Costs (to nearest mill.) (FL Bulb T/Segm. Box)	$35/ $41	$30/ $36	$33/ $39	$45/ $53	$31/ $36
Periodic Channel Maintenance Costs to the City	--	--	--	✔	--
Right-of-Way (R/W) Acreages & Relocations					
Net County-Owned Land Required (acres) *	0	0	0	0	0.44
Privately-Owned Land Required (acres)	0.02	0.17	0.16	0	0.33
Business Relocations (WTAN Radio)	--	✔	✔	--	--
Nonprofit Relocations (Arts Council)	✔	✔	✔	--	✔
Environmental Impacts & Navigational Issues					
Channel Relocation Required for 65' or 74' Clearanc	N/A	N/A	N/A	✔	N/A
Potential Need to Relocate Minor Channel South of the Causeway	✔	N/A	N/A	N/A	N/A
Sea Grass Impacts (acres)	0.0026 ac.	0	0.0013 ac.	12 ac.	0.0013 ac.
Mangrove Impacts (acres)	0	0	0.0013 ac.	1.6 ac.	0.0013 ac.
Probable Noise Impacts (# receptors >/= 65dBA)	58	86	57	14	57
Potential Cultural Resource Impacts or Involvement					
Harbor Oaks Residential Area Historic District	×	--	--	--	--
Bayfront Tennis Courts (Section 4(f))	✖	✖	✖	--	✖
Fort Harrison Hotel (candidate for *National Register*)	--	×	×	×	×
Pinellas Arts Council Building (candidate for *National Register*)	✖	✖	✖	--	✖
Traffic Flow & Access					
Requires Some Parking Removal	✔	✔	✔	--	✔
Maint. of Traffic (MOT) During Const. (1=Best, 5=Worst)	2	4	5	1	3
Socioeconomic Impacts					
Maintains Downtown Pass-By Trips	--	--	--	✔	--
Potential Avg.% Reduction in Sales to Cleveland St. Bus. west of Myrtle	0 to 5 %	0 to 5 %	0 to 5 %	Not Affected	0 to 5 %
Ability to connect peds & bicyclists, beach to downtown (1=Best)	5	3 **	3 **	1	2
Land Use Changes					
Ability to Expand Coachman Park to the west and south	Excellent	Good	Good	Poor	Poor
Create more opportunity for pedestrian & waterfront uses	Excellent	Good	Good	Poor	Poor

✔= Probable Adverse Impact ×= Potential Effect

[1] Includes roadway approaches ✖= Potential Adverse Effect

[2] Includes railings, overlooks, stairs/elevator, lighting, park extension, pedestrian paving & roundabout

* includes allowance for existing R/W to be vacated, including Drew St. along the waterfront

**pedestrian/bicyclist access could be improved by provision of an elevator/ramp/staircase structure

APPENDIX C

PERMITTING AGENCY COORDINATION

Telephone Conversation Record

HDR

Project	Memorial Causeway Bridge PD&E	Project No.	07206-014-096
Time	10:00 AM	Date	23 & 25 January, 1996
Call to	John W. Winslow 305-536-5621 (Phone No.)	Call from	George Eliason 282-2358 (Phone No.)

Discussion, Agreement and/or Action

Two Conversations were held, one between Mr. Winslow and G. Eliason (1/23) and the second between Winslow and Ian McCartney (USCG), G. Eliason and L. Weatherby (1/25).

Mr. Winslow is the Chief of the Bridge Section, Aids to Navigation and Waterways Management Branch, Seventh Coast Guard District, by the direction of the District Commander. Our calls were to inquire about the likely role the Coast Guard would have in the development of the environmental document being prepared by HDR for the City of Clearwater. I gave him a brief overview of the project, specifically that it is a bridge replacement on new alignment which may require channel relocation. Further, the document would be a SEIR. Mr. Winslow said that if federal funds were being sought and FHWA was the lead agency, then USCG would be a cooperating agency.

"However, since this is a state document, the USCG would become the lead agency and require an Environmental Assessment, consistent with the NEPA process, and would require USCG review and signature. If channel relocation is not the preferred alternative, a categorical exclusion might be sufficient."

Based on our telephone conversations, it appears that the project will require the full NEPA process regardless of whether or not federal funds are expected. Therefore, it may be advantageous to coordinate with FHWA (thereby making them the lead agency) to ensure that if federal funds are considered at a later date, the environmental documentation will already be in place.

We discussed **navigational clearance issues** in the second phone conversation. They don't expect a 65' vertical clearance to be a problem, and "typically their guide clearances aren't challenged", but they recommended that we either do a survey or consult with affected navigational interests to avoid problems later in the study process. They said that in the case of the Clearwater Pass bridge, the issue didn't really come to a head until the public hearing was held; earlier on, they had issued a Public Notice regarding the proposed navigational clearances. "The Public Notice alone doesn't guarantee anything."

cc: Richard Baier, City of Clearwater
Kirk Bogen, FDOT

phone1.doc

Telephone Conversation Record

HDR

Project	Memorial Causeway Bridge	Project No.	
Time	11:30 AM	Date	6/12/96
Call to	John Winslow	305-536-5621 (Phone No.)	
Call from	George Eliason	813-282-2358 (Phone No.)	

Discussion, Agreement and/or Action

Mr. Winslow was returning my call from Monday June 10. The following are items discussed:

1. Mr. Walt Paskowsky has been assigned the Memorial Causeway project. he will be the main point of contact for future project coordination. I said we would begin sending all relevant letters, memos, minutes, etc. to him to keep him abreast of the progress of the project.

2. Mr. Winslow noted that Ross Yacht Sales, Inc. (Mr. Courtney Ross, President) sent him a letter regarding bridge clearance issues. A copy of that letter was faxed to me and is attached.

3. I asked if a 3 month boat height survey which began in June would be sufficient to address the number of high masted vessels passing through the bridge. Mr. Winslow expressed concern that that the peak season (January through April) would not be covered. I asked if 3 months of survey data for the causeway could be extrapolated using detailed (1 year) data collected for the Clearwater Pass bridge. Mr. Winslow felt this could be acceptable. Mr. Paskowsky had some reservations.

An additional source of data are the bridge tender logs. This would show which vessels passing through the Clearwater Pass also passed through the Memorial Causeway, on the same day and within close proximity of time. This would aid in the extrapolation of the boat census data currently being compiled.

4. I asked about the condition of the northern passage to the gulf near Anclote Key (LIG folks indicated that this route was not acceptable due to shoaling). Mr. Winslow's response corroborated this situation. Passage to the gulf to the north is not reliable for larger boats with deep drafts.

5. I asked about bridge related boating accidents and sources of information. The Marine Patrol would have information on recreational craft whereas the coast guard would have information on commercial vessels. The contact in the coast guard for such information is the Chief of Investigations (813) 228-2195.

6. I asked about channel distances and approach angles to the bridge. Mr. Winslow indicated the ACOE sets these criteria. The two main concerns are how straight it is and what is the current relative to the crossing. A document which could be consulted for additional information is titled "Design and Layout of Shallow Draft Waterways", publication number EM1110-2-1611. This is an ACOE manual.

Telephone Conversation Record

HDR

7. I asked if a sample of an EA consistent with the CG requirements could be provided. Mr. Winslow said a letter had been sent to the city with a set of guidelines. He would send me a copy.

8. Now that the Coast Guard is going to be the lead agency, a letter to this effect should be sent to them.

Southwest Florida Water Management District

PRE-APPLICATION MEETING NOTES

Date: August 28, 1996

Project Name: Memorial Causeway Bridge

Attendees:
Alba Mas
Rick Perry
Alberto Martinez
George Eliason
Jeannie

29-15-16.hdr

The following is the District's understanding of the meeting. Please do not send copies of minutes. If you have any questions or need clarifications, please feel free to contact us at (813) 985-7481.

- Alternative C4WS...They are now considering relocating the existing boat channel since they have to use a high level bridge and the peak cannot be reached at the location of the existing channel. The reason for this is that they don't want to relocate the approach to the bridge (they want to continue approaching from Cleveland).
- Another possibility is a different approach to the bridge from Court Street.
- Alberto told them that the submerged lands people would probably not allow the relocation of the channel. We have been delegated responsibility for asking submerged land questions but they final approval is by the Board of Regents for FDEP.
- Even if they got over that hurdle....there is the issue of the severe impacts to the seagrasses.
- This would go to our Governing Board for approval since they are proposing 5 acres of impacts to seagrasses and mitigation for those areas have not been successful.
- This would also not be in kind replacement of the bridge and water quality treatment will be required.
- Alberto encouraged them to talk to Harry Michaels at FDEP Tampa office about submerged lands.
- They want to remove a portion of the causeway to improve the flushing of the harbor. They will have to prove to us that there is a benefit.
- He wanted to know if placing culverts across the causeway to encourage flushing of the eatuarine areas could be used to offset wetland impacts (in lieu of mitigation)...they would have to prove some tremendous benefit in order to use it for compensation.
- If they cannot replace seagrass beds they wanted to know what else we would accept....we had not suggestions since seagrasses are so unique...that is why seagrasses are protected.

Meeting Minutes: Army Corps of Engineers - Memorial Causeway Bridge

HDR

Date 24 September, 1996

Subject Memorial Causeway Bridge: Alternatives

Attendees: Joe Bacheler, ACOE
Bill Pearce, FDOT
George Eliason, HDR
Jeannie Barbar, HDR

- An overview of the project was given by Eliason, including a description of the three primary corridors which were evaluated, the public process, and the description of the existing alignment alternatives.
- Alternative C4WS was discussed in detail as to why the alternative was created (Minimal impact to mainland) and the expected impacts (amount of seagrass and mangroves, channel relocation, removal of causeway). In addition, the Cleveland Street Extension was discussed as to how it may alleviate some of the concerns regarding the Pierce Boulevard alternatives' economic impacts on downtown.
- Eliason asked Bacheler specifically about any concerns he may have regarding the channel relocation associated with alternative C4WS.
- Bacheler responded that he was not in the position to determine whether or not it could be done. However, Bacheler had spoken with ACOE engineers in the Construction Operation Division in the Jacksonville office and that he did not receive positive feedback from them.
- Bacheler also stated several of the severe issues which exist with relocating the channel to this extent:

  1) major impacts to sea grass beds and shallow water habitats
  2) fresh dredging in a very shallow area which will result in an increase of the schedule and costs of maintaining the channel.
  3) the proposed channel falls outside of the Corps 800 foot right-of-way, and would require Congress to reauthorize the relocation of the Intracoastal Waterway Channel. This could add years to the project.
  4) the lands outside of the Corps' right-of-way are state submerged lands

- Pearce agreed with Bacheler's statements and added that he does not believe DOT would be as willing to provide state funding to a project with these types of impacts. However, if the City is planning on using local funding sources he does not think it would be a problem with DOT.
- Bacheler suggested that we write to Don Beasley in the Construction Operations Division in Jacksonville and explain the alternative to him and get his feedback. He felt that Beasley would be able to comment on the viability of the C4WS alternative.

cc: Rich Baier, City of Clearwater
Larry Weatherby, HDR
Kirk Bogen, FDOT
Tom Thomson, Michael Baker, Jr.
Fred Gottemoeller

U.S. Department of Transportation
United States Coast Guard

Commander
Seventh Coast Guard District

Brickell Plaza Federal Bldg
909 S.E. First Avenue
Miami, FL 33131
Staff Symbol: (oap)
Ph: (305) 536-5621

16593/2420
Serial: 0003

Send copy to Larry W.

Mr. Rich Baier, P.E.
City Engineer
Post Office Box 4748
Clearwater, FL 34618-4748

Dear Mr. Baier:

This is in response to your letter of March 18, 1996, requesting a change in the operating schedule of the Clearwater Memorial Causeway(SR60) Drawbridge across the Gulf Intracoastal Waterway, mile 136.0, at Clearwater, Florida.

We have completed our review of the highway traffic and bridge opening data which was provided in support of your request to change the opening schedule. This review included a 2 day onsite observation of traffic and waterway conditions at the bridge on September 21 and 22, 1996. We noted that you have pre-empted the traffic signal at the east end of the bridge to facilitate traffic dispersal after a bridge opening. This is a recommended remedy to reduce land traffic congestion after a drawbridge opening which appears to be effective.

The bridge presently opens on signal; except that, from 9:00am to 6:00pm, the draw need be opened only on the hour, 20 minutes after the hour, and 40 minutes past the hour. From 2:00pm to 6:00pm, Saturdays, Sundays and Federal holidays, the draw need be opened only on the hour and half hour.

These Federal regulations, found at 33 CFR 117.287 (j), were implemented in 1981 after extensive public review and comments from both waterway and roadway users. Apparently, the City and the FDOT were unaware of the existing regulations when the requests for a change in opening schedules were submitted.

A careful analysis of the actual openings showed that under the existing schedule only 5640 openings out of a possible 9607 openings actually occurred during the most recent 12 months. If the schedule were revised to hour and half hour openings year round as you have suggested an additional 930 openings or a total of 6570 openings would be authorized during the same period. Since the number of openings average less than 2 per hour, requiring navigation to wait for hour and half hour openings at all times does not appear to be justified. Federal regulations which will in any way limit the operation of a drawbridge to the detriment of waterway traffic, will not be prescribed in the absence of clearly demonstrated offsetting benefits to traffic across the bridge.

16593/2420
Serial: 0603
OCT 7 199[illegible]

A major impediment to traffic flow on the Causeway appears to be roadway geometry. Unlike the Causeway, the bridge has substandard narrow lanes, no shoulders, and an inadequate median, all of which contribute significantly to sharply reduced highway capacity. Replacement of the bridge with a wider structure is the ultimate solution to the traffic problem. In the meantime, the existing special operating regulations will remain in effect.

If you have any questions about our decision, please contact Mr. Walt Paskowsky at (305) 536-4103.

Sincerely,

J. W. WINSLOW
Chief, Bridge Section
Aids to Navigation
and Waterways Management Branch
Seventh Coast Guard District
By direction of the District Commander

Encl: data
Copy: FDOT, Tampa

RICH BAIER

CLEARWATER CITY ENG.

813-562-4780

813-562-4782 (ASSISTANT)

JAN - 353
FEB - 365
MAR - 539
APR - 627

MAY - 503
JUNE - 442
JULY - 566
AUG - 439

SEPT - 482
OCT - 435
NOV - 483
DEC - 412

14 PD 5640 ACTUAL

18 PD 6570 ½ + hr

DISTRICT 7 TRAFFIC OPERATIONS

NAME OF BRIDGE: SR 60 (MEMORIAL CAUSEWAY) DATES OF STUDY 6/9/95 THRU 6/22/95

AVERAGE DURATION FOR BRIDGE OPENING: 4.0 MIN. SECTION NUMBER 15220 S.R. 60

2532

2915

	DATE	19	20	21	22	6/9	10	11	12	13	14	15	16	17	18		WEEKDAY		HOUR	WEEKEND		HOUR
	DAY	MON	TUE	WED	THU	FRI	SAT	SUN	MON	TUE	WED	THU	FRI	SAT	SUN	TOTAL	TOTAL	AVG	AVG	TOTAL	AVG	AVG
1/0	08:15	422	531	470	488	• 430	287	233	433	428	482	509	447	300	216	5676	4640	464		1036	259	
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2/2	09:00	493	590	• 566	585	503	389	: 379	• 428	513	506	579	537	411	309	6788	5300	530	499	1488	372	313
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1/2	13:30	589	661	• 634	• 642	• 642	708	• 713	592	605	611	596	• 620	• 670	685	8968	6192	619	2504	2776	694	2804
3/3	13:45	625	652	558	619	705	• 522	• 668	618	• 571	525	620	• 575	681	• 557	8496	6068	607		2428	607	
3/0	14:00	615	677	643	615	730	875	803	571	584	595	628	706	651	853	9546	6364	636	626	3182	796	701
1/4	14:15	652	• 672	• 588	576	• 632	• 729	• 710	• 517	• 629	• 593	• 611	• 683	• 675	• 623	8890	6153	615		2737	684	
1/0	14:30	652	• 665	• 577	640	• 671	719	678	613	• 705	• 564	• 651	• 626	682	694	9137	6364	636	2536	2773	693	2856
1/4	14:45	• 582	722	609	679	• 487	• 729	• 752	543	705	• 461	700	• 573	780	: 715	9037	6061	606		2976	744	
2/0	15:00	641	622	764	602	780	744	756	636	599	787	605	754	647	791	9728	6790	679	634	2938	735	714
2/4	15:15	• 626	618	665	• 645	652	• 763	• 616	629	586	620	618	623	• 798	• 628	9087	6282	628		2805	701	
2/0	15:30	663	647	681	647	639	677	960	584	562	620	• 627	668	682	790	9447	6338	634	2568	3109	777	2936
3/3	15:45	625	562	719	632	649	• 799	• 597	• 646	620	689	• 506	654	725	• 708	9131	6302	630		2829	707	
3/0	16:00	663	706	685	640	678	762	793	637	591	686	781	701	697	747	9767	6768	677	642	2999	750	734

[redacted] = WEEKEND TOTAL

2532 ÷ 2 = 1266

FACTORS

UNDIVIDED SUBURBAN ARTERIAL .8

10.5 LANES, 2' SHOULDERS .82

5% TRUCKS/TRAILERS .95

REGULAR USE FACTORS .95

1 OPENING P/HR AT 4.5 MINS = 1757

PEAK HR .92 ÷ 1266 = 1376

20 OPENINGS P/HR

V/C = 1376/1757 × 2 × .8 × .82 × .95 × .75

V/C = 1376/2080

V/C = .66 = LOS D

DISTRICT 7 TRAFFIC OPERATIONS

NAME OF BRIDGE: SR 60 (MEMORIAL CAUSEWAY) DATES OF STUDY 6/9/95 THRU 6/22/95

AVERAGE DURATION FOR BRIDGE OPENING: 4.0 MIN. SECTION NUMBER 15220 S.R. 60

	DATE DAY	19 MON	20 TUE	21 WED	22 THU	6/9 FRI	10 SAT	11 SUN	12 MON	13 TUE	14 WED	15 THU	16 FRI	17 SAT	18 SUN	TOTAL	WEEKDAY TOTAL	AVG	HOUR AVG	WEEKEND TOTAL	AVG	HOUR AVG
/4	16:15	685	674	694	• 662	688	• 663	• 684	609	623	640	• 615	686	• 607	• 684	9214	6576	658		2638	660	
/0	16:30	• 522	• 574	571	• 632	• 483	689	740	• 452	• 506	• 467	• 549	• 637	550	744	8116	5393	539	2592	2723	681	2800
/3	16:45	• 625	710	824	643	825	724	• 568	• 570	572	842	• 710	694	• 784	• 760	9851	7015	702		2836	709	
/0	17:00	765	720	735	677	667	790	765	778	624	630	• 665	681	701	742	9940	6942	694	648	2998	750	700
/4	17:15	632	• 738	,662	659	652	• 738	• 679	634	• 625	625	659	• 673	• 673	• 655	9304	6559	656		2745	686	
/0	17:30	590	697	679	• 479	704	661	609	584	631	627	626	653	749	664	8953	6270	627	2536	2683	671	2681
/3	17:45	587	675	• 670	719	• 533	• 718	• 644	574	612	606	636	• 563	• 606	705	8848	6175	618		2673	668	
/0	18:00	594	665	637	634	788	694	615	553	560	553	657	696	699	633	8978	6337	634	634	2641	660	671
/5	18:15	• 523	607	692	597	• 600	: 463	• 609	498	• 525	602	565	• 680	• 650	• 623	8234	5889	589		2345	586	
/2	18:30	539	574	613	594	634	• 766	617	505	523	• 571	533	654	• 605	637	8365	5740	574	2236	2625	656	2456
/3	18:45	471	• 496	• 480	• 417	• 640	746	• 488	• 419	• 373	• 414	415	618	• 463	• 515	6955	4743	474		2212	553	
/2	19:00	• 497	640	651	664	625	640	645	470	653	651	592	• 532	• 686	• 668	8614	5975	598	559	2639	660	614
/1	19:15	432	• 547	560	464	604	689	559	463	522	536	582	614	• 527	715	7814	5324	532		2490	623	
/2	19:30	426	488	• 505	514	640	• 613	512	406	456	441	470	• 528	• 524	607	7130	4874	487	1940	2256	564	2284
/1	19:45	430	486	503	451	546	651	517	382	491	461	449	592	• 528	541	7028	4791	479		2237	559	
/1	20:00	331	514	495	462	• 479	646	474	• 295	395	499	444	484	• 525	514	6557	4398	440	485	2159	540	571
/3	20:15	501	499	• 488	• 399	589	• 652	509	473	423	458	446	• 523	552	: 437	6949	4799	480		2150	538	
/1	20:30	407	488	496	591	508	• 586	433	388	436	481	514	475	488	630	6921	4784	478		2137	534	
/1	20:45	480	494	458	489	• 576	• 577	492	399	481	480	463	488	505	557	6939	4808	481		2131	533	
/3	21:00	341	584	522	• 469	570	• 605	458	369	491	• 477	458	499	• 527	• 498	6868	4780	478	479	2088	522	532
/1	21:15	422	512	517	486	562	621	• 464	407	• 418	478	481	• 456	568	670	7062	4739	474		2323	581	
/1	21:30	383	524	249	477	596	575	• 468	387	• 397	472	500	• 645	534	490	6697	4630	463		2067	517	
/3	21:45	330	499	• 418	469	504	• 522	• 379	336	• 500	406	441	456	• 442	510	6212	4359	436		1853	463	
/1	22:00	320	448	387	394	486	• 720	374	355	360	380	404	573	619	501	6321	4107	411	446	2214	554	529
/1	22:15	305	417	393	432	545	• 545	342	267	356	398	403	561	• 464	409	5837	4077	408		1760	440	
/1	22:30	270	402	372	369	523	599	356	257	359	327	366	559	294	433	5486	3804	380		1682	421	
/1	22:45	241	347	317	361	• 499	400	400	200	297	288	369	527	• 499	343	5088	3446	345		1642	411	
/1	23:00	232	311	314	308	• 420	558	303	191	324	304	306	535	698	311	5115	3245	325	364	1870	468	435
/1	23:15	237	299	293	253	452	336	260	185	276	300	296	462	538	294	4481	3053	305		1428	357	
/1	23:30	• 213	• 278	• 162	• 234	450	433	• 246	• 208	257	285	234	• 529	468	• 250	4247	2850	285		1397	349	
/1	23:45	194	280	245	291	410	467	237	168	• 210	224	• 264	466	447	248	4151	2752	275		1399	350	
/1	24:00	183	201	225	220	368	391	236	137	200	• 269	215	426	446	218	3735	2444	244	277	1291	323	345

a = WEEKDAY TOTAL : b = WEEKEND TOTAL

87

n/a

2429 ÷ 2 = 1214

UNDIVIDED SUBURBAN ARTERIAL

16.5 LANE 2' SHOULDERS

RECREATIONAL USE

20 OPENINGS P/H AT 4.5 MINS

PEAK HR .92 ÷ 1214 =

factor
.8
.82
.85
1615
1319

C = 1319/1615 × 2 × .8 × .82 × 85 × .95

1319/1710

= .77

LOS E

U.S. Department of Transportation
United States Coast Guard

Commander
Seventh Coast Guard District

Brickell Plaza Federal Bldg
909 S.E. First Avenue
Miami, FL 33131
Staff Symbol: (oan)
Ph: (305) 536-5621

16591/2420
Serial: 0638

OCT 25 1996

Ms. Jeannie Barbar
Environmental Planner
HDR Engineering, Inc.
5100 West Kennedy Blvd.
Tampa, FL 33609-1840

Dear Ms. Barbar

We have your letter requesting our comments regarding a new alternative (CW4S) for the Clearwater Memorial bridge which requires relocation of the Gulf Intracoastal Waterway Channel about 400 meters west through the existing causeway. This is a matter which is properly under the jurisdiction of the Corps of Engineers. We understand that you have also requested their comments and you should be hearing from them soon.

If you have any questions, please contact Mr. Walt Paskowsky at (305) 536-4103.

Sincerely,

J. W. WINSLOW
Chief, Bridge Section
Aids to Navigation
and Waterways Management Branch
Seventh Coast Guard District
By direction of the District Commander

Copy: COE Jax

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P. O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

October 29, 1996

Construction-Operations Division
O&M Technical Support Section

Ms. Jeannie Barbar
Suite 300
5100 W. Kennedy Boulevard
Tampa, Florida 33609-1840

Dear Ms. Barbar:

In response to your letter of September 25, 1996, concerning the Memorial Causeway (S.R. 60) Bridge, Clearwater, FL - Alternative C4WS an engineering and environmental evaluation was undertaken. The concerns that were surfaced are shown below:

a. The existing Federal navigation channel is stable and adjoining area(s) have reached an equilibrium where no maintenance costs have been incurred and no adverse changes are expected. The new bridge design proposes an additional opening through Memorial Causeway and a new channel alignment which will impact the circulation in Clearwater Harbor. If the Federal Channel is relocated, the City of Clearwater will have to agree to fund all costs to relocate the Federal channel and all future maintenance costs in the area of the relocation.

b. A Department of the Army permit will be required. Impacts to endangered species, sea grass beds, cultural resources with appropriate magnetometer surveys, disposal of dredged material to include location and how it is to be contained, and a mitigation plan for any environmental impacts are required as a part of the permit process.

c. If the existing bridge is demolished the piers and pilings would have to be removed to a depth not to interfere with navigation, six feet below the authorized Federal project depth is a minimum.

d. Distances were not indicated on your drawings. The approach to the bridge for the Federal navigation channels must be perpendicular to the bridge and straight for a distance of 1100 feet.

e. Estuary/bay circulation needs to be analyzed. The existing circulation is stable in respect to shoaling and a new opening in the causeway will change the estuary/bay circulation. The change, could change circulation, and adversely impact the estuary's environment and shoaling patterns. Our recommendation is that you should look at minimizing the changes to the existing Federal channel and bridge location.

Future correspondence should be addressed to our Tampa Field Office, Regulatory Division, Attention: Mr. Joe Bacheler, P.O. Box 19247, Tampa, Florida 33686-9247.

Sincerely,

for Richard E. Bonner, P.E.
Deputy District Engineer for
Project Management

To Larry Weatherby, Jeannie Barbara

From George Eliason

Date 6 December, 1996

HDR

Memorandum

Subject Conversation with John Winslow (USCG) at Public Info. Workshop

Talked to Winslow about two items; 4(f) involvement related to the tennis courts and alternative P4S and side channel relocations.

4(f) Involvement and the Tennis Courts:

Winslow indicated that the tennis courts would require a 4(f) statement for any encroachments. The fact that the same entity (City of Clearwater) owned the courts and was proposing the project did not preempt a taking of 4(f) land. If the land use was changed prior to submitting the document (i.e. land use changed for reasons other than the bridge) then 4(f) would not be required. This is not, in mind, a practicable approach. The EA will have to clearly show that there is no practicable alternative which avoids the courts and address the significance (or lack of) of the courts to justify a taking. This needs to be discussed with the upcoming meeting with Ream Wilson (parks and rec.) I told Winslow that there were no alternatives which avoid the courts, since they all included the Cleveland Street connection. Winslow indicated that this is a unique situation and he would talk to the guys in Washington about it. Follow-up with Winslow is needed.

P4S Side Channel Relocation:

P4S will likely require a relocation of the channel which parallels the south side of the causeway due to clearance issues. The greatest concern for channel relocation are sea grass beds which Winslow indicated should be avoided at all costs. We will need to look at alignments which could connect the ICWW to the side channel and which do not impact sea grass beds. I suggest that if this alternative is viable, we prepare some documentation and request comments from the USCG and the ACOE. Environmental impacts, dredging costs, and channel maintenance could be significant constraints on this alternative.

Telephone Conversation Record

HDR

Project	Memorial Causeway Bridge PD&E Study	Project No.	07206-014-096
Time	1:30 p.m.	Date	12/12/96
Call to	John Winslow Walt Paskowsky	United States Coast Guard	
Phone No.	(305) 536-5621		
Call from	George Eliason, Jeannie Barbar, Larry Weatherby	HDR	
Phone No.	(813)282-2358		

Discussion, Agreement and/or Action

Conference call to Mr. Winslow and Mr. Paskowsky to discuss the height alternatives for the proposed bridge.

1. George asked Mr. Winslow if he has a recommendation for the bridge height (65 ft. vs. 74 ft.) given the boat height survey information and public involvement obtained to date. Mr. Winslow responded that they will not make the decision between the two heights. He said their position is to give guidance to determine the height of the new bridge. For the ICWW, the height guidance from the Coast Guard is 65 ft. However, Mr. Winslow said that there is a strong indication that the proposed bridge should have the same height as the Clearwater Pass Bridge. This is primarily due to the unique existing situation of large boats entering the intracoastal waterway through the Clearwater Pass Bridge (74 ft.) from the Gulf and traveling northward to businesses and moorings north of the Memorial Causeway Bridge. Mr. Winslow also suggested that because of this situation the 65 ft. guide clearance may not be sufficient to meet the navigational needs in this area.

2. George asked Mr. Winslow and Mr. Paskowsky about the process we need to go through to get further input on the bridge's height. Mr. Winslow said that we can continue with the project and recommend the 65 ft. bridge. However when a permit is requested, it is published for public comment. If public concern is significant, then a hearing may be requested to address the issue and determine the reasonable needs of navigation.

3. Larry asked Mr. Winslow and Mr. Paskowsky how much longer we should continue the boat height survey. Mr. Winslow said that if the City wants to propose a bridge lower than 74 feet, then data should be collected at least through the end of March 1997. The survey can be discontinued immediately if the City decides to propose a 74 foot clearance bridge.

4. Mr. Winslow also strongly recommended that for purposes of estimating costs and impacts we should consider a 74 foot clearance bridge.

5. George told Mr. Winslow and Mr. Paskowsky that we would be sending them more maps and graphics regarding the relocation of the secondary channel for the P4 South alternative. He also informed them that there may be opportunities to relocate this secondary channel without any further dredging, if a 6 ft. depth is sufficient. Mr. Winslow commented that we should contact the Army Corps regarding this matter, because they would have the existing data on the channel and would be the agency to determine the depth of the relocated channel.

cc: Rich Baier, P.E.
Gary Johnson, P.E.
Kirk Bogen, P.E., FDOT
Tom Thomson, P.E.
Fred Gottemoeller, P.E.
Walt Paskowsky, USCG
John Winslow, USCG

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P. O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

Construction-Operations Division
O&M Technical Support Section

Ms. Jeannie Barbar
Suite 300
5100 W. Kennedy Boulevard
Tampa, Florida 33609-1840

Dear Ms. Barbar:

This letter is in response to your letter of December 20, 1996, concerning the Memorial Causeway (S.R. 60) Bridge, Clearwater, FL - Alternative P4S.

The portion of the Existing Secondary Channel that you show as having to be relocated is not a Federal Waterway. I have enclosed an examination survey drawing that depicts the Federal Waterways in that area. This channel is a local channel either constructed by state or county.

This letter is not an approval of the relocation. However, we do not have a vested interest in that portion of the secondary channel being relocated. We do maintain a vested interest in the Intracoastal Waterway. A Department of the Army Permit will be required.

Future correspondence should be addressed to our Tampa Field Office, Regulatory Division, Attention: Mr. Joe Bacheler, P.O. Box 19247, Tampa, Florida 33686-9247.

Sincerely,

Girlamo DiChiara
Chief, Construction-Operations Division

Enclosure

U.S. Department of Transportation
United States Coast Guard

Commander
Seventh Coast Guard District

Brickell Plaza Federal Bldg
909 S.E. First Avenue
Miami, FL 33131
Staff Symbol: (oan)
Ph: (305) 536-5621

16591/2420
Serial: 0825

FEB 21 1997

Ms. Jeannie Barbar
Environmental Planner
HDR Engineering, Inc.
5100 West Kennedy Blvd.
Tampa, FL 33609-1840

Dear Ms. Barbar

This responds to your letter of January 31, 1997 concerning the relocation of the secondary channel for alternative P4S for the Clearwater Memorial bridge across the Gulf Intracoastal Waterway at Clearwater.

The U.S. Army Corps of Engineers has indicated that the existing secondary channel which provides direct access from the Gulf Intracoastal Waterway to the Clearwater Marina is not a Federal waterway. It is a local channel either constructed by the state or county. Navigational charts indicate a depth of 7 feet should be available at mean low water throughout the waterway, although there is no known authorized depth or width. We would recommend a bottom survey be conducted prior to any decision on relocating the channel.

The Coast Guard has marked the existing channel with 5 daybeacons due to continuing heavy use by navigation. If it is ultimately decided to relocate the channel, the Coast Guard may be agreeable to mark the new channel, however, further study would be required prior to making a decision. Relocation of the aids would require funding by the sponsoring agency. Our records indicate Pinellas County Public Works Department((813) 464-3251) may have jurisdiction over this channel.

There are no established Guide Clearances for this secondary channel. We would recommend a boat survey be conducted to determine clearance requirements for vessels that utilize this waterway. The Clearwater Marina may also be able to provide vessel use information.

16591/2420
Serial: 0825

The decision to eliminate or reduce the use of this channel by placement of a restrictive bridge across the waterway can only be made during the permitting process after soliciting for comments within our Public Notice. We would, therefore, encourage discussion with marine interests that utilize the channel to determine vessel clearance requirements prior to selection of a preferred alternative and submission of a permit application. This would help avoid unexpected delays due to navigational issues. As I indicated, the placement of Federal aids along this non-federal channel is indicative of potentially heavy use by mariners. It is important to determine early in the decision process whether other maintained channels would offer sufficient opportunity for vessels to transit the area without unreasonably impacting navigation.

Hopefully, our response to your questions will be helpful. Please note that it is the responsibility of the applicant to design the bridge so that it provides for the reasonable needs of navigation. The Coast Guard cannot suggest a specific type of bridge, an alignment or specify clearances. You are, therefore, encouraged to consult directly with waterway users and to collect necessary data so that the proposed bridge will provide for the reasonable needs of navigation. Once we receive a bridge permit application and solicit for public comment, we will determine whether the selected alignment alternative and specific bridge plans will meet the reasonable needs of navigation.

If you have any additional questions, please contact Mr. Walt Paskowsky at (305) 536-4103.

Sincerely,

J. W. WINSLOW
Chief, Bridge Section
Aids to Navigation
and Waterways Management Branch
Seventh Coast Guard District
By direction of the District Commander

Copy: COE Jax

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Southeast Regional Office
9721 Executive Center Drive North
St. Petersburg, Florida 33702

May 21, 1997

Mr. Todd Mecklenborg
Environmental Specialist
Florida Department of Transportation
PD&E Department, MS 7-500
11201 North McKinley Drive
Tampa, Florida 33612-6403

Dear Mr. Mecklenborg:

Subject: Wildlife and Habitat Report
State Project Number: 15220-1599
Work Program Item Number: 7117181
Memorial Causeway (State Road 60)
Pinellas County

This is in response to your letter dated April 21, 1997, requesting concurrence with a no-effect determination regarding impacts on Federally protected threatened or endangered species. The National Marine Fisheries Service (NMFS), in the Southeast Region, divides the consultation responsibilities of the Endangered Species Act and the coordination responsibilities of the Fish and Wildlife Coordination Act between the Protected Species Management Branch and the Habitat Conservation Division, respectively. We have provided a copy of the subject report to the Protected Species Management Branch for their review in association with your request. However, at this time, we would like to take the opportunity to provide you with our comments regarding the habitats and the potential impacts to living marine resources for which we are responsible identified in the subject report.

Seagrasses, mangroves, salt marsh, and sandy bay bottom have been identified within the project area boundaries. We provided comments and recommendations by letter dated May 1, 1996, pertaining to the protection and conservation of these aquatic habitats. We strongly urged that impacts to seagrasses be avoided due to the difficulty in compensating losses of this valuable habitat. Further, we recommended that impacts to other aquatic habitats should be avoided to the maximum extent possible, but suitable on-site and off-site mitigation opportunities are likely to exist for these impacts.

Five alternatives are presented in the report. No impacts to seagrasses or mangroves are identified with alternative P4A. Three other alternatives have seagrass impacts of about 100-square-feet with impacts to mangroves ranging from zero to 282-square-feet. One alternative (C4WS) would involve impacts to over 12 acres of seagrasses and 1.6 acres of mangroves; we recommend that this alternative not be pursued. While a preferred alternative has not yet been selected, several entities have identified alternative P4A as their preferred option. Utilizing the information available at this time, we also recommend alternative P4A based on the minimal impact this option would appear to have on living marine resources. However, be advised that the NMFS will be involved in the public interest review process for any Federal permits required for this activity and we may have additional comments or recommendations to provide when detailed project plans are developed for the regulatory agencies.

We appreciate the opportunity to provide you with our comments. Please direct related comments, questions or correspondence to Mr. David N. Dale of our Panama City Branch Office staff in St. Petersburg, Florida. He may be contacted at 813/570-5317 or at the letterhead address above.

Sincerely,

W. Mark Thompson for

Andreas Mager, Jr.
Assistant Regional Director
Habitat Conservation Division

cc:
F/SEO13
F/SEO2
F/SEO23-St. Pete

APPENDIX D

WATER QUALITY IMPACT EVALUATION

WQIE CHECK LIST

Project Name: SR 60 Memorial Causeway Bridge Replacement County: Pinellas
State Project Number: 15220-1599 WPI Number: 7117181
Federal Aid Project No: BRF - 1456 (9)
Short project description: Replacement of the existing Memorial Causeway (SR 60) basqule bridge with a fixed span high level (74 ft navigation clearance) bridge.

PART 1: DETERMINATION OF WQIE SCOPE

Does project increase impermeable surface area? [X] Yes, slightly [ ] No
Does project alter the drainage system? [ ] Yes [X] No
If the answer to both questions is no, complete the WQIE by checking Box A in Part 4.
Do environmental regulatory requirements apply? [X] Yes [ ] No
If no, proceed to Part 4 and check Box B.

PART 2: PROJECT CHARACTERISTICS

20-year design ADT: 40,000 Expected speed limit: 72.4 (45mph) km/hr
Drainage area: 1.5 hectares 90 % Impervious 5 % Pervious
Land Use: 0 % Residential 95 % Commercial 0 % Industrial
0 % Agricultural 3 % Wetlands 2 % Other Natural
Potential large sources of pollution (identify): None

Groundwater receptor (name of aquifer or N/A): Floridan
Designated well head protection area: [ ] Yes [X] No Name:
Sole source aquifer: [ ] Yes [X] No Name:
Groundwater recharge mechanism: Infiltration

(Notify District Drainage Engineer if karst conditions expected)
Surface water receptor (name or N/A): Clearwater Harbor
Classification: [ ]I [ ]II [X]III [ ]IV [ ]V
Special designation (check all that apply):
[ ] ONRW [X]OFW [X]Aquatic Preserve [ ]Wild & Scenic River
[ ]Special water [ ]SWIM Area [ ]Local Comp Plan [ ]MS4 Area
[ ]Other (specify):
Conceptual storm water conveyances & system (check all that apply):
[X]Swales [X]Curb & Gutter [X]Scuppers [X]Pipe [ ]French Drains
[ ]Retention/Detention Ponds [ ]Other

PART 3: ENVIRONMENTAL REGULATORY REQUIREMENTS

Regulatory Agency (check all that apply)	Reference citation for regulatory criteria **(attach copy of pertinent pages)**	Most stringent criteria (check all that apply)
USEPA [X]	NPDES, CleanWater Act 1972	[X]
FDEP [ ]		[ ]
WMD [ ] (specify)		[ ]
OTHER [ ] (specify)		[ ]

Proceed to Part 4 and check Box C

PART 4: WQIE DOCUMENTATION

A. [ ] Water Quality is not an issue

B. [ ] No regulatory requirements apply to water quality issues. (Document by checking the "none" box for water quality in Section 6.C.3 of Form 650-040-02 or Section 5.C.3 of Form 650-040-09.)

*C. [X] Regulatory requirements apply to water quality issues. Water quality issues will be mitigated through compliance with the quantity design requirements placed by USEPA, an authorized regulatory agency. (Document by checking the "none" box for water quality in Section 6.C.3 of Form 650-040-02 or Section 5.C.3 of Form 650-040-09.)

Evaluator Name (print): George Eliason

Office: HDR Engineering, Inc., Suite 300, 5100 West Kennedy Blvd., Tampa, Fl 33609

Signature: George T. Eliason Date: 3-3-98

Certificate # 116

* No lanes or additional capacity will be added and discharge is into Clearwater Harbor, therefore state regulatory requirements for water quality or quantity are not warranted.

APPENDIX E
CORRESPONDENCE RECEIVED

EXHIBIT E 1

STATE OF FLORIDA
DEPARTMENT OF COMMUNITY AFFAIRS

EMERGENCY MANAGEMENT • HOUSING AND COMMUNITY DEVELOPMENT • RESOURCE PLANNING AND MANAGEMENT

LAWTON CHILES
Governor

May 13,1996

JAMES F. MURLEY
Secretary

ENGINEERING ADMINISTRATION

☒ RJB	☐ TRA	☐ ENVI	☐ WPC
☐ GAJ	☐ EWB	☐	☐ MP
☐ TCJ	☐ RCS	☐ CGH	☐ NS
☐ GLB	☐ CRF	☐ JWR	☐ AE
☐ WJS	☐	☐ MJB	☐ NP
☐ RDB	☐ RJM	☐ RRP	☐ DG

COPIES:
FILE:

Mr. Richard Baier
City of Clearwater
Engineering Administration
Post Office Box 4748
Clearwater, Florida 34618-4748

RE: Highway Planning and Construction - Advance Notification - State Road 60 Memorial Causeway Bridge Replacement - Clearwater, Pinellas County, Florida
SAI: FL9603250178C

Dear Mr. Baier:

The Florida State Clearinghouse, pursuant to Presidential Executive Order 12372, Gubernatorial Executive Order 95-359, the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended, and the National Environmental Policy Act, 42 U.S.C. §§ 4321, 4331-4335, 4341-4347, as amended, has coordinated a review of the above-referenced project.

The Department of State (DOS) indicates that the applicant will conduct a cultural resources survey to identify any significant archaeological and/or historic sites which may be located within the project area, and the applicant will provide the DOS with the results of the survey. The applicant is also required to consult with the DOS regarding the avoidance or mitigation of any impacts to sites identified in the survey. Please refer to the enclosed DOS comments.

The Southwest Florida Water Management District (SWFWMD) has expressed an interest in coordinating with the applicant on wetland impacts and mitigation projects associated with Tampa Bay. Therefore, the applicant is encouraged to contact SWFWMD to discuss opportunities for cooperation. Please refer to the enclosed SWFWMD comments.

The Game and Fresh Water Fish Commission (GFWFC) notes that several endangered, threatened or species of special concern occur, or are likely to occur, within the project area. The listed species include the West Indian manatee, loggerhead sea turtle, least tern, brown pelican, snowy egret, reddish egret, little blue heron, tricolored heron, white ibis, and common snook. Therefore, the GFWFC recommends that the project design include the following considerations: 1) the protection of the wading bird rookery from construction-related activities, 2) the removal of portions of the existing causeway if an extended fixed-span bridge of greater length is proposed and assessment of the potential for improvement of hydraulic conditions and water quality in Clearwater Harbor, 3) avoid impacts to habitat areas during wetland mitigation and stormwater management efforts, and 4) avoid impacts to seagrass beds, mangrove systems, and habitat areas during channel realignment. Please refer to the enclosed GFWFC comments.

The Department of Environmental Protection (DEP) recommends actions to minimize impacts to the Outstanding Florida Waters of the Pinellas County Aquatic Preserve, located in Clearwater Harbor. The bridge design should incorporate a construction methodology which minimizes construction and wetland impacts to seagrass beds and hard bottom communities. In the event the proposed bridge design results in excess property, two options could be considered: 1) removing the unused section of the causeway to allow greater tidal flushing in Clearwater Harbor, or 2) the creation of a passive park. Also, measures should be taken during demolition and construction to protect the endangered West Indian manatee. The DEP also indicates that permits will be required prior to the start of construction. Sound development practices should be maintained during all construction. Early coordination with DEP's Southwest District office may help to eliminate problems in the permitting process. Please refer to the enclosed DEP comments.

Based on the information contained in the advance notification and the applicant's satisfactory compliance with all conditions stipulated by our reviewing agencies, as enclosed, the state has determined that, at this stage, the above-referenced project is consistent with the Florida Coastal Management Program (FCMP). All subsequent environmental documents prepared for this project must be reviewed to determine the project's continued consistency with the FCMP.

The Department of Community Affairs (Department), pursuant to its role as the state's land planning agency, has reviewed the referenced project for consistency with the relevant local government comprehensive plan. Based on the information contained in the application, the Department has determined that the project is consistent, to the maximum extent feasible, with the applicable comprehensive plan.

If you have any questions regarding this letter, please contact Ms. Keri Akers, Clearinghouse Coordinator, or Ms. Jasmin Raffington, Florida Coastal Management Program, at (904) 922-5438.

Sincerely,

G. Steven Pfeiffer
Assistant Secretary

GSP/cc

Enclosures

cc: George W. Percy, Department of State
Trisha Neasman, Southwest Florida Water Management District
Lindy Broz, Department of Environmental Protection
Bradley J. Hartman, Game and Fresh Water Fish Commission
Leroy Irwin, Department of Transportation

EXHIBIT E 2

FLORIDA DEPARTMENT OF TRANSPORTATION
LAWTON CHILES
GOVERNOR
11201 N. McKINLEY DRIVE - TAMPA, FL 33612-6403 - 1-800-226-7220
PD&E DEPARTMENT MS 7-500
BEN G. WATTS
SECRETARY

April 21, 1997

FWS Log No. 97-071 D The proposed action is not likely to adversely affect resources protected by the Endangered Species Act of 1973, as amended (16 U.S.C 1531 et seq.). This finding fulfills the requirements of the Act.

U.S. Fish and Wildlife Service
6620 Southpoint Drive South, Suite 310
Jacksonville, FL 32216
(904) 232-2580 FAX (904) 232-2404

Don Palmer for 5/21/97
Michael M. Bentzien Date
Assistant Field Supervisor

Ms. Deborah D. Manz
U.S. Fish and Wildlife Service
P.O. Box 19247
Tampa, FL 33686-9247

RE: WPI No. 7117181/SPN 15220-1599
Memorial Causeway (State Road 60) Bridge

Dear Ms. Manz:

The City of Clearwater, in cooperation with the Florida Department of Transportation and the United States Coast Guard, is proposing the replacement of the Memorial Causeway (SR 60) bascule bridge with a four-lane, high-level fixed-span bridge. The viable alternatives under consideration require a shift in alignment for the bridge and approaches with one alternative on new alignment. The City Commission has recommended Alternative P4A as the preferred alternative to be presented at the public hearing. Enclosed is a copy of the Wildlife and Habitat Report for your agency's review and concurrence.

This proposed project has been evaluated for impacts on federally protected threatened and endangered species. Based on the results of the literature review and field surveys conducted, the Department has concluded that no federally listed threatened or endangered species will be affected by the proposed improvements providing the special provisions for the protection of manatees and sea turtles are implemented during construction. Furthermore, the proposed project is not located in an area designated as Critical Habitat by the U.S. Department of Interior. Therefore, the Department on behalf of the United States Coast Guard and the City of Clearwater, has determined that the proposed actions will have "No Effect" on any federally protected threatened or endangered species.

If your office concurs with this determination, please respond to the Department in writing at your earliest convenience. If your agency would like a site review or any additional information, please feel free to call me at (813) 975-6457. Thank you for a prompt response on this issue.

Sincerely,

Todd Mecklenborg
Environmental Specialist

cc: Kirk Bogen Rick Adair

RECEIVED APR 27 1997

RECYCLED PAPER

Exhibit E3. Manatee and Sea Turtle Watch Program

To minimize the potential impacts of bridge demolition and 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.

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 Department of Environmental Protection (FDEP) Office 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 blasting, dredging, or construction watercraft activity, tide tables for blasting events indicating slack tides; 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, demolition subcontractors, FDOT, USFWS, FDEP and other interested parties, such as the United States 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, demolition subcontractors and primary observer will present the protocol and logistics of bridge-related construction activities and the outline specified in condition No. 1.

3. During any blasting event, the manatee/sea turtle watch will consist of a minimum of six observers, one chief observer and five additional observers. In addition to these observers, there will be one MWP coordinator on-site to supervise the watch. Three of the six observers shall have previous experience in observing/spotting manatees and sea turtles and should be documented in the qualifications submitted in Condition #1. One of these observers shall have previous aerial survey experience and shall be the observer conducting the aerial surveys. The four additional observers shall be trained and informed in the methods of surveying and locating manatees and sea turtles. During all other bridge-related construction events. the watch shall consist of at least on observer posted at locations designated by a FDEP manatee specialist.

4. 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.

5. 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.

6. All blasting events will be scheduled within the period of slack tide to allow form optimum observing conditions. The chief observer will make the decision on optimum observing conditions to initiate the survey for each blast event.

7. A continuous aerial survey will be conducted by helicopter one hour prior to each blasting event in the vicinity of the blast site. In the event a helicopter is not available, FDEP and USFWS will be contacted to determine another suitable method of aerial surveying. The aerial survey area and route will be designed in conjunction with a FDEP manatee specialist. After detonation, the aerial survey crew shall make a complete survey of the safety and buffer zones before landing. The aerial survey crew shall either remain on ground stand-by in the survey area or continue surveillance of the waterway until the end of the blast period in case the need for aerial tracking of an injured manatee arises.

8. The additional primary observers will be located in various positions around the blast site. These positions will be situated to provide maximum visibility of the blasting safety zone and will have unobstructed views underneath the existing bridge. The exact observer locations will be approved by FDEP and USFWS prior to each blast. One observer will conduct a sonar survey (e.g. depth finder, fish locator) starting twenty minutes prior to the blast of a 150 feet radius around pier. The primary observers will begin surveying the blast area one hour (60 minutes) prior to the blast event and continue observing for one-half hour (30 minutes) after the blast event.

9. The blasting safety zone will be clearly marked with highly visible buoys. Using the formula for an uncontrolled blast, the radius in feet of the blasting safety zone = $260\ ^{3}/w$, where w= the weight of explosives to be used (TNT equivalent in pounds).

10. All of the observers will be in close communication with the blasting subcontractor in order to halt the blast event. The blast event will be halted if a manatee/sea turtle is spotted within 300 feet of the safety zone or within the safety zone (radius computed above). The blasting event will be immediately halted at the direction of the primary observers. The blast event will not take place until the animal(s) moves away from the area of its own volition. Manatees must not be herded away or harassed into leaving. If the animal(s) is/are not sighted a second time, the event will not resume until 30 minutes after the initial sighting. (If manatees are to be guided out of the danger zone, it will be done through an established protocol developed by the USFWS).

11. 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 FDEP. Corrections to the MWP will be made prior to the next event.

12. If an injured or dead manatee/sea turtle is sighted during construction, an observer will contact the Florida Marine Patrol St. Petersburg office at (813) 893-2221. 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. The foregoing telephone numbers shall be posted at all on-site telephones.

13. If an injured or dead manatee 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 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 FDEP 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.

14. 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. Work boats 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.

15. 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 which 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 fee animals which may become trapped in silt or turbidity barriers.

16. Construction debris shall not be discarded into the water.

17. Signs will be posted on-site warning of the presence of manatees/sea turtles, their endangered status, and precautions needed.

18. Within two weeks (14 days) after completion of all bridge-related construction , the chief observer will submit a report to the USFWS and FDEP

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.

19. 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.

EXHIBIT E4

FLORIDA DEPARTMENT OF STATE
Office of the Secretary
Office of International Relations
Division of Administrative Services
Division of Corporations
Division of Cultural Affairs

MEMBER OF THE FLORIDA CABINET
Division of Library & Information Services
Division of Historical Resources
Ringling Museum of Art
Division of Licensing
Division of Elections

RECEIVED
98 APR 20 AM 10:17

FLORIDA DEPARTMENT OF STATE
Sandra B. Mortham
Secretary of State
DIVISION OF HISTORICAL RESOURCES

April 13, 1998

Mr. J. R. Skinner
Division of Administration
Federal Highway Administration
U.S. Department of Transportation
227 N. Bronough Street, Suite 2015
Tallahassee, Florida 32301

In Reply Refer To:
Scott B. Edwards
Historic Sites Specialist
Project File No. 981009

RE: Cultural Resource Assessment Review Request
Final Draft - Section 106 Consultation, Case Study Report and Supporting Documentation for the SR 60 (Memorial Causeway) Bridge PD&E Study, City of Clearwater, Florida By HDR Engineering, Inc., January 1998.
SPN: 15220-1599
WPN: 7117181

Dear Mr. Skinner:

In accordance with the procedures contained in 36 C.F.R., Part 800 ("Protection of Historic Properties"), as well as the provisions contained in Chapter 267.061, *Florida Statutes*, we have reviewed the results of the field survey of the referenced project performed by HDR Engineering, Inc., and find them to be complete and sufficient.

We note that four previously unrecorded historic properties (8PI 8022 - 8PI 8025) were recorded and nine recorded historic and pre-historic properties were revisited during the course of the survey. Based on the results of the survey, the three previously unrecorded historic properties (8PI 8022 - 8PI8024) were determined to be potentially eligible for listing in the National Register. We concur with the determinations. The proposed alternative bridge alignment chosen was the Pierce Boulevard (P4A) alignment. The proposed P4A alignment had the potential to adversely impact the Haven Street House (8PI8022) located at 115 Court Street. Our review of the referenced Case Study Report indicates that the project will be designed to minimize visual impacts to the historic property. Therefore, it is the opinion of this office that the proposed alternative bridge alignment Pierce Boulevard (P4A) will have no adverse effect on the historic character and setting of the Haven Street House.

It should be noted that in those instances when a determination of no adverse effect has been made by this office and no Memorandum of Agreement is in place, the conditions set forth in 36 CFR Part 800.5 (Assessing Effects) and 36 CFR Part 800.8 (Documentation Requirements) are implemented. It is the responsibility of the submitting federal agency to forward summary documentation to the Advisory Council. This allows the Council to render an independent review of the undertakings. Please refer to the enclosure for the appropriate documentation requirements.

If you have any questions concerning our comments, please do not hesitate to contact us. Your interest in protecting Florida's archaeological and historic resources is appreciated.

Sincerely,

Laura A. Kammerer

for George W. Percy, Director
Division of Historical Resources
and
State Historic Preservation Officer

GWP/Ese

xc: C. L. Irwin, FDOT
Rick Adair, FDOT, District 7
Martha Catlin, ACHP

Enclosure (1)

EXHIBIT E5

KB-MP → HDR ch. of. 7117181. 17

U.S. Department of Transportation
Federal Highway Administration

RECEIVED
DISTRICT SEVEN
98 APR 13 PM 4:01

Florida Division Office
227 N. Bronough St., Suite 2015
Tallahassee, Florida 32301

April 9, 1998

HPO-FL

Mr. Kenneth A. Hartmann
District Secretary
Florida Department of Transportation
11201 N. McKinley Drive
Tampa, Florida 33612

Attention: Mr. Michael J. Coleman

Dear Mr. Hartmann:

Subject: FAP No. BRF-1456-(9)
WPI No. 7117181
State Project No. 15220-1599
4(f) Determination, Memorial Causeway Bridge,
Pinellas County

We have reviewed the information submitted by your office on March 19, 1998, concerning the replacement of the Memorial Causeway Bridge along SR-60 in Clearwater.

There are four properties in the vicinity of the project for which Section 4(f) of the United States Department of Transportation Act of 1966 would apply. These are the Haven Street House, Coachman Park, the Bayfront Tennis Complex, and the Fishing Pier on the 1927 Bridge. The project as currently proposed would only involve the Fishing Pier, and would avoid the other three properties. The City of Clearwater has provided information that the Fishing Pier will be relocated within the general vicinity prior to the demolition of the current structure. Therefore, we do not see any 4(f) involvement with this project. However, should the City of Clearwater's plans to replace the Fishing Pier change, the issue of 4(f) involvement would have to be reevaluated.

If you have any questions, please call our office.

Sincerely yours,

Mark P. Bartlett

For: J. R. Skinner
Division Administrator

EXHIBIT E6

U.S. Department
of Transportation
**Federal Highway
Administration**

RECEIVED
98 JUN -2 AM 10:46

Florida Division Office
227 N. Bronough St., Suite 2015
Tallahassee, Florida 32301

May 28, 1998

IN REPLY REFER TO: HPO-FL

RECEIVED
DISTRICT SECRETARY
DISTRICT SEVEN
98 JUN -2 AM 10:42

Mr. Kenneth A. Hartmann
District Secretary
Florida Department of Transportation
11201 N. McKinley Drive
Tampa, Florida 33612

Attention: Mr. Michael J. Coleman

Dear Mr. Hartmann:

Subject: Memorial Causeway Bridge - No Adverse Effect Concurrence
FAP No. BRF-1456-(9)
FP No. 2570931-31-01
Pinellas County

The Advisory Council on Historic Preservation (ACHP) has reviewed the documentation submitted to comply with Section 106 of the National Historic Preservation Act for the subject project to replace the Memorial Causeway Bridge in Clearwater. The ACHP concurred in the determination rendered by our office and the Florida State Historic Preservation Officer that the project would have No Adverse Effect upon properties listed on and eligible for listing on the *National Register of Historic Places*.

No specific conditions were placed upon this decision beyond the minor landscaping at the Haven Street House proposed in the documentation provided by your office up to this point. If you have any questions, please contact this office.

Sincerely yours,

Mark D. Bartlett

For: J. R. Skinner
Division Administrator

Enclosure

Advisory
Council On
Historic
Preservation

The Old Post Office Building
1100 Pennsylvania Avenue, NW, #809
Washington, DC 20004

MAY 14 1998

Mr. J.R. Skinner
Division Administrator
Federal Highway Administration
227 N. Bronough Street, Suite 2015
Tallahassee, FL 32301

REF: Proposed Bridge Replacement Project - SR 60 Bridge (Memorial Causeway)
Clearwater, Florida

Dear Mr. Dreihaup:

On April 23, 1998, the Council received your determination, supported by the Florida State Historic Preservation Officer (SHPO), that the referenced undertaking will have no adverse effect upon properties listed on and eligible for listing on the National Register of Historic Places. Pursuant to Section 800.5(d)(2) of the Council's regulations, "Protection of Historic Properties" (36 CFR Part 800), we do not object to your determination. Therefore, you are not required to take any further steps to comply with Section 106 of the National Historic Preservation Act other than to implement the undertaking as proposed and consistent with any conditions you have reached with the Florida SHPO.

Thank you for your cooperation.

Sincerely,

Raymond V. Wallace

Raymond V. Wallace
Historic Preservation Technician
Office of Planning and Review

APPENDIX F

ADVANCE NOTIFICATION AND RESPONSE LETTERS

CITY OF CLEARWATER

POST OFFICE BOX 4748

CLEARWATER, FLORIDA 34618-4748

March 22, 1996

Ms. Keri Akers
Florida State Clearinghouse
Department of Community Affairs
2740 Centerview Dr.
Tallahassee, FL 32399-2100

RE: **Advance Notification**
Work Program Item Number: 7117181
City Project Number: 699-9855
State Project Number 15220-1599
Federal Aid Number: N/A
S.R. 60 Memorial Causeway Bridge Replacement PD&E Study
City of Clearwater
Pinellas County, Florida

Dear Ms. Akers:

The attached Advance Notification Package to forwarded to your office for processing through the appropriate State agencies in accordance with Executive Order 93-194. Distribution to local and federal agencies is being made as noted.

Although more specific comments will be solicited during the permit coordination process, we request that permitting and permit review agencies review the attached information and furnish us with whatever general comments they consider pertinent at this time.

This is a non-Federal aid action and the City of Clearwater in cooperation with the Florida Department of Transportation (FDOT) will determine what degree of environmental documentation will be necessary. The determination will be based upon in-house environmental evaluations and comments received through coordination with other agencies. A consistency review for this project in accordance with 15 CFR 930 is not required, because no Federal funds are involved.

In addition, please review this improvement's consistency, to the maximum extent feasible, with the approved Comprehensive Plan of the local government jurisdiction(s) pursuant to Chapter 163, Florida Statutes.

We are looking forward to receiving your comments on the project within 45 days. Should additional review time be required, a written request for an extension of time must be submitted to our office within the initial 45-day comment period.

Your comments should be addressed to:

Mr. Richard Baier, P.E.
Clearwater City Engineer
City of Clearwater
Engineering Administration
P.O. Box 4748
Clearwater, Florida 34618-4748

Your expeditious handling of this notice will be appreciated.

Sincerely,

Richard J. Baier, P.E.
City Engineer

cc: Kirk Bogen, FDOT

RJB/

Attachment

MAILING LIST

cc: Federal Highway Administration, Division Administrator (MS 29)

Federal Emergency Management Agency - Natural Hazards Branch, Chief

Federal Railroad Administration - Office of Economic Analysis, Director

U.S. Department of Interior - Bureau of Land Management, Eastern States Office

U.S. Department of Housing and Urban Development, Regional Environmental Officer

U.S. Department of Interior - U.S. Geological Survey Chief

U.S. Environmental Protection Agency - Region IV, Regional Administrator

U.S. Department of Interior - Fish and Wildlife Service, Field Supervisor

U.S. Army Corps of Engineers - Regulatory Branch, District Engineer

U.S. Department of Commerce - National Marine Fisheries Service - Habitat Conservation Division

U.S. Department of Interior - National Park Service - Southeast Regional Office

U.S. Department of Commerce - National Oceanic and Atmospheric Administration

U.S. Department of Health and Human Services - Center for Environmental Health and Injury Control

U.S. Department of Interior - Bureau of Indian Affairs - Office of Trust Responsibilities

U.S. Coast Guard - Commander (oan) - Seventh District

Florida Game and Fresh Water Fish Commission - Office of Environmental Services

Tampa Bay Regional Planning Council

Southwest Florida Water Management District

Manager, Environmental Management Office

Local Government Officials

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

ADVANCE NOTIFICATION FACT SHEET

1. Need for Project: The City of Clearwater, in cooperation with the Florida Department of Transportation, is undertaking a Project Development and Environment (PD&E) Study for the proposed replacement of the State Road (S.R.) 60 (Memorial Causeway) bascule bridge, located directly west of downtown Clearwater. The study area limits extend approximately from Island Way east to Myrtle Avenue and from Drew Street south to Chestnut Street. The project is approximately 2.6 km (1.6 mi) in length. See project location map.

The existing bridge is classified as "functionally obsolete" due to the narrow median (0.61 m wide) and lack of shoulders. It is *not* classified as structurally deficient. The existing roadway profile is estimated to be roughly equivalent to a 50 km/h (30-mph) design speed, which is less than desirable given that the speed limit on the causeway is 70 km/h (45 mph).

The purpose of the project is to make improvements to the existing facility that will help reduce the number of traffic accidents that occur on the bridge and roadway. The occurrence of these traffic accidents may be attributable to several factors associated with the existing bridge and roadway. These factors include: (1) narrow median and lack of shoulders, (2) low design speed, (3) low skid resistance of the metal bridge grate (especially when wet), and (4) periodic bridge openings, which cause traffic back-ups that may contribute to the incidence of rear-end crashes. Replacement of the bridge with a modern, high-level fixed bridge would eliminate the above factors that may contribute to traffic accidents. It would also eliminate the signalized "Bayfront intersection" (Drew Street/Cleveland Street/Pierce Boulevard), which, in turn, would eliminate traffic crashes associated with this intersection. In addition, conditions for pedestrians and bicyclists would be made safer with a new fixed bridge. A new fixed bridge would eliminate potential public-agency liability concerns associated with the operation of a movable bridge.

A cost/benefit analysis has shown that the proposed bridge replacement is justified economically. This analysis (contained in the July 1995 Memorial Causeway Bridge Feasibility Study) indicates that the estimated benefits exceed the estimated costs by a gross Benefit/Cost ratio of 1.35. The projected benefits are primarily due to the reduction in motorists delay and vehicle operating costs resulting from elimination of bridge openings.

At present, the proposed improvements are not consistent with the City of Clearwater Comprehensive Plan and the Pinellas County Metropolitan Planning Organization Long Range Transportation Plan. This is because these plans show the east end of the bridge tying-in at Cleveland Street, whereas this study will examine the feasibility of a tie-in at Pierce Boulevard. The City in cooperation with the Florida Department of Transportation is working with the MPO to obtain consistency.

2. **Description of the Project:** The project is located in the City of Clearwater. The existing Memorial Causeway (S.R. 60) is a four-lane divided, rural roadway. The existing four-lane bridge includes a bascule (movable) span. Memorial Causeway serves as the primary link between mainland Clearwater and Clearwater Beach/Island Estates. Memorial Causeway is functionally classified as an urban principal arterial roadway. Pierce Boulevard is a four-lane undivided urban arterial which ties directly into the Court Street/Chestnut Street one-way pair system. Court and Chestnut are two-lanes each west of Oak Avenue and three lanes each east of Oak Avenue. Cleveland Street is a two-lane divided urban principal arterial, while Drew Street is generally a four-lane undivided facility maintained by the City.

   The PD&E study will include the preparation of a State Environmental Impact Report (SEIR), in addition to a series of technical reports. The SEIR will expand on the 1995 Feasibility Study. The Feasibility Study evaluated nine alternatives for replacing the existing bridge. The study recommended two alternatives for further evaluation (Alternatives P4A and P4), both involving a four-lane high-level (19.8 m) fixed bridge connecting to Pierce Boulevard on a mostly new alignment. Alternative P4 would require the relocation of the Clearwater Harbor channel (part of the Gulf Intracoastal Waterway), whereas Alternative P4A would not.

   The SEIR will include an analysis of the proposed project's effect on the study area. A No-Build alternative will also be fully evaluated. The recommended typical section and other features will be determined during the PD&E study.

3. **Environmental Information:**

   a. **Land Use:** Land use along the mainland portion of the corridor is predominantly urban, consisting of retail commercial establishments, government (city/county) institutions, park and recreation areas (including Coachman Park), and churches. Land use along the causeway portion of the corridor is designated as a conservation area (natural resource category), according to the City of Clearwater Comprehensive Plan (adopted November 16, 1989).

   b. **Wetlands:** Wetlands in the project area consist of submerged shoal-grass beds, narrow strips of beach, saltmarsh cordgrass marsh, and white mangrove swamp. Deepwater habitat is represented by unconsolidated substrate (including the

Intracoastal Waterway). Impacts to wetlands and deepwater habitats are expected to be minor or temporary in nature. Impacts to these systems will be minimized and/or mitigated for during the course of the project.

c. **Floodplains:** According to the Flood Insurance Rate Maps (FIRM) Community Panel Numbers 125096 007 B, 125096 0008 B, and 125096 015 B, the proposed project includes some floodplain areas. Because of potential storm surge from the Gulf of Mexico and Clearwater Harbor, a narrow strip of Zone VE (100-year coastal flood area with velocity (wave action)) is mapped along the south shore of the causeway as well as along mainland shore. The 100-year storm surge elevations range between 3.4 m (11 ft) NGVD and 4.0 m (13 ft) NGVD. Landward of the mainland Zone V as well as occupying the remaining causeway area is a strip of Zone AE (100-year base flood area) with base elevations ranging between 3.0 m (10 ft) and 3.7 m (12 ft) NGVD. A small area of Zone X (500-year flood area or 100-year flood area with less than 0.3 m or 1 ft average depth) is located between the mainland shore and Osceola Avenue between Cleveland Street and Drew Street. It is anticipated that fill for the project will mainly be in the base floodplain (Zone A) with only minor intrusion in the storm surge floodplain (Zone V), primarily in the southwest quadrant of Memorial Causeway. Floodplain impacts should be insignificant due to the tidal nature of the waterway.

d. **Wildlife and Habitat:** Based on field and agency records review, the listed wildlife species of potential concern which could be encountered during project construction include the manatee (*Trichechus manatus*), loggerhead turtle (*Caretta caretta*), leatherback turtle (*Dermochelys coriacea*), hawksbill turtle (*Eretmochelys imbricata*), Kemps ridley turtle (*Lepidochelys kempii*), and green turtle (*Chelonia mydas*). Impacts to existing natural communities will be minimized and will consist primarily of additional shading resulting from a wider (high-level) bridge and limited dredge-and-fill activities associated with pier (piling) construction and possible navigational channel realignment.

e. **Outstanding Florida Waters:** Yes (located within Pinellas County Aquatic Preserve).

f. **Aquatic Preserves:** Yes (Pinellas County Aquatic Preserve).

g. **Coastal Zone Consistency Determination Required?** N/A

h. **Cultural Resources:** A cultural resources survey of the corridor will be completed as part of the PD&E study. The results of this survey will be coordinated through the State Historic Preservation Officer (SHPO).

I. **Coastal Barrier Resources:** There are no coastal barrier resources in the project vicinity.

j. **Contamination:** A survey of potentially contaminated sites will be conducted as part of this study.

4. **Navigable Waterway Crossing?** Yes (the Intracoastal Waterway). Because the proposed bridge crosses waters which are tidal and used by recreational boating, fishing, and other small vessels 6.4 meters (21 feet) or greater in length, or used or susceptible to use as a means to transport interstate or foreign commerce, a U.S. Coast Guard permit will be required pursuant to 23 CFR 650, Part H, §650.807(b).

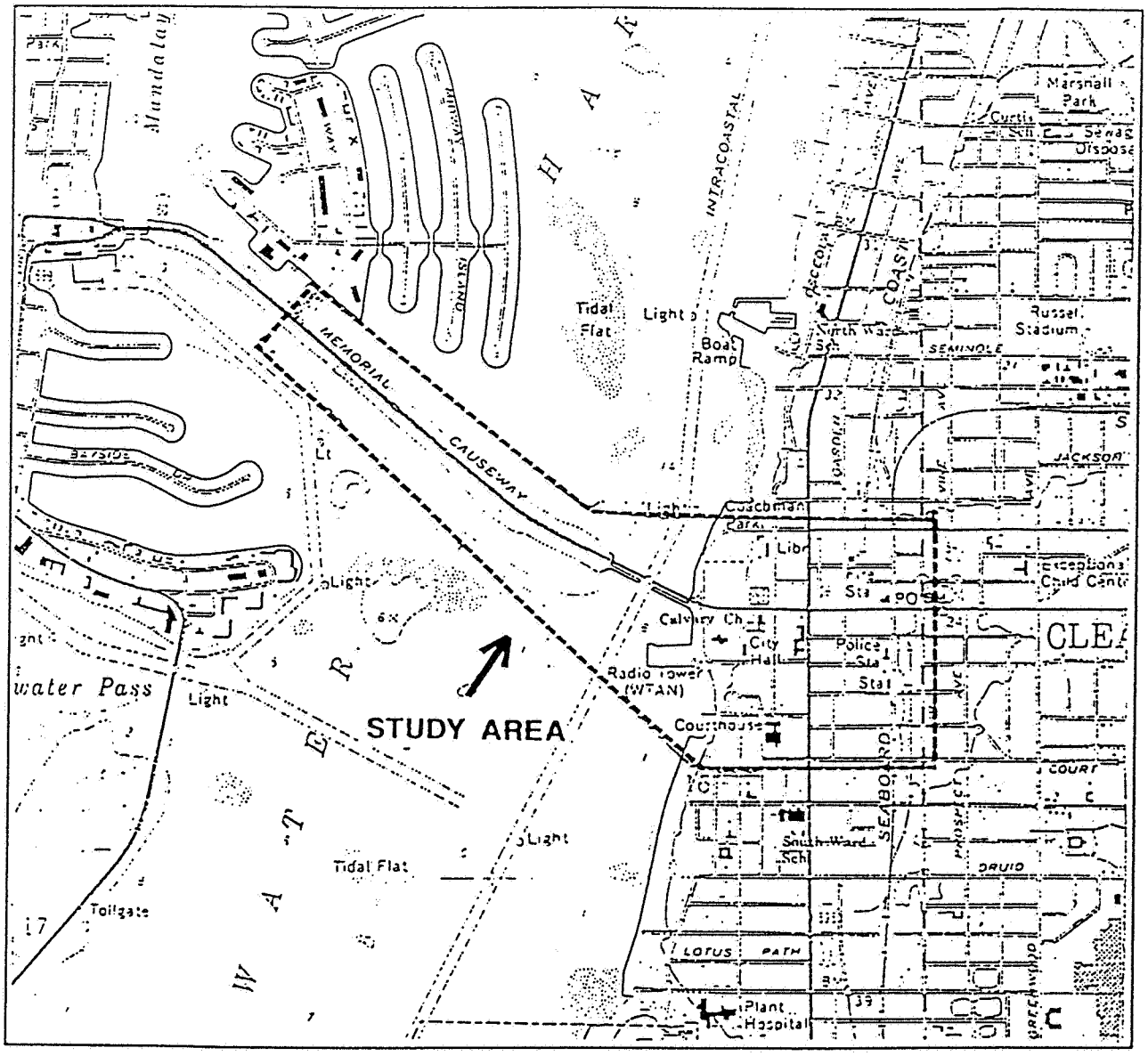
5. **List of Permits Required:**

U.S. Coast Guard Service
Bridge Permit

U.S. Army Corps of Engineers
Dredge and Fill Permit

U.S. Environmental Protection Agency
NPDES Permit
Stormwater Pollution Prevention Plan (SWPPP)

Southwest Florida Water Management District
Environmental Resource Permit



LOCATION MAP

SR 60 Memorial Causeway Bridge Replacement PD& E Study
SPN: 15220-1599
WPI: 7117181
Pinellas County
U.S.G.S. Quad. Clearwater

MAILING LIST

cc: Federal Highway Administration, Division Administrator (MS 29)

Federal Emergency Management Agency - Natural Hazard Branch, Chief

Federal Railroad Administration - Office of Economic Analysis, Director

U.S. Department of Interior - Bureau of Land Management, Eastern States Office

U.S. Department of Housing and Urban Development, Regional Environmental Office

U.S. Department of Interior - U.S. Geological Survey, Chief

U.S. Environmental Protection Agency - Region IV, Regional Administrator

U.S. Department of Interior - Fish and Wildlife Service, Field Supervisor

U.S. Army Corps of Engineers - Regulatory Branch, District Engineer

U.S. Department of Commerce - National Marine Fisheries Service - Habitat Conservation Division

U.S. Department of Interior - National Park Service - Southeast Regional Office

U.S. Department of Commerce - National Oceanic and Atmospheric Administration

U.S. Department of Health and Human Services - Center for Environmental Health and Injury Control

U.S. Department of Interior - Bureau of Indian Affairs - Office of Trust Responsibilities

U.S. Coast Guard - Commander (oan) - Seventh District

Florida Game and Fresh Water Fish Commission - Office of Environmental Services

Tampa Bay Regional Planning Council

Southwest Florida Water Management District

Manger, Environmental Management Office

CITY OF CLEARWATER

POST OFFICE BOX 4748, CLEARWATER, FLORIDA 34618-4748

August 5, 1996

Ms. Keri Akers
Florida State Clearinghouse
Department of Community Affairs
2555 Shumard Oak Blvd.
Tallahassee, FL 32399-2100

RE: **Advance Notification Addendum**
SAI #: FL9603250178C
Work Program Item Number: 7117181
City Project Number: 699-9855
State Project Number: 15220-1599
S.R. 60 Memorial Causeway Bridge Replacement PD&E Study
City of Clearwater, Pinellas County, Florida

Dear Ms. Akers,

This letter has been forwarded to your office as an addendum to the original advance notification packet (SAI #: FL9603250178C) for the S.R. 60 Memorial Causeway Bridge Replacement PD&E Study. Distribution to local and federal agencies is being made as noted.

The project originally called for the preparation of a State Environmental Impact Report, for the City of Clearwater, in cooperation with the Florida Department of Transportation. However, because the project spans the Intracoastal Waterway and will require a Coast Guard bridge permit, the study scope has been amended to follow the *federal* NEPA process with the Coast Guard as the lead agency. There is still no involvement with either federal funds or the Federal Highway Administration (FHWA).

Any questions or comments regarding this addendum should be addressed to:

Mr. Richard Baier, P.E.
Clearwater City Engineer
Engineering Administration
P.O. Box 4748
Clearwater, FL 34616-5520

Sincerely,

Richard J. Baier, P.E.
City Engineer

cc: Kirk Bogen, FDOT

STATE OF FLORIDA
DEPARTMENT OF COMMUNITY AFFAIRS

EMERGENCY MANAGEMENT • HOUSING AND COMMUNITY DEVELOPMENT • RESOURCE PLANNING AND MANAGEMENT

LAWTON CHILES
Governor

May 13,1996

JAMES F. MURLEY
Secretary

ENGINEERING ADMINISTRATION

☒ RJB	☐ TRA	☐ ENVI	☐ WPC
☐ GAJ	☐ EWB	☐	☐ MP
☐ TCJ	☐ RCS	☐ CGH	☐ NS
☐ GLB	☐ CRF	☐ JWR	☐ AE
☐ WJS	☐	☐ MJB	☐ NP
☐ RDB	☐ RJM	☐ RRP	☐ DG

COPIES:
FILE:

Mr. Richard Baier
City of Clearwater
Engineering Administration
Post Office Box 4748
Clearwater, Florida 34618-4748

RE: Highway Planning and Construction - Advance Notification - State Road 60 Memorial Causeway Bridge Replacement - Clearwater, Pinellas County, Florida
SAI: FL9603250178C

Dear Mr. Baier:

The Florida State Clearinghouse, pursuant to Presidential Executive Order 12372, Gubernatorial Executive Order 95-359, the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended, and the National Environmental Policy Act, 42 U.S.C. §§ 4321, 4331-4335, 4341-4347, as amended, has coordinated a review of the above-referenced project.

The Department of State (DOS) indicates that the applicant will conduct a cultural resources survey to identify any significant archaeological and/or historic sites which may be located within the project area, and the applicant will provide the DOS with the results of the survey. The applicant is also required to consult with the DOS regarding the avoidance or mitigation of any impacts to sites identified in the survey. Please refer to the enclosed DOS comments.

The Southwest Florida Water Management District (SWFWMD) has expressed an interest in coordinating with the applicant on wetland impacts and mitigation projects associated with Tampa Bay. Therefore, the applicant is encouraged to contact SWFWMD to discuss opportunities for cooperation. Please refer to the enclosed SWFWMD comments.

The Game and Fresh Water Fish Commission (GFWFC) notes that several endangered, threatened or species of special concern occur, or are likely to occur, within the project area. The listed species include the West Indian manatee, loggerhead sea turtle, least tern, brown pelican, snowy egret, reddish egret, little blue heron, tricolored heron, white ibis, and common snook. Therefore, the GFWFC recommends that the project design include the following considerations: 1) the protection of the wading bird rookery from construction-related activities, 2) the removal of portions of the existing causeway if an extended fixed-span bridge of greater length is proposed and assessment of the potential for improvement of hydraulic conditions and water quality in Clearwater Harbor, 3) avoid impacts to habitat areas during wetland mitigation and stormwater management efforts, and 4) avoid impacts to seagrass beds, mangrove systems, and habitat areas during channel realignment. Please refer to the enclosed GFWFC comments.

The Department of Environmental Protection (DEP) recommends actions to minimize impacts to the Outstanding Florida Waters of the Pinellas County Aquatic Preserve, located in Clearwater Harbor. The bridge design should incorporate a construction methodology which minimizes construction and wetland impacts to seagrass beds and hard bottom communities. In the event the proposed bridge design results in excess property, two options could be considered: 1) removing the unused section of the causeway to allow greater tidal flushing in Clearwater Harbor, or 2) the creation of a passive park. Also, measures should be taken during demolition and construction to protect the endangered West Indian manatee. The DEP also indicates that permits will be required prior to the start of construction. Sound development practices should be maintained during all construction. Early coordination with DEP's Southwest District office may help to eliminate problems in the permitting process. Please refer to the enclosed DEP comments.

Based on the information contained in the advance notification and the applicant's satisfactory compliance with all conditions stipulated by our reviewing agencies, as enclosed, the state has determined that, at this stage, the above-referenced project is consistent with the Florida Coastal Management Program (FCMP). All subsequent environmental documents prepared for this project must be reviewed to determine the project's continued consistency with the FCMP.

The Department of Community Affairs (Department), pursuant to its role as the state's land planning agency, has reviewed the referenced project for consistency with the relevant local government comprehensive plan. Based on the information contained in the application, the Department has determined that the project is consistent, to the maximum extent feasible, with the applicable comprehensive plan.

If you have any questions regarding this letter, please contact Ms. Keri Akers, Clearinghouse Coordinator, or Ms. Jasmin Raffington, Florida Coastal Management Program, at (904) 922-5438.

Sincerely,

G. Steven Pfeiffer
Assistant Secretary

GSP/cc

Enclosures

cc: George W. Percy, Department of State
Trisha Neasman, Southwest Florida Water Management District
Lindy Broz, Department of Environmental Protection
Bradley J. Hartman, Game and Fresh Water Fish Commission
Leroy Irwin, Department of Transportation

EXHIBIT F 1

Department of Environmental Protection

Lawton Chiles
Governor

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Virginia B. Wetherell
Secretary

April 23, 1996

Ms. Keri Akers
State Clearinghouse
Florida Department of Community Affairs
2740 Centerview Drive
Tallahassee, FL 32399-2100

RE: Advance Notification/S.R. 60 Memorial Causeway Bridge Replacement PD&E Study, City of Clearwater, Pinellas County

SAI: FL9603250178C

Dear Ms. Akers:

We have reviewed the Advanced Notification Package for the S.R. 60 Memorial Causeway Bridge Replacement PD&E Study located in Pinellas County. Information provided indicates a potential exists for impacts to the Outstanding Florida Waters of the Pinellas County Aquatic Preserve, in Clearwater Harbor. While specific comments will be available during the permit coordination process, the following information should be considered by the applicant when addressing the potential adverse impacts to these waters:

1. Significant realignment of the bridge could potentially cause negative impacts to seagrass beds and hard bottom communities. The bridge design adopted should incorporate a construction methodology (ie: top down construction) which minimizes construction impacts resulting from maneuvering and parking construction barges over seagrass and other sensitive bottom communities. Every effort should be made to minimize wetland impacts by emphasizing avoidance oriented corridor alignments and avoidance or minimization of fill placement within the Aquatic Preserve.

2. In the event the existing bascule bridge is replaced by a high level fixed bridge, the new bridge would span a greater distance. This would result in the bridge's western terminus being located further west on the causeway. The section of the causeway under the bridge span would be unused. In the event the proposed bridge design results in excess property, two options could be considered: 1) the unused section of the causeway could be removed to allow greater tidal flushing in Clearwater Harbor, or 2) a passive park could be created. The first option would impact existing habitats, ie: seagrass beds and mangroves, however, it could potentially benefit the system as a whole since it would allow greater tidal flushing to occur. Hydrographic studies should be conducted to determine what effect removing part of the causeway would have on the system.

3. The proposed project may be a concern for the endangered West Indian manatee. Protective measures should be taken (at a minimum, the standard manatee construction conditions) during demolition and construction. If the project is located near an important manatee aggregation or foraging area, the time frame for the demolition/construction should be considered. In the event Alternative P4 is chosen, which

the available navigational width underneath the bridge would allow for the safe passage of both manatees and boaters.

From the information provided, it appears that the proposed project will require a Submerged Lands Environmental Resource Permit. Questions regarding this and other required permits should be referred to Mac Craig in the FDEP Southwest District Office at (813) 744-6100. We appreciate the opportunity to review the Advance Notification Package. If further assistance is needed, please contact me at (904) 487-2231. Thank you.

Sincerely,

Lindy Broz

Lindy Broz
Office of Intergovernmental Programs

/lmb

EXHIBIT F

FLORIDA GAME AND FRESH WATER FISH COMMISSION

April 9, 1996

RECEIVED
APR 11 1996
State of Florida Clearinghouse

OFFICE OF ENVIRONMENTAL SERVICES
BRADLEY J. HARTMAN, Director
FARRIS BRYANT BUILDING
620 South Meridian Street
Tallahassee, FL 32399-1600
(904) 488-6661
SUNCOM 278-6661
FAX (904) 922-5679
TDD (904) 488-9542

Ms. Keri Akers
Florida State Clearinghouse
Department of Community Affairs
2740 Centerview Drive
Tallahassee, Florida 32399-2100

RE: SAI #FL9603250178C, Pinellas County, State Road 60, Memorial Causeway Bridge Replacement, Clearwater Harbor

Dear Ms. Akers:

The Office of Environmental Services of the Florida Game and Fresh Water Fish Commission (GFC) has reviewed the referenced document, and offers the following comments.

The project consists of a study to analyze replacement of the existing SR 60, Memorial Causeway bascule bridge, west of downtown Clearwater. Specific new bridge designs have not yet been developed. The project area crosses Clearwater Harbor in the City of Clearwater, including the designated causeway conservation area.

Listed species either documented, or with a high probability to occur, in the project area include the West Indian manatee (endangered), loggerhead sea turtle (threatened - T), least tern (T), brown pelican (species of special concern - SSC), snowy egret (SSC), reddish egret (SSC), little blue heron (SSC), tricolored heron (SSC), white ibis (SSC), and common snook (SSC). Areas of particular interest to listed wildlife include the causeway shoreline (foraging areas for shore and wading birds), and two islands located west and south of the roadway. The largest island is wading bird rookery #615131, utilized by great egret, snowy egret, great blue heron, black-crowned night heron, and reddish egret (Runde, D.E., et al. 1991. Florida Atlas of Breeding Sites for Herons and Their Allies, Nongame Wildlife Program Technical Report No. 10.)

We recommend that the project design include the following considerations:

1) The wading bird rookery should be protected from construction-related activities,

including potential navigation channel realignment. The proposed bridge design and alignment should be established to avoid impacts to the rookery island.

2) If an extended fixed-span bridge of greater length is proposed, portions of the existing causeway should be removed. In any case, the construction of flow channels through the existing causeway should be examined to assess the potential for improvement of hydraulic conditions and water quality in Clearwater Harbor.

3) The wetland mitigation and stormwater management proposals associated with the project should not negatively impact the habitat of listed wildlife species.

4) Any potential channel realignment should not impact seagrass beds and mangrove systems, and should not negatively impact the habitat of listed wildlife species.

Please contact me, or Mr. Jim Beever in our Punta Gorda office at (941) 639-3515, if you have any questions.

Sincerely,

Bradley J. Hartman, Director
Office of Environmental Services

BJH/JWB
ENV 1-3-2
sr60clhb.sai

cc: Mr. Michael J. Coleman, P.E.
District Project Development and Environment Engineer
Florida Department of Transportation, District 7
11201 North McKinley Drive, MS 7-500
Tampa, Florida 33612-6403

COUNTY: Pinellas / 5

DATE: 03/25/96
COMMENT DUE DATE: 04/08/96
CLEARANCE DUE DATE: 05/09/96
SAI#: FL9603250178(

STATE AGENCIES

__ Agriculture
__ Commerce
__ Community Affairs
__ Environmental Protection
X Game and Fresh Water Fish Comm
__ State
__ Transportation

RECEIVED
APR 16 1996
State of Florida Clearinghouse

LOCAL/OTHER

__ Southwest Florida WMD

RECEIVED
APR 01 [illegible]

OPB POLICY UNITS

__ Environmental Policy/C & ED

RECEIVED BY GFC
MAR 27 1996
OFFICE OF
ENVIRONMENTAL SERVICES

RECEIVED BY GFC
APR 15 1996
OFFICE OF
ENVIRONMENTAL SERVICES

The attached document requires a Coastal Zone Management Act/Florida Coastal Management Program consistency evalutation and is categorized as one of the following:

_X_ Federal Assistance to State or Local Government (15 CFR 930, Subpart F). Agencies are required to evaluate the consistency of the activity.

___ Direct Federal Activity (15 CFR 930, Subpart C). Federal Agencies are required to furnish a consistency determination for the State's concurrence or objection.

___ Outer Continental Shelf Exploration, Development or Production Activities (15 CFR 930, Subpart E). Operators are required to provide a consistency certification for state concurrence/objection.

___ Federal Licensing or Permitting Activity (15 CFR 930, Subpart D). Such projects will only be evaluated for consistency when there is not an analogous state license or permit.

Project Description:

Advance Notification for State Road 60 Memorial Causeway Bridge Replacement Project Development and Environment Study - State Project number: 15220-1599 - Clearwater, Pinellas County, Florida.

To: **Florida State Clearinghouse**
Department of Community Affairs
2740 Centerview Drive
Tallahassee, FL 32399-2100
(904) 922-5438 (SC 292-5438)
(904) 487-2899 (FAX)

EO. 12372/NEPA

☐ No Comment
☒ Comments Attached
☐ Not Applicable

Federal Consistency

☐ No Comment/Consistent
☒ Consistent/Comments Attached
☐ Inconsistent/Comments Attached
☐ Not Applicable

From:
Division/Bureau: Florida Game and Fresh Water Fish Commission
Reviewer: James Beever
Date: April 3, 1996

EXHIBIT F 3

Southwest Florida Water Management District

2379 Broad Street • Brooksville, Florida 34609-6899 • 1-800-423-1476 (Florida Only) or (904) 796-7211 • SUNCOM 628-4150 • T.D.D. Number Only (Florida Only): 1-800-231-6103

7601 Highway 301 North
Tampa, Florida 33637-6759
1-800-836-0797 or (813) 985-7481
SUNCOM 578-2070

170 Century Boulevard
Bartow, Florida 33830-7700
1-800-492-7862 or (941) 534-1448
SUNCOM 572-6200

115 Corporation Way
Venice, Florida 34292-3524
1-800-320-3503 or (941) 483-5970
SUNCOM 549-5970

2303 Highway 44 West
Inverness, Florida 34453-3809
(904) 637-1360

An Equal Opportunity Employer

April 12, 1996

Ms. Keri Akers
Florida State Clearinghouse
Department of Community Affairs
2740 Centerview Drive
Tallahassee, Florida 32399-2100

Subject: Advance Notification for State Road 60 Memorial Causeway Bridge Replacement Project Development and Environment Study - Clearwater, Pinellas, Florida

SAI#: FL9603250178C

Dear Ms. Akers:

The Southwest Florida Water Management District has conducted a consistency evaluation for the referenced project and determined that it is generally consistent with the District's activities. However, the District is interested in coordinating with the applicant on wetland impacts and mitigation projects associated with Tampa Bay. Our interest in these activities stems from ongoing local programs (i.e., Tampa Bay Surface Water Improvement and Management (SWIM) program and the Tampa Bay National Estuary Program (NEP)) to improve Tampa Bay's water quality. The District's contact for matters regarding the Tampa Bay SWIM program is Dr. Brandt Henningsen of our Tampa office (813-985-7481).

The District appreciates the opportunity to participate in the review of this project. Please be advised that this review does not constrict approval under Chapter 373, Florida Statutes, or any rules promulgated thereunder, nor does it stand in lieu of normal permitting procedures in accordance with Florida Statutes and District rules.

If you have any questions or if I can be of further assistance, please contact me in the District's Planning Department.

Sincerely,

Trisha Neasman

Trisha Neasman, AICP
Government Planning Coordinator

TN
cc: Richard Baier, City of Clearwater
Kirk Bogen, FDOT
Brandt Henningsen, SWFWMD-SWIM

Excellence Through Quality Service

EXHIBIT F 4

FLORIDA DEPARTMENT OF STATE
Sandra B. Mortham
Secretary of State
DIVISION OF HISTORICAL RESOURCES
R.A. Gray Building
500 South Bronough Street
Tallahassee, Florida 32399-0250

Director's Office (904) 488-1480
Telecopier Number (FAX) (904) 488-3353

April 5, 1996

Ms. Keri Akers
State Clearinghouse
Department of Community Affairs
2740 Centerview Drive
Tallahassee, Florida 32399-2100

In Reply Refer To:
Frank J. Keel
Historic Sites Specialist
(904) 487-2333
Project File No. 961131

RE: SAI# FL9603250178C
Florida Department of Transportation
Advance Notification
SR 60 Memorial Causeway Bridge Replacement PD&E Study
SPN: 15220-1599
WPN: 7117181
FPN: N/A
Pinellas County, Florida

Dear Ms. Akers:

In accordance with the provisions of Florida's Coastal Zone Management Act and Chapter 267, *Florida Statutes*, as well as the procedures contained in 36 C.F.R., Part 800 ("Protection of Historic Properties"), we have reviewed the referenced project(s) for possible impact to historic properties listed, or eligible for listing, in the *National Register of Historic Places*, or otherwise of historic or architectural value.

We have reviewed the Advanced Notification for the Florida Department of Transportation (FDOT) project referenced above. We note that the project will have a cultural resource survey performed. Therefore, conditioned upon the FDOT undertaking a cultural resource survey, and appropriately avoiding, minimizing, or mitigating project impacts to any identified significant archaeological or historic sites, the proposed project will have no effect on historic properties listed, or eligible for listing, in the National Register, or otherwise of historical or architectural value. If these conditions are met the project will also be consistent with the historic preservation aspects of Florida's Coastal Management Program.

If you have any questions concerning our comments, please do not hesitate to contact us. Your interest in protecting Florida's historic properties is appreciated.

Sincerely,

Laura A. Kammerer

for George W. Percy, Director
Division of Historical Resources
and
State Historic Preservation Officer

GWP/Kfk
xc: Jasmin Raffington, FCMP-DCA

EXHIBIT F 5

COUNTY: Pinellas

DATE:
COMMENT DUE DATE: 04/08/96
CLEARANCE DUE DATE: 05/09/96
SAI#: FL9603250178

STATE AGENCIES	LOCAL/OTHER	OPB POLICY UNITS
X Agriculture __ Commerce __ Community Affairs __ Environmental Protection __ Game and Fresh Water Fish Comm __ State __ Transportation	__ Southwest Florida WMD	__ Environmental Policy/C & ED

RECEIVED
MAR 29 1996
State of Florida Clearinghouse

The attached document requires a Coastal Zone Management Act/Florida Coastal Management Program consistency evalutation and is categorized as one of the following:

_X_ Federal Assistance to State or Local Government (15 CFR 930, Subpart F). Agencies are required to evaluate the consistency of the activity.

___ Direct Federal Activity (15 CFR 930, Subpart C). Federal Agencies are required to furnish a consistency determination for the State's concurrence or objection.

___ Outer Continental Shelf Exploration, Development or Production Activities (15 CFR 930, Subpart E). Operators are required to provide a consistency certification for state concurrence/objection.

___ Federal Licensing or Permitting Activity (15 CFR 930, Subpart D). Such projects will only be evaluated for consistency when there is not an analogous state license or permit.

Project Description:

Advance Notification for State Road 60 Memorial Causeway Bridge Replacement Project Development and Environment Study - State Project number: 15220-1599 - Clearwater, Pinellas County, Florida.

To: **Florida State Clearinghouse**
Department of Community Affairs
2740 Centerview Drive
Tallahassee, FL 32399-2100
(904) 922-5438 (SC 292-5438)
(904) 487-2899 (FAX)

EO. 12372/NEPA

- [x] No Comment
- [ ] Comments Attached
- [ ] Not Applicable

Federal Consistency

- [ ] No Comment/Consistent
- [ ] Consistent/Comments Attached
- [ ] Inconsistent/Comments Attached
- [ ] Not Applicable

From:

Division/Bureau: Forestry / FRP ESS

Reviewer: Ray Mason

Date: 03/27/96

EXHIBIT F 6

STATE OF FLORIDA DEPARTMENT OF COMMERCE
Division of Economic Development

March 28, 1996

RECEIVED
MAR 2 9 1996
State of Florida Clearinghouse

Ms. Keri Akers, Coordinator
Florida State Clearinghouse
Department of Community Affairs
2740 Centerview Drive
Tallahassee, Florida 32399-2100

RE: SAI# FL 96 03 25 0178C (SR 60 Bridge/Clearwater/Pinellas)

Dear Ms. Akers:

Thank you for asking the Florida Department of Commerce to make a consistency review of this Advance Notification for a bascule bridge replacement on State Road 60 near downtown Clearwater, Florida in Pinellas County. The existing bridge is functionally obsolete and the replacement (1.6 miles in length) will enhance traffic safety in that area as well as benefit tourism and economic development..

Based on those portions of the Coastal Zone Management Act of 1972 (16 U.S.C. 1451 et seq.) and the Florida Coastal Management Program (Secs. 380.19-33, F.S.) for which the Department of Commerce has responsibility, we believe the proposed plans and actions will be consistent with criteria in Chapter 288, Florida Statutes: positive impacts on income and employment; social benefits outweigh identifiable social costs; no adverse effects on any key Florida industry; and official local agency support for the project.

Very respectfully,

Wynnelle Wilson

Wynnelle Wilson
Economic Development Policy Coordinator
Bureau of Economic Analysis

WW/rdp

Director's Office 904/488-6300 | Business Assistance 904/488-9357 | Economic Analysis 904/487-2568 | Industry Development 904/488-9360 | Motion Picture and Television 904/487-1100 | International Trade and Development 904/488-6124

COLLINS BUILDING TALLAHASSEE, FLORIDA 32399-2000 FAX 904/487-1407

COUNTY: Pinellas

DATE: 03/25/96
COMMEN_ DUE DATE: 04/08/96
CLEARANCE DUE DATE: 05/09/96
SAI#: FL9603250178

STATE AGENCIES	LOCAL/OTHER	OPB POLICY UNITS
__ Agriculture X Commerce __ Community Affairs __ Environmental Protection __ Game and Fresh Water Fish Comm __ State __ Transportation	__ Southwest Florida WMD	__ Environmental Policy/C & ED

The attached document requires a Coastal Zone Management Act/Florida Coastal Management Program consistency evalutation and is categorized as one of the following:

_X_ **Federal Assistance to State or Local Government (15 CFR 930, Subpart F). Agencies are required to evaluate the consistency of the activity.**

___ **Direct Federal Activity (15 CFR 930, Subpart C). Federal Agencies are required to furnish a consistency determination for the State's concurrence or objection.**

___ **Outer Continental Shelf Exploration, Development or Production Activities (15 CFR 930, Subpart E). Operators are required to provide a consistency certification for state concurrence/objection.**

___ **Federal Licensing or Permitting Activity (15 CFR 930, Subpart D). Such projects will only be evaluated for consistency when there is not an analogous state license or permit.**

Project Description:

Advance Notification for State Road 60 Memorial Causeway Bridge Replacement Project Development and Environment Study - State Project number: 15220-1599 - Clearwater, Pinellas County, Florida.

To: Florida State Clearinghouse
Department of Community Affairs
2740 Centerview Drive
Tallahassee, FL 32399-2100
(904) 922-5438 (SC 292-5438)
(904) 487-2899 (FAX)

EO. 12372/NEPA

- ☐ No Comment
- ☐ Comments Attached
- ☐ Not Applicable

Federal Consistency

- ☐ No Comment/Consistent
- ☒ Consistent/Comments Attached
- ☐ Inconsistent/Comments Attached
- ☐ Not Applicable

From:
Florida Department of Commerce
Division of Economic Development
Division/Bureau: Bureau of Economic Analysis
Reviewer: R Peterson W
Date: 28 Mar '96

EXHIBIT F 7

COUNTY: Pinellas

DATE:
COMMENT DUE DATE: 04/08/96
CLEARANCE DUE DATE: 05/09/96
SAI#: FL9603250178

STATE AGENCIES	LOCAL/OTHER	OPB POLICY UNITS
__ Agriculture __ Commerce __ Community Affairs __ Environmental Protection __ Game and Fresh Water Fish Comm __ State X Transportation	__ Southwest Florida WMD	__ Environmental Policy/C & ED

RECEIVED
MAR 27 1996
CENTRAL OFFICE FDOT
ICAR COORDINATOR

RECEIVED
MAR 29 1996
State of Florida Clearinghouse

DOT Project

The attached document requires a Coastal Zone Management Act/Florida Coastal Management Program consistency evalutation and is categorized as one of the following:

_X_ **Federal Assistance to State or Local Government (15 CFR 930, Subpart F). Agencies are required to evaluate the consistency of the activity.**

___ **Direct Federal Activity (15 CFR 930, Subpart C). Federal Agencies are required to furnish a consistency determination for the State's concurrence or objection.**

___ **Outer Continental Shelf Exploration, Development or Production Activities (15 CFR 930, Subpart E). Operators are required to provide a consistency certification for state concurrence/objection.**

___ **Federal Licensing or Permitting Activity (15 CFR 930, Subpart D). Such projects will only be evaluated for consistency when there is not an analogous state license or permit.**

Project Description:

Advance Notification for State Road 60 Memorial Causeway Bridge Replacement Project Development and Environment Study - State Project number: 15220-1599 - Clearwater, Pinellas County, Florida.

To: Florida State Clearinghouse
Department of Community Affairs
2740 Centerview Drive
Tallahassee, FL 32399-2100
(904) 922-5438 (SC 292-5438)
(904) 487-2899 (FAX)

EO. 12372/NEPA

☐ No Comment
☐ Comments Attached
☐ Not Applicable

Federal Consistency

☐ No Comment/Consistent
☐ Consistent/Comments Attached
☐ Inconsistent/Comments Attached
☐ Not Applicable

From:

Division/Bureau: _____

Reviewer: _____

Date: _____

COUNTY: Pinellas

DATE: 03/25/96
COMMENT DUE DATE: 04/08/96
CLEARANCE DUE DATE: 05/09/96
SAI#: FL960325017

STATE AGENCIES	LOCAL/OTHER	OPB POLICY UNITS
__ Agriculture __ Commerce __ Community Affairs __ Environmental Protection __ Game and Fresh Water Fish Comm __ State __ Transportation	__ Southwest Florida WMD	X Environmental Policy/C & ED

RECEIVED
MAR 26 1996
OFFICE OF PLANNING
& BUDGETING
ENVIRONMENTAL POLICY UNIT

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APR 25 1996
State of Florida Clearinghouse

The attached document requires a Coastal Zone Management Act/Florida Coastal Management Program consistency evalutation and is categorized as one of the following:

_X_ Federal Assistance to State or Local Government (15 CFR 930, Subpart F). Agencies are required to evaluate the consistency of the activity.

___ Direct Federal Activity (15 CFR 930, Subpart C). Federal Agencies are required to furnish a consistency determination for the State's concurrence or objection.

___ Outer Continental Shelf Exploration, Development or Production Activities (15 CFR 930, Subpart E). Operators are required to provide a consistency certification for state concurrence/objection.

___ Federal Licensing or Permitting Activity (15 CFR 930, Subpart D). Such projects will only be evaluated for consistency when there is not an analogous state license or permit.

Project Description:

Advance Notification for State Road 60 Memorial Causeway Bridge Replacement Project Development and Environment Study - State Project number: 15220-1599 - Clearwater, Pinellas County, Florida.

There's no adverse impact to the departments budget since this project is program in the 5-year work plan.

Rosie Matis

To: Florida State Clearinghouse
Department of Community Affairs
2740 Centerview Drive
Tallahassee, FL 32399-2100
(904) 922-5438 (SC 292-5438)
(904) 487-2899 (FAX)

EO. 12372/NEPA

- ☐ No Comment
- ☐ Comments Attached
- ☐ Not Applicable

Federal Consistency

- ☐ No Comment/Consistent
- ☐ Consistent/Comments Attached
- ☐ Inconsistent/Comments Attached
- ☐ Not Applicable

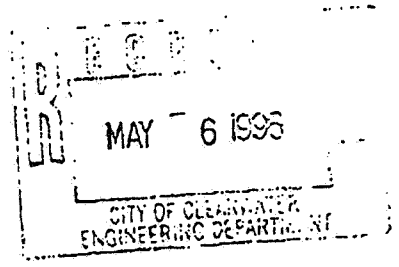
From:

Division/Bureau: OPB/ENV

Reviewer: R. Matis

Date: 4-23-96

George F.Y. EXHIBIT F 8
Wern



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Southeast Regional Office
9721 Executive Center Drive North
St. Petersburg, Florida 33702

May 1, 1996

Mr. Richard Baier, P.E.
Clearwater City Engineer
City of Clearwater, Engineering Administration
P.O. Box 4748
Clearwater, Florida 34618-4748

Dear Mr. Baier:

SUBJECT: Advance Notification
Work Program Item Number: 7117181
City Project Number: 699-9855
State Project Number: 15220-1599
Federal Aid Number: n/a
S.R. 60 Memorial Causeway Bridge Replacement
PD&E Study
City of Clearwater, Pinellas County, Florida

This is in response to your request, dated March 22, 1996, for general comments regarding the subject bridge replacement study. The National Marine Fisheries Service (NMFS) has reviewed the information provided and the following comments are provided for your consideration.

Two alignment alternatives will be studied one which would require relocation of the Clearwater Harbor channel while the other would not. Submerged aquatic vegetation (seagrasses) occurs within the project area and could be adversely affected by construction of the new structure, shading by the new structure and by direct removal from relocation of the channel. Seagrasses are a vital component of the Clearwater Harbor estuarine complex and are beneficial to a variety of commercially and recreationally important finfish and shellfish. Seagrasses produce enormous quantities of detritus, the base of the estuarine food web, and serve as host for large numbers of epiphytes which are grazed upon extensively. The rhizomes of seagrasses bind the sediments, stabilizing the bottom and thereby prevent erosion. Seagrasses also provide refuge for juvenile finfish and shellfish. Compensating for loss of seagrass habitat is difficult, costly and typically the overall results are marginal. It is the position of the NMFS that adverse impacts to seagrasses must be avoided.

Emergent saltmarsh and mangrove habitats also occur in the project area. These areas also provide forage and refuge habitat to a variety of commercially and recreationally important finfish and shellfish. While we recommend that impacts to these areas be avoided to the maximum extent possible compensatory mitigation for unavoidable impacts to these habitat types is typically more successful. Establishment of fringe emergent vegetation, such as smooth cordgrass and/or mangroves, along the causeway shoreline would not only provide habitat value but also serve as shoreline protection.

Due to the highly urbanized nature of the project area and other man-made modifications to the surrounding environment, off-site mitigation for impacts to emergent wetlands may be more ecologically beneficial than on-site mitigation. Therefore, mitigation alternatives enhancing existing restoration activities or existing natural areas within Clearwater Harbor should also be investigated.

Options for removal of the existing structure that involve explosives or other techniques that may affect threatened or endangered species (such as sea turtles) or protected marine mammals (i.e. dolphins) should be coordinated with our Protected Species Management Branch. They can be contacted at the letterhead address above.

We appreciate the opportunity to provide you with our comments. Please direct related comments or questions to Mr. David N. Dale at our St. Petersburg office at the letterhead address above. He may also be contacted at 813/570-5317.

Sincerely,

Edwin J. Hayes

for Andreas Mager, Jr.
Assistant Regional Director
Habitat Conservation Division

cc:
F/SE02
F/SE023-ST PETE
F/SE013

EXHIBIT F 9

U.S. Department of Transportation
United States Coast Guard

Commander
Seventh Coast Guard District

Brickell Plaza Federal Bldg
909 S.E. First Avenue
Miami, Fl 33131
Staff Symbol: (oan)
Ph: (305)536-5621

16591/2420
Serial: 0385

JUN 14 1996

Mr. Richard Baier
Clearwater City Engineer
City of Clearwater
Engineering Administration
P.O. Box 4748
Clearwater, FL 34618-4748

JUN 20

Dear Mr. Baier:

This is in response to your Advance Notification Package for the replacement of the State Road 60 memorial Causeway bridge across the Gulf Intracoastal Waterway, mile 136, at Clearwater, Fl.

A Coast Guard bridge permit will be required for this project. Guide clearances of 100 feet horizontal and 65 feet vertical have been established for this portion of the Gulf Intracoastal Waterway. We recommend however that you contact and survey waterway users to determine whether greater clearances may be required to meet the needs of navigation. This needs analysis should reduce the likelihood of your permit being delayed for navigational considerations. The Coast Guard decision on navigation adequacy is a necessary part of the permit approval process. We will consider any information you provide, the comments responding to the public notice we issue after receiving your application, and all other available information in making this decision.

If no federal funds are to be used for this project, the Coast Guard will be the lead federal agency under the National Environmental Policy Act (NEPA). If the selected alignment or design alternative requires relocation of the Intracoastal Waterway, the Corps of Engineers will be asked to participate as a cooperating agency under the NEPA procedures.

If you plan to use or to request the use of federal funds, the Federal Highway Administration (FHWA) would assume the role of the lead federal agency under NEPA and the Coast Guard would act as a cooperating agency.

Please advise us of your intentions regarding the use of federal funds at the earliest opportunity.

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Enclosed for your use in applying for the permit is a Bridge Permit Application Guide and an Environmental Analysis Checklist. The checklist should be used in the preparation of the State Environmental Impact Report.

If you have any questions, please contact Mr. Walt Paskowsky, project manager at (305) 536-4103.

Sincerely,

J. W. WINSLOW
Chief, Bridge Section
Aids to Navigation and
Waterways Management Branch
Seventh Coast Guard District
By direction of the District Commander