Environmental Assessment

Park Road 22 Bridge, Corpus Christi District

From Whitecap Boulevard to SH 361 (Commodores Drive)

CSJ: 0617-02-064

Nueces County, Texas

March 2016

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried-out by TxDOT pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated December 16, 2014, and executed by FHWA and TxDOT.

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ACRONYMS

ACS	American Community Survey
AOI	Area of Influence
APE	Area of Potential Effects
BMPs	Best Management Practices
BG	Block Group
CBRA	Coastal Barrier Resources Act
CCMPO	Corpus Christ Metropolitan Planning Office
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CGP	Construction General Permit
CT	Census Tract
CWA	Clean Water Act
dB(A)	A-Weighted Decibels
DHHS	Department of Health and Human Services
DOT	Department of Transportation
EA	Environmental Assessment
EFH	Essential Fish Habitat
EMST	Ecological mapping System of Texas
EO	Executive Order
EOR	Element of Occurrence Record
FACU	Facultative upland
FACW	Facultative wet
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FPPA	Farmland Protection Policy Act
GIS	Geographic Information Systems
ISA	Initial Site Assessment
LPST	Leaking Petroleum Storage Tank
MBTA	Migratory Bird Treaty Act
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MPO	Metropolitan Planning Organization
MS4	Municipal Separate Storm Sewer System
MSAT	Mobile Source Air Toxics
MTP	Metropolitan Transportation Plan
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NCHRP	National Cooperative Highway Research Program
NEPA	National Environmental Policy Act of 1969
NOI	Notice of Intent
NRCS	Natural Resources Conservation Service
NWP	Nationwide Permit
OSHA	Occupational Safety and Health Administration
PCN	Pre-Construction Notification
PR	Park Road

Acronyms (Continued)

RPST	Registered Petroleum Storage Tanks
SAL	State Archeological Landmark
SGCN	Species of Greatest Conservation Need
SHPO	Texas State Historic Preservation Officer
SW3P	Storm Water Pollution Prevention Plan
TAQA	Traffic Air Quality Analysis
TARL	Texas Archaeological Research Laboratory
TCAP	Texas Conservation Action Plan
TCEQ	Texas Commission on Environmental Quality
TCMP	Texas Control Management Program
THC	Texas Historical Commission
TIP	Transportation Improvement Program
TPDES	Texas Pollutant Discharge Elimination System
TPWD	Texas Parks and Wildlife Department
TxDOT	Texas Department of Transportation
TXNDD	Texas Natural Diversity Database
U.S.	United States
USACE	U.S. Army Corps of Engineers
U.S.C.	United States Code
USDA	U.S. Department of Agriculture
USDOT	U.S. Department of Transportation
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish & Wildlife Service
VMT	Vehicle Miles Traveled

1.0 INTRODUCTION

The City of Corpus Christi, in conjunction with the Texas Department of Transportation (TxDOT), proposes to construct two bridges (northbound and southbound) within the existing right-of-way of the TxDOT-owned Park Road (PR) 22 facility (hereafter referred to as the proposed project) over a USACE permitted third-party canal (hereafter referred to as the canal). The proposed project is located on Padre Island in Corpus Christi, Nueces County, Texas (**Figure 1-1**). The project limits along PR 22 are from 1,500 feet north of Whitecap Boulevard to 1,300 feet south of SH 361 (Commodores Drive), a distance of approximately 3,000 feet. The logical termini for the proposed project are from Whitecap Boulevard to SH 361 (Commodores Drive), a distance of approximately 5,647 feet.

This Environmental Assessment (EA) evaluates the environmental effects of the construction of the proposed bridges within the TxDOT PR 22 right-of-way. This project is compatible with the canal project, which would allow water exchange as mandated by a United States Army Corps of Engineers (USACE) permit (see **Appendix F**). As approved in the permit, the canal would accommodate boat and pedestrian access. This future canal is considered in this EA's indirect and cumulative effects analyses. In coordination with the USACE, the third party is responsible for the conditions of the Section 404 permitting that included an evaluation of the environmental impacts associated with the excavation and construction of the canal, which is located predominately outside and within the PR 22 right-of-way.

This EA was prepared in accordance with TxDOT Environmental Compliance Toolkits and Environmental Handbooks (January 2015). The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried-out by TxDOT pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated December 16, 2014, and executed by FHWA and TxDOT.

1.1 Existing Facility

PR 22 is currently an at-grade four-lane divided facility with two 12-foot travel lanes in each direction; 10-foot inside and outside shoulders; and a 34-foot wide depressed grassy median for an overall pavement width of 44 feet (**Figure 1-2**). The existing PR 22 right-of-way is 200 feet wide. Drainage is conveyed by open roadside ditches. The existing speed limit is 55 miles per hour and the existing traffic volume is estimated to be approximately 23,900 vehicles per day. Photographs of the existing facility and project area are shown in **Appendix A**.

1.2 Proposed Action

The proposed project would consist of three precast concrete arch spans. The center span would be 46 feet wide and cross the canal. The other two spans, 36 feet wide, would be on either side of the 46 foot span and provide a boardwalk for pedestrians to cross under the roadway. The canal would be approximately 42 feet wide and would include articulated concrete matting to prevent erosion. Sheet pile retaining walls would be employed in the design and the support structures under the water line would be armored to protect the concrete from the water. The vertical profile of PR 22 would be raised approximately 12 feet to span the proposed canal to allow for boats and pedestrian traffic. An estimate of the maximum depth for the excavation of the canal within the TxDOT PR 22 right-of-way is approximately eight feet from the existing roadway elevation with the maximum depth for the bridge structure pilings at -65 feet**.** The majority of the dredging required for the proposed canal would be done mechanically, with some hydraulic dredging required in Lake Padre outside of the TxDOT ROW.

Each of the proposed bridges would be comprised of two 12-foot lanes with 10-foot inside and outside shoulders with one foot railings for an overall bridge width of 46 feet. The 34-foot depressed median would be maintained. The total length of the proposed bridge would be approximately 128 feet.
Additional roadway improvements include the addition of dedicated turn lanes at the proposed Azores Drift Drive (planned for the future development – located approximately halfway between Compass Street and the proposed third-party canal) and Nemo Court, near the south end of the project. Gas, water, sanitary sewer, storm sewer, electric, telephone and cable utilities would require adjustments during construction of the proposed project. No additional roadway improvements are proposed. The project has independent utility since the project is usable and a reasonable expenditure even if no additional transportation improvements in the area are made. Bridge and roadway plans and profiles are included as **Figure 1-3**.

1.3 Project Need

The proposed project is needed in order to maintain traffic access along the existing PR 22 on Padre Island. The two bridges (northbound and southbound) would span the third-party canal that would act as a water exchange and a pedestrian and boat access connection between the existing Padre Isle's canal system (located to the west of PR 22) and Lake Padre (located to the east of PR 22). The water exchange function of the third-party canal is a condition of a USACE permit currently held by a third-party. The existing intricate canal system of the Padre Isles is connected to the lower Laguna Madre, which is a lagoon with a relatively high salt content, especially during summer months (TPWD 2013). The canal would create a flushing action and circulation of water within the canals by tidal influence from the Gulf of Mexico.

1.4 Project Purpose

The purpose of the proposed project is to elevate PR 22 (construct a northbound and southbound bridge) over a third-party canal, which would provide the means for a water exchange and pedestrian movement connection between the existing Padre Isles canal system to Lake Padre and the Gulf of Mexico. In addition, a desired design benefit of the proposed project is the added connectivity to the area at large. The proposed bridge with pedestrian boardwalk along the canal is designed to be compatible with larger adjacent development occurring in the area and will provide pedestrians greater access to area amenities.

1.5 Alternatives

Providing a water exchange between Lake Padre and the Padre Isles canal system is a condition of a USACE permit (currently held by a third-party) to facilitate water exchange during tidal changes. Under the original USACE permit, the proposed structure was proposed to be located about 850 feet to the north of Whitecap Boulevard at the southern terminus of the proposed project. This location was the first alternative considered for the proposed PR 22 bridge project. As shown in **Figure 1-1**, this location would allow the existing Cruiser canal to extend under PR 22 to Lake Padre near Cane Harbor. This location did not have the sight distance necessary to allow a car coming over a potential bridge (in a southbound direction) to be able to see and react to cars that could be backed up at the intersection of PR 22 and Whitecap Boulevard. Additionally, the location was not conducive to maintaining driveway connections with traffic on the existing PR 22.

The second alternative that is currently being proposed is the preferred alternative (or proposed project) located halfway between Whitecap Boulevard and Commodores Drive (SH 361). This location would provide the safest roadway geometry (vertical sight distance) and has the least amount of impacts on driveways.

The No-Build Alternative was also considered in this assessment. This would save the City of Corpus Christi funds that could be used for other projects. However, it would not provide for water exchange as mandated by the USACE permit or a pedestrian movement and boat access connection between the existing Padre Isles canals and Lake Padre. Therefore, the No-Build Alternative serves as a baseline against which the other alternative can be compared.

1.6 Public Involvement

A public meeting was held on April 10, 2012 at the Seashore Learning Center in Corpus Christi, Texas. The meeting was conducted in an open house format with a variety of materials available for viewing between 5:00 pm and 8:00 p.m. Approximately 150 people attended the public meeting (144 residents/members of the public and three public officials and two representatives of two elected officials). During this time, staff members from TxDOT, the City of Corpus Christi, and consultants were available to discuss issues and answer questions from the public regarding the proposed improvements. Project team members described the environmental process and exhibits and answered questions. Conceptual drawings of the proposed project were shown. A video of a rendering of the bridge was played during the meeting. The goals of the public meeting were to:

- Communicate the project's vision and plans through an opportunity for the public to view various schematic alternatives that were developed for the proposed project
- Receive meaningful insight, comments and public input (in writing or orally)
- Answer questions in face-to-face dialogue.

1.7 Funding

The proposed project is identified in the CCMPO's FY 2010-2035 *Metropolitan Transportation Plan (MTP)* and *the 2013–2016 Transportation Improvement Program* (TIP). The TIP and MTP project lists are presented in **Appendix B**. The proposed project is 100 percent funded by the City of Corpus Christi.

As of January 2016, project construction costs are estimated at $10,143,490, which includes the construction of the bridges and the canal (including dredging) within TxDOT right-of-way. The proposed project is scheduled to let in July 2016. Construction would begin in September 2016 and is expected to be completed by December 2017. Construction of the remaining canal would be funded separately by a third-party and is expected to be completed after the PR 22 construction activities are completed.

2.0 SURROUNDING AREA

2.1 Land Use

The proposed project is located on Padre Island within of the City of Corpus Christi. Due to the proximity of the Laguna Madre and Gulf of Mexico, common uses in the area include water-related recreational uses, such as fishing, boating, swimming, and camping. As shown in **Figure 2-1**, nearby land use consists of undeveloped land, water courses (e.g. Lake Padre), low and medium-density residential with lower levels of commercial, conservation areas, and high-density residential (Corpus Christi 2008). There are several nearby parks, including the Padre Island National Sea Shore, Mustang Island State Park, local parks (e.g. Packery Channel Park and Padre Bali Park), Schlitterbahn Country Club Beach Resort, and a golf course.

2.2 Natural Setting

The proposed project is located approximately one mile west of the Gulf of Mexico within the Laguna Madre Barrier Island and Coastal Marshes Ecoregion (Level IV) of South Texas. This region is distinguished by its hypersaline lagoon system, vast seagrass meadows, wide tidal mud flats, large overwintering redhead duck population, numerous protected species, great fishery productivity, and a narrow barrier island with a number of washover fans. With an annual precipitation of 27 to 29 inches, this coastal zone has a more semi-arid climate than the upper Texas coast. However, there is extreme variability in annual rainfall, and evapotranspiration is generally two to three times greater than precipitation. Water in the Laguna Madre is commonly hypersaline during the summer, due to its shallow depth, high evaporation rates and limited fresh water input. Combined with the Laguna Madre of Tamaulipas, it is the largest hypersaline system in the world. The shallow depth, clear water, and warm climate are conducive to seagrass production. Nearly 80 percent of seagrass beds in Texas are now found in the Laguna Madre. The historically highly productive commercial fisheries have now given way to an important sport fishery for species such as red drum, black drum, and spotted sea trout. A few stands of black mangrove tidal shrub occur in this region (USEPA 2003).

As shown in **Figure 1-1**, Lake Padre is located to the east of PR 22 and Padre Isle's canal system is located to the west of PR 22. The recently-constructed Packery Channel is situated to the northeast of Lake Padre and the proposed project. The Packery Channel flows through Padre Island, generally connecting the Gulf of Mexico with the Laguna Madre.

3.0 AFFECTED ENVIRONMENT

3.1 Socioeconomic Factors

Census data for this analysis was reviewed for several cartographic boundary types defined by the U.S. Census Bureau. These included (from largest area to smallest area): Census Tract (CT), Block Group (BG), and Block data. The *Guidebook for Identifying, Measuring and Mitigating Environmental Justice Impacts of Toll Roads* suggests that analysis of only larger census boundaries could result in overlooking of smaller minority/low-income population groups. The study finds that "there is a possibility that smaller low-income and minority communities might be overlooked at more aggregate levels of geographic analysis." (The University of Texas at Austin, 2006). Not all Census data is available at the Block level; therefore, the following tables in this chapter include data for the smallest "available" census boundary type. In each case, data for the smallest available census boundary type was compared to the next larger geographic comparator (i.e. Block-to-BG and BG-to-CT).

The American Community Survey (ACS) collects information such as age, race, income, commute time to work, home value, veteran status, and other important data. By using multi-year estimates, the ACS increases statistical reliability of the data for less populated areas and small population sub-groups. In 2010, the Census Bureau released the first five-year estimates for small areas.

Table 3-1: 2000 and 2010 Population

Area	2000	2010	Change	
			Quantity	Percent Increase
Comparison Area (CT)				
CT-62	8,529	9,235	706	8.3
Block Groups				
CT-62 BG-1	974	1,222	248	25.5
CT-62 BG-2	3,500	4,119	619	17.7
CT-62 BG-3	4,055	3,894	-161	4.0 (decrease)

CT = Census Tract, BG = Block Group

Source: U.S. Census Bureau, 2005-2009 American Community Survey, Table B01003. American Community Survey data are estimates; they are not counts. Each estimate has a margin of error (i.e. +/-12). 2010 Census Summary File 1—Texas [machine-readable data files]/prepared by the U.S. Census Bureau, 2011. Table P1. (Data obtain from Cubit Planning on February 27, 2015.)

As shown in the table above, with the exception of BG-3, which saw a population decrease between 2000 and 210, the project area BGs experienced higher rates of population growth as compared to that of the project area CT.

3.1.1 Community Cohesion

Community cohesion is a term that refers to an aggregate quality of life in a residential area. Cohesion is a social attribute that indicates a sense of community, common responsibility, and social interaction within a limited geographical area. It is the degree to which residents have a sense of belonging to their neighborhood or community or a strong attachment to neighbors, groups, and institutions as a continual association over time.

The proposed project is located in a tourism, resort, and retirement community that is characterized by residential, commercial, mixed, and recreational uses. Although Padre Island is a popular destination for vacationers, spring breakers, and other visitors, it is made up of residential neighborhoods and businesses that support a local community. Due to the proximity of the ocean, many residents may use nearby housing as a second or vacation home.

No-Build Impact

Under the No-Build alternative, no impact (adverse or beneficial) to community cohesion in the project area would be expected.

Build Impact

Since the project is on an existing roadway, neighborhoods and communities would not be spilt or isolated. No cross-streets would be adversely impacted, and all such streets within the project limits would remain intact. The proposed project would not cause major changes to traffic patterns between residences, business, or recreational areas in the vicinity. Short-term traffic disruptions are expected to occur during construction activities. After the completion of construction, traffic patterns would resume to pre-construction status on PR 22. Access to the adjacent golf course and neighborhoods would remain the same along PR 22. The proposed project would not adversely affect community cohesion.

3.1.2 Americans with Disabilities Act (ADA)/ Section 504 of the Rehabilitation Act of 1973

The Americans with Disabilities Act (ADA) 42 USC 126 signed in 1990, prohibits discrimination and guarantees that people with disabilities have opportunities equal to others for participating in mainstream American life. The ADA mandates that recipients of federal aid and state and local entities responsible for roadways and pedestrian facilities do not discriminate on the basis of disability in any highway transportation program, activity, service or benefit they provide to the general public.

No-Build Impact

Under the No-Build Alternative, no disproportionate impact (adverse or beneficial) to disabled populations would be expected.

Build Impact

There are currently no pedestrian facilities along PR 22 at the location of the proposed bridge or between the project logical termini. The addition of pedestrian facilities along PR 22 are not proposed for the current project. Therefore, under the Build Alternative, no disproportionate impact (adverse or beneficial) to disabled populations along PR 22 would be expected by the proposed project. The final design of the proposed boardwalk by the City of Corpus Christi for pedestrians to cross under the roadway will take into account the applicable requirements of the ADA.

3.1.3 Limited English Proficiency

Executive Order 13166, *Improving Access to Services for Persons with Limited English Proficiency*, requires agencies to examine the services they provide, identify a need for services to those with limited English proficiency (LEP), and develop and implement a system to provide those services so that LEP persons can have meaningful access to them. The U.S. Department of Justice defines LEP individuals as those "who do not speak English as their primary language and who have a limited ability to read, write, speak, or understand English" (67 FR 41459). As shown in **Table 3-5**, the highest percentage of LEP population within the project area BGs is seven percent within BG-2. In comparison, the amount of LEP

populations with Corpus Christi and Nueces County are more than twice as high with 16.3 percent and 17.4 percent, respectively.

Table 3-5: Limited English Proficiency

	5 Years and Older Population	Number Who Speak English "Not Well" or "Not at All"	Spanish Speakers/ Percent	Percent LEP
Comparison Areas				
CT-62	8,874	331	276 3.1%	3.7%
Census Boundaries				
CT-62 BG-1	1,356	56	52 3.8%	4.1%
CT-62 BG-2	3,678	258	207 5.6%	7.0%
CT-62 BG-3	3,840	17	17 0.4%	0.4%

Source: U.S. Census Bureau, 2007-2011 American Community Survey Table B16004 & Table B16004. Adapted from Cubit Planning.

No-Build Impact

Under the No-Build Alternative, no impact (adverse or beneficial) to persons with limited English proficiency in the area would be expected.

Build Impact

ACS data shown in **Table 3-5** indicates the presence of 276 total Spanish language speakers. TxDOT will comply with EO 13166 by ensuring that LEP persons have access to information about the proposed project, and will provide meaningful opportunities for providing input on the project. Measures to do so will include providing bilingual English-Spanish translations of:

- Newspaper public meeting/public hearing advertisement notices;
- Public meeting/hearing notices to adjacent property owners;
- Hand-out materials at the public meetings/hearings; and
- Providing Spanish language translation upon request.

Since there are no Spanish-language newspapers published in the Corpus Christi area, the legal advertisement for the April 2012 public meeting was published in English with a statement in Spanish at the end of the notice providing a name and phone number of someone who could provide the advertisement in Spanish. No requests were made. A Spanish-language translator was also available at the April 2012 public meeting, but no requests were made. Since the project area contains Hispanic residents as the second highest in population after "Non-Hispanic White", future public involvement activities would include publishing meeting notices in English with availability for Spanish, and making Spanish-language translation available during other public outreach activities. Thus, the requirements of EO 13166 appear to be satisfied.

3.1.4 Right-of-Way Acquisition, Relocations and Displacements

No-Build Impact
The No-Build Alternative is the same as the Build Alternative with respect to right-of-way acquisition and displacements (no adverse impact).

Build Impact
The existing TxDOT right-of-way width is 200 feet. No new right-of-way, permanent easements or temporary easements would be required. There would be no residential or commercial displacements for the proposed project.

3.1.5 Bicycle and Pedestrian Considerations

No-Build Impact
Under the No-Build Alternative there would be no impact (adverse of beneficial) to bicyclists of pedestrians.

Build Impact
The 2010 U.S. DOT Policy Statement on *Bicycle and Pedestrian Accommodation Regulations and Recommendations* is to incorporate safe and convenient walking and bicycling facilities into transportation projects. Existing and proposed 10-foot wide shoulders on PR 22 would accommodate bicyclists. Underneath the proposed project, a 15-foot wide pedestrian/bicycle path would be provided on each side of the future third-party canal.

3.1.6 Environmental Justice

Executive Order (EO) 12898 "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" requires each federal agency to "make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations." The Federal Highway Administration (FHWA) has identified three fundamental principles of environmental justice:

1. To avoid, minimize, or mitigate disproportionately high and adverse human health or environmental effects, including social and economic effects, on minority populations and low-income populations;
2. To ensure the full and fair participation by potentially affected communities in the transportation decision-making process; and
3. To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority populations and low-income populations.

Disproportionately high and adverse human health or environmental effects are defined by FHWA as adverse effects that:

1. Are predominately borne by a minority population and/or a low-income population; or
2. Would be suffered by the minority population and/or low-income population and are appreciably more severe or greater in magnitude than the adverse effects that would be suffered by the non-minority population and/or non-low-income population.

The FHWA Order 6640.23 defines "low-income" as "a person whose household income is at or below the U.S. Department of Health and Human Services (DHHS) poverty guidelines." A "low-income population" is a readily identifiable group of low-income persons who live in geographic proximity, and if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who would be similarly affected by a proposed FHWA program, policy, or activity. The DHHS uses a set of income thresholds that vary by family size to determine poverty levels. For 2015, the threshold for a four-person family living in the continental U.S. is $24,250 (DHHS 2015).

Census data for this analysis was reviewed for each CT, BG, and individual block. Not all Census data is available at the block level; therefore, the following tables in this chapter include data for the smallest "available" census boundary type.

Table 3-3: Household Income and Poverty Status

	Total Households	Median Household Income	Persons Below Poverty Level		
			Population for Whom Poverty Status is determined	Quantity	Percent
Comparison Area (City)					
Corpus Christi	111,741	47,481	302,956	55,002	18.2
Census Tract					
CT-62	4,300	$85,000	9,842	359	3.6

Source: U.S. Census Bureau, 2009-2013 American Community Survey, Tables B11001, B19013, and Table B17001. ACS data are estimates; they are not counts. Income data is provided in 2013 inflation adjusted dollars.

As shown in the table above, the project area CT has a lower percentage of persons below the poverty level, as compared to the comparison area (City of Corpus Christi).

According to the Council on Environmental Equality (CEQ), "Minority populations should be identified where either (a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate geographical analysis."

Table 3-4: 2010 Racial and Ethnic Composition

Census Boundary	Total Popula-tion	Not Hispanic or Latino Population of One Race						Two or More Races	Hispanic or Latino of Any Race	Total Minority Population
		White	Black or African American	Indian & Alaska Native	Asian	Pacific Islander	Other Race			
Comparison Area (CT)										
CT-62	9,235	7,547 81.7%	68 0.7%	33 0.4%	161 1.7%	9 0.1%	10 0.1%	113 1.2%	1,294 14.0%	1,688 18.3%
Block Groups										
CT-62 BG-1	1,222	1,003 82.1%	11 0.9%	12 1.0%	26 2.1%	0	3 0.2%	17 1.4%	150 12.3%	219 17.9%
CT-62 BG-2	4,119	3,336 81.0%	30 0.7%	14 0.3%	71 1.7%	6 0.1%	3 0.1%	59 1.4%	600 14.6%	783 19.0%
CT-62 BG-3	3,894	3,208 82.4%	27 0.7%	7 0.2%	64 1.6%	3 0.1%	4 0.1%	37 1.0%	544 14.0%	686 17.6%

Source: 2010 Census Summary File 1—Texas [machine-readable data files]/prepared by the U.S. Census Bureau, 2011. Table P9. Adapted from Cubit Planning

The table above shows that the total minority population does not exceed 50 percent within the project area BGs.

No-Build Impact

Under the No-Build Alternative, no impact (adverse or beneficial) to minority or low-income populations would be expected.

Build Impact

Implementation of the proposed project does not require residential or commercial displacements. The project would not result in the denial of access to public facilities, businesses, residential areas, or public transportation for minority or low-income populations. Adverse or disproportionate impacts on environmental justice communities based on the race or ethnicity are not anticipated.

3.1.7 Farmland

No-Build Impact

Under the No-Build Alternative, there would be no need to acquire farmland.

Build Impact

Land surrounding the project area is made up of marshlands, as well as existing and planned residential and commercial establishments. The area has not historically or is not presently being used for farming. Since no new right-of-way would be required, the proposed project is exempt from complying with the Farmland Protection Policy Act and does not require coordination with Natural Resources Conservation Service (NRCS).

3.2 Cultural Resources

Cultural resources are structures, buildings, archeological sites, districts (a collection of related structures, buildings, and/or archeological sites), cemeteries and objects. Federal and state laws require consideration of cultural resources during project planning. At the federal level, NEPA and the National Historic Preservation Act (NHPA) of 1966, among others, apply to transportation projects such as this one. In addition, state laws such as the Antiquities Code of Texas apply to these projects. Compliance with these laws often requires consultation with the Texas Historical Commission/Texas State Historic Preservation Officer (SHPO) and/or federally-recognized tribes to determine the project's effects on cultural resources. Review and coordination of the proposed project followed approved procedures for compliance with applicable laws.

3.2.1 Historic Resources

No-Build Impact
Under the No-Build Alternative, there would be no potential to impact historic resources as a result of project construction.

Build Impact
Reviews of the National Register of Historic Places, State Archeological Landmarks, and Recorded Texas Historic Landmarks indicated that historically significant resources have not been previously documented within the area of potential effects (APE). It has been determined through consultation with SHPO that the APE for the proposed project is 150 feet from the existing right-of-way, due to a proposed grade separation. A site visit did not reveal historic resources built prior to 1968 located within the project APE.

Pursuant to Stipulation V—*Undertakings with No Potential to Affect Historic Resources*—of the First Amended Programmatic Agreement Regarding the Implementation of Transportation Undertakings (PA-TU) between FHWA, SHPO, the Advisory Council on Historic Preservation, and TxDOT, it was determined that no historic properties are present and, therefore, the proposed project does not have a potential to affect historic properties. It was also determined that individual project coordination with SHPO would not be required. Historic clearance and coordination documentation is presented in **Appendix C**.

3.2.2 Archeological Resources

No-Build Impact
Under the No-Build Alternative, there would be no potential to impact archeological resources as a result of project construction.

Build Impact
Because this project involves a federal permit, the project must comply with the requirements of Section 106 of the NHPA, its implementing regulations of 36 CFR Part 800, and the Texas Antiquities Code. TxDOT has met the requirements of Section 106 under the terms and conditions of the First Amended Programmatic Agreement among the FHWA, TxDOT, the SHPO, and the Advisory Council on Historic Preservation regarding the Implementation of Transportation Undertakings (PA, 2005). TxDOT has satisfied the requirements of the Texas Antiquities Code by following the stipulations of the MOU between TxDOT and the THC.

As specified in the PA and MOU, the archeological APE comprises existing right-of-way and any other areas impacted by the proposed project. Based on background review there are no known archeological sites eligible for listing on the NRHP within the APE. Based on the extent of existing disturbance within the right-of-way, TxDOT ENV's Archeological Studies program did not recommend an intensive archeological linear survey of the APE. TxDOT-ENV completed consultations with the SHPO and other consulting parties as required under the provisions of the PA and MOU. A copy of the stamped SHPO cultural resources clearance dated July 1, 2013 is included in **Appendix C**.

In the event that unanticipated archeological deposits are encountered during construction, work in the immediate area would cease and TxDOT archeological staff would be contacted to initiate post-review discovery procedures under the provisions of the PA-TU and MOU.

3.3 Section 4(f) Resources

No-Build Impact
Under a No-Build Alternative, there would be no potential to affect Section 4(f) or Section 6(f) resources.

Build Impact
As shown in **Figure 3-2**, public parks near the project area, include Padre Isles Country Club and Golf Course, Doudon Park, Padre Balli Park, Commodore Park, Ulberg Park and Packery Channel Park. The proposed project would not require the taking of land from public parks, recreational areas, wildlife and waterfowl refuge lands, or historic sites of national, state or local significance as determined by federal, state or local officials having jurisdiction over such resources. No impacts are expected to these Section 4(f) resources. Coordination would not be necessary under Section 4(f) of the 1966 Department of Transportation Act.

3.4 Visual Impacts

No-Build Impact
Under the No-Build Alternative, there would be no impact (adverse of beneficial) to the visual aesthetics of the area.

Build Impact
The proposed project would introduce elements that are considered in character, size, scale, and setback in relation to project surroundings. Adverse visual impacts are not anticipated.

3.5 Hazardous Materials

No-Build Impact
Under the No-Build Alternative, additional right-of-way would not be acquired; therefore, there would be no potential to encounter hazardous materials during construction.

Build Impact
Based on the proposed activities (i.e. bridge construction, retaining walls, base, overlay, signage, pavement markings), an Initial Site Assessment (ISA) was conducted to identify potential hazardous materials in the project area. The ISA consisted of the following actions: identification of previously known hazmat conditions; preliminary design review; identification of potential hazardous materials;

identification of data collection actions; current and past land use information; map review and regulatory records review; conduct interviews, document conclusions, and determine the need for further investigations, or special considerations; and a project site visit. An analysis of the ISA data indicates hazardous material impacts are not anticipated and further investigation is not required.

The proposed project includes the relocation of the domestic water pipelines on the western side of PR 22 that are suspected to contain asbestos. Removal/disturbance of asbestos pipelines would be accomplished in accordance with the Occupational Safety and Health Administration and applicable Asbestos National Emission Standards for Hazardous Air Pollutants standards, including the use of trained personnel working under the supervision of an asbestos competent person.

Within the project limits, there are three registered petroleum storage tanks (RPST). Two of the registered RPSTs are listed as leaking petroleum storage tanks (LPST) sites. The historical land use research and survey did not reveal other abandoned or active gasoline service stations. As previously stated, right-of-way acquisition or easements are not required for the project. Locations of PST sites and other applicable hazardous materials information are presented under separate cover within the Initial Site Assessment for the proposed project, which is available under separate cover and on file with the TxDOT Corpus Christi District Office.

A review of Texas Commission on Environmental Quality's (TCEQ's) leaking petroleum storage tank on-line database query indicated two LPST sites adjacent to the project area. Since excavation greater than three feet and utility adjustments would be required, the LPST and RPST files for facilities adjacent to the project were reviewed.

LPST No. 116335 is located near the north end of the project and is addressed at 14526 S. Padre Island Drive. The status of the site indicates that groundwater is impacted and the case is closed. According to the file review, the static water level in the monitoring wells is approximately four to six feet below the ground surface. BTEX and MTBE levels found in Monitoring Well (MW)-1 are currently below action level. The groundwater gradient at the facility appears to flow to the northeast, away from the project. According to the July 16, 2009 transmittal to the responsible party from the TCEQ, the maximum groundwater contamination concentrations are below construction worker target levels and have been adequately delineated. Sufficient monitoring was completed to demonstrate a stable or decreasing contaminate plume. A final site closure letter was sent via certified mail. Although contaminated groundwater exists on the adjacent property, based on the northeastern groundwater gradient, it is not anticipated that contaminated groundwater or soil would be encountered during construction.

LPST No. 091960 is located near the southeast terminus of the project addressed at 15302 S. Padre Island Drive. The status and priority of the site indicates that groundwater is impacted and the case is closed. According to the file review, the static water level in the monitoring wells is approximately 1.4 meters (4.7 feet) below the ground surface. A final site closure report was received by the TCEQ on May 11, 2004 to document the plugging of monitoring wells. A final site closure letter to the responsible party was sent via certified mail. Although contaminated groundwater exists on the adjacent property based on the groundwater gradient to the northeast away from the project, it is not anticipated that contaminated groundwater or soil would be encountered during construction. During the preliminary investigations, the following occurred:

- No oil wells or gas wells were identified within the search area;
- No pipelines were found to bisect the project;

- No landfills were identified within the search area;
- No bridges or structures would be demolished as part of the project; therefore the potential to contain lead-based paint does not exist; and
- No Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Sites were identified within the search area.

3.6 Noise

No-Build Impact

Under a No-Build Alternative, there would be no increase in noise exposure for receivers identified in the analysis below.

Build Impact

This analysis was accomplished in accordance with TxDOT's (FHWA approved) Guidelines for Analysis and Abatement of Roadway Traffic Noise (2011). Sound from highway traffic is generated primarily from a vehicle's tires, engine and exhaust. It is commonly measured in decibels and is expressed as "dB." Sound occurs over a wide range of frequencies. However, not all frequencies are detectable by the human ear; therefore, an adjustment is made to the high and low frequencies to approximate the way an average person hears traffic sounds. This adjustment is called A-weighting and is expressed as "dB(A)."

Because traffic sound levels are never constant due to the changing number, type and speed of vehicles, a single value is used to represent the average or equivalent sound level and is expressed as "Leq." The traffic noise analysis typically includes the following elements:

- Identification of land use activity areas that might be impacted by traffic noise.
- Determination of existing noise levels.
- Prediction of future noise levels.
- Identification of possible noise impacts.
- Consideration and evaluation of measures to reduce noise impacts.

The FHWA has established Noise Abatement Criteria (NAC) for various land use activities that are used as one of two means to determine when a traffic noise impact would occur. **Table 3-6** describes these criteria.

Table 3-6: Noise Abatement Criteria

Activity Category	dB(A) Leq	Description of Land Use Activity Areas
A	57 (exterior)	Lands on which serenity and quiet are of extra ordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (exterior)	Residential

Activity Category	dB(A) Leq	Description of Land Use Activity Areas
C	67 (exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreational areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 (interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E	72 (exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties, or activities not included in A-D or F.
F	--	Agricultural, airports, bus yards, emergency services, industrial, logging, maintenance, facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	--	Undeveloped lands that are not permitted.

Primary consideration is given to exterior areas (Categories A, B, C and E) where frequent human activity occurs. However, interior areas (Category D) are used if exterior areas are physically shielded from the roadway, or if there is little or no human activity in exterior areas adjacent to the roadway. A noise impact occurs when either the absolute or relative criterion is met:

- Absolute criterion: the predicted noise level at a receiver approaches, equals or exceeds the NAC. "Approach" is defined as one dB(A) below the NAC. For example: a noise impact would occur at a Category B residence when the noise level is predicted to be 66 dB(A) or above.

- Relative criterion: the predicted noise level substantially exceeds the existing noise level at a receiver even though the predicted noise level does not approach, equal or exceed the NAC. “Substantially exceeds” is defined as more than 10 dB(A). For example, a noise impact would occur at a Category B residence when the existing level is 54 dB(A) and the predicted level is 65 dB(A) (11 dB(A) increase).

When a traffic noise impact occurs, noise abatement measures must be considered. A noise abatement measure is a positive action taken to reduce the impact of traffic noise on an activity area. The FHWA traffic noise modeling software was used to calculate existing and predicted traffic noise levels at receiver locations. **Figure 3-3** presents the sensitive noise receivers that could be affected by traffic noise and potentially benefit from feasible and reasonable noise abatement. The traffic noise model primarily considers the number, type and speed of vehicles; highway alignment and grade; cuts, fills and natural berms; surrounding terrain features; and locations of activity areas likely to be affected by traffic noise.

As indicated in the table below, the proposed project would result in a traffic noise impact and the following noise abatement measures were considered: traffic management, alteration of horizontal

and/or vertical alignments, acquisition of undeveloped property to act as a buffer zone and the construction of noise barriers.

Table 3-7: 2032 Predicted Traffic Noise Levels (dB[A] Leq)

Receiver	NAC Category	NAC Level	Existing	Predicted 2032	Change (+/-)	Noise Impact
R1 (Residence)	B	67	65	**67**	+2	**Yes**
R2 (Residence)	D	52	35	37	+2	No
R3 (Residence)	B	67	62	64	+2	No
R4 (Restaurant)	E	72	62	64	+2	No

As indicated above in the table above, the proposed project would result in a traffic noise impact. The following noise abatement measures were considered: traffic management, alteration of horizontal and/or vertical alignments, and acquisition of undeveloped property to act as a buffer zone and the construction of noise walls.

Before abatement measures can be proposed for the project, it must be feasible and reasonable. In order to be feasible, abatement measures must be able to reduce the noise level at an impacted receiver by at least five dBA. To be reasonable, abatement measures must not exceed the cost-effectiveness criterion of $25,000 for each receiver that would benefit by a reduction of at least five (5) dBA. Additionally, the abatement measure must be able to reduce the noise level of at least one first-row receiver by at least seven (7) dBA.

Traffic management or altering the flow of traffic for the purpose of lowering noise levels would degrade the project's design effectiveness and functionality. Substantial speed reductions would be required to lower noise levels by a readily perceptible amount and would be detrimental to the efficient movement of traffic on PR 22. Other measures, such as time or use restrictions for certain vehicles are not allowed on state highways.

Alteration of horizontal and/or vehicle alignments would consist of an alternation of the existing alignment that displaces existing businesses and residences, require additional right-of-way, and would not be cost effective or reasonable. Buffer zone or the acquisition of undeveloped property to act as a buffer zone is designed to avoid rather than abate traffic noise impacts and, therefore, is not feasible. Noise barriers are the most commonly used noise abatement measure. Noise barriers were evaluated for each of the impacted receiver locations (**Figure 3-3**) with the following results:

1. Receiver R1 represents a residential condominium building with a driveway facing the roadway. A continuous noise barrier would restrict access to these residences. A gap in the noise barrier would satisfy access requirements but the resulting non-continuous barrier segments would not be sufficient to achieve the minimum, feasible reduction of 5 dB(A) or the noise reduction design goal of 7 dB(A).

None of the abatement measures would be both feasible and reasonable; therefore, noise abatement measures are not proposed for the project area. To avoid noise impacts that may result from future development of properties adjacent to the proposed project, local officials responsible for land use

control programs must ensure, to the maximum extent possible, that no new activities are planned or constructed along or within the 2032 predicted noise impact contours and distances, which are identified in the table below from the edge of the existing right-of-way for land use categories B, C, and E.

Table 3-8: Year 2032 Predicted Noise Impact Contours

Land Use	Impact Contour (dB(A))	Distance from Right-of-Way (feet)
NAC Category B and C	66 dB(A)	40
NAC Category E	71 dB(A)	5

NAC = Noise Abatement Criteria

Noise associated with project construction is difficult to predict. Heavy machinery, the major source of noise during construction, is constantly moving in random patterns. However, construction normally occurs during daylight hours when occasional loud noises are more tolerable. None of the receivers are expected to be exposed to construction noise for a long duration; therefore, extended disruptions of normal activities are not expected. Provisions would be included in plans and specifications that require the contractor to make every reasonable effort to minimize construction noise through abatement measures, such as work-hour controls and proper maintenance of muffler systems.

A copy of this traffic noise analysis will be made available to local officials to ensure, to the maximum extent possible, future developments are planned, designed and programmed in a manner that would avoid traffic noise impacts. On the date of approval of this document (date of public knowledge), FHWA and TxDOT are no longer responsible for providing noise abatement for new development adjacent to proposed project.

3.7 Air Quality

3.7.1 National Ambient Air Quality Standards–Transportation Conformity

No-Build Impact
Under the No-Build Alternative, there would be no change in air quality impacts (adverse or beneficial) relative to the existing condition.

Build Impact
The project is located in Nueces County, which is in an area designated in attainment or unclassifiable for all NAAQS; therefore, the transportation conformity rules do not apply.

3.7.2 Carbon Monoxide Traffic Air Quality Analysis (TAQA)

No-Build Impact
Under the No-Build Alternative, there would be no potential need to conduct a Traffic Air Quality Analysis (TAQA).

Build Impact
Generally, projects such as the proposed construction of bridges are considered exempt from a Traffic Air Quality Analysis (TAQA). The proposed project would not add capacity to an existing facility. Current and future emissions should continue to follow existing trends not being affected by the proposed project. Due to the nature of this project, further carbon monoxide analysis was not required.

3.7.3 Mobile Source Air Toxics (MSATs)

No-Build Impact
Under the No-Build Alternative, there would be no change in MSAT impacts relative to the existing condition.

Build Impact
The purpose of this project is to elevate PR 22 by constructing two bridges over a future third-party canal. This project has been determined to generate minimal air quality impacts for CAAA criteria pollutants and has not been linked with any special MSAT concerns. As such, this project will not result in changes in traffic volumes, vehicle mix, basic project location, or any other factor that would cause an increase in MSAT impacts of the project from that of the no-build alternative. Moreover, EPA regulations for vehicle engines and fuels will cause overall MSAT emissions to decline significantly over the next several decades. Based on regulations now in effect, an analysis of national trends with EPA's MOVES model forecasts a combined reduction of over 80 percent in the total annual emission rate for the priority MSAT from 2010 to 2050 while vehicle-miles of travel are projected to increase by over 100 percent. This will both reduce the background level of MSAT as well as the possibility of even minor MSAT emissions from this project.

3.7.4 Congestion Management Process/System

No-Build Impact
Under the No-Build Alternative, there would be no impact (adverse or beneficial) to area traffic congestion.

Build Impact
This project is not adding single occupancy vehicle (SOV) capacity to an existing facility; therefore a Congestion Management Process (CMP)/System (CMS) analysis is not required.

3.7.5 Indirect & Cumulative Impacts Air Quality Analysis

No-Build Impact
Under the No-Build Alternative, there would be no indirect or cumulative impacts (adverse of beneficial) to the project area.

Build Impact
The proposed project would not result in meaningful changes in traffic volumes, vehicle mix, location of existing roadways, or other factors that would cause an increase in emissions impacts relative to the No-Build Alternative. Therefore, the project would not result in actions that could possibly impact air quality. As such, TxDOT/FHWA has determined that the proposed project would generate minimal

indirect and cumulative impacts on air quality. Consequently, a comprehensive indirect and cumulative Impacts analysis for air quality was not required for this project.

3.7.6 Construction Emissions Reduction

No-Build Impact
Under the No-Build Alternative, there would be no need to control the emissions from construction equipment and vehicles.

Build Impact
During the construction phase of this project, temporary increases in air pollutant emissions may occur from construction activities. The primary construction-related emissions are particulate matter (fugitive dust) from site preparation. These emissions are temporary in nature (only occurring during actual construction); it is not possible to reasonably estimate impacts from these emissions due to limitations of the existing models. However, the potential impacts of particulate matter emissions will be minimized by using fugitive dust control measures such as covering or treating disturbed areas with dust suppression techniques, sprinkling, covering loaded trucks, and other dust abatement controls, as appropriate.

The construction activity phase of this project may generate a temporary increase in MSAT emissions from construction activities, equipment and related vehicles. The primary MSAT construction related emissions are particulate matter from site preparation and diesel particulate matter from diesel powered construction equipment and vehicles. The Texas Emissions Reduction Plan (TERP) includes incentive programs to encourage the development of multi-pollutant approaches to ensure that the air in Texas is both safe to breathe and meets minimum federal standards. TxDOT encourages construction contractors to utilize this program to the fullest extent possible to minimize diesel emissions. Information about the TERP program can be found at: http://www.tceq.state.tx.us/implementation/air/terp/. However, considering the temporary and transient nature of construction-related emissions, as well as the mitigation actions to be utilized, it is not anticipated that emissions from construction of this project will have any significant impact on air quality in the area.

3.8 Water Resources

3.8.1 Section 404 of the Clean Water Act (CWA), Waters of the U.S.

No-Build Impact
Under the No-Build Alternative, there would be no potential to impact potential waters of the U.S.

Build Impact
Wetlands affected by the proposed project are located within the roadside ditches. Although roadside ditches are not normally jurisdictional, tidally-influenced roadside ditches located on barrier islands are jurisdictional according to the USACE-Galveston District. Wetlands located along the western right-of-way are considered to have a contiguous connection to wetlands located on the adjacent Schlitterbahn resort property, and affected wetlands along the eastern right-of-way are considered to be tidally-influenced.

The proposed project would result in impacts to potentially jurisdictional wetlands related to the following activities:

- Permanent Impact (Approximately 0.415 acre); Permanent impacts would result from bridge and canal construction.
- Temporary Impact (Approximately 3.91 acre): The construction of the bridges would require the installation of temporary detours to route traffic from one side of the divided facility to the other as the bridges would be built in such a manner to maintain two lanes of traffic during construction. Temporary detours would be limited to the minimum width necessary for vehicles and would typically be constructed with stabilized, clean rock and/or soil material. Following construction of the bridges, the temporary detours would be removed and the right-of-way would be re-graded to match pre-existing contours, stabilized, and re-vegetated.

Table 3-9: Impacts to Waters of the U.S.

Name of Water Body or other location indicator	Existing Structure	Proposed Work or Structure	Permanent Fill		Temporary Fill	
			Open Waters	Wetlands or other Special Aquatic Sites	Open Waters	Wetlands or other Special Aquatic Sites
PR22 west of Lake Padre (Bridge location)	At-grade, four lane divided highway	Elevate PR 22 (two bridges) over proposed canal	0	0.415 acres	0	3.91 acres

NWP=Nationwide Permit; PCN=Preconstruction Notification; IP=Individual Permit

A Section 404 permit and mitigation would be required. Permanent wetland impacts would be mitigated under an existing permit held by a private developer (SWG-2000-02743, Gulf Shores Joint Venture). A permit amendment dated March 12, 2014 describes the following, which pertains to the proposed PR 22 project:

> *The construction of the bridge will require temporary impacts, including the installation of temporary detours to route traffic. The construction of this bridge will impact minimal acreage of wetlands in the adjacent drainage ditch, which may not be jurisdictional. Estimates show 3.91 acres of temporary impacts to wetlands. The temporary detours will be limited to the minimum width necessary for vehicles and will be constructed with stabilized, clean rock and/or soil material. The proposed modification of the bridge and canal construction will impact 0.415 acres of emergent wetlands within the Park Road 22 right-of-way. Compensatory mitigation will be provided at a 2:1 ratio for emergent wetland impacts. The mitigation plan includes a proposed high marsh area (0.42 acres), a low marsh area (0.48 acres), a vegetative pond (0.07 acres), and an area of open water (0.03 acres) within the mitigation site to promote flora and fauna species diversity and function. The permittee would implement the required mitigation during construction of the project changes.* (Gulf Shores 2014)

On October 7, 2015 the USACE issued a Memorandum titled *Department of the Army Environmental Assessment and Statement of Findings for the* (SWG-2000-02743) *Permit Application* (hereinafter SOF). The SOF constitutes the "Environmental Assessment, Section 404(b)(1) Guidelines Evaluation, Public

Interest Review, and Statement of Findings for the subject application" (USACE 2015a). According to the SOF, a 30-day public notice was published on 7 October 2014, and the comment period closed on November 7, 2014. Copies of the public notice were forwarded to concerned Federal, State, and local agencies, organized groups, individuals and navigation districts. The applicant responded to an initial round of comments, and additional comments were then received from agencies. The applicant provided responses to the additional comments as well. The original public notice was coordinated with, but not limited to:

- U.S. Fish and Wildlife Service
- National Marine Fisheries Service
- Environmental Protection Agency
- U.S. Coast Guard
- Texas Commission on Environmental Quality
- Texas Parks and Wildlife Department
- Texas Historical Commission
- Texas Coastal Coordination Council
- General Land Office
- National Ocean Survey, Atlantic Marine Center
- Galveston Bay Foundation
- Railroad Commission of Texas
- American Waterways Operators
- Adjacent Property Owners

Upon consideration of the permit amendment and comments from multiple stakeholders, the USACE's SOF concluded that all substantive comments related to (a.) aquatic resources impacts, avoidance, minimization, and mitigation, (b.) requests for alternatives analysis, (c.) seagrasses, and (d.) proposed canal, water exchange, and water quality were adequately addressed (USACE 2015a). Regarding permit comments related to the red knot (bird species), a special condition was added to the permit authorization requiring that on-site monitors be present during the wintering months of both species while construction activities are occurring (USACE 2015a). The final permit was executed on October 29, 2015 (USACE 2015b).

3.8.2 Section 401 of the CWA, Water Quality

No-Build Impact
Under the No-Build Alternative, there would be no potential to impact potential waters of the U.S. and 401 Certification would not apply.

Build Impact
The 401 Certification requirements for NWP #14 would be met by implementing approved erosion controls, sediment controls and post-construction total suspended solids controls from the 401 Water Quality Certification Conditions for Nationwide Permits (TCEQ 2002).

3.8.3 Executive Order 11990, Wetlands

No-Build Impact
Under the No-Build Alternative, there would be no potential to impact wetlands.

Build Impact
No practicable alternatives to project impacts on adjacent jurisdictional wetlands (as presented in **Section 3.1.1**) were identified. Alternatives were reviewed as required by EO 11990 on wetlands.

3.8.4 General Bridge Act of 1946 (U.S. Coast Guard Permit)

No-Build Impact
Under the No-Build Alternative, there would be no potential to impact any existing bridge.

Build Impact
Appendix C presents correspondence from the U.S. Coast Guard confirming that no specific bridge permit would be required. The proposed project does not involve work in or over a navigable water of the U.S.; therefore, the General Bridge Act of 1946 does not apply.

3.8.5 Section 303(d) of the CWA

No-Build Impact
Under the No-Build Alternative, there would be no construction and no need to obtain permits required to meet Section 402 of the Clean Water Act.

Build Impact
Runoff from the proposed project would not discharge directly into Section 303(d)-listed threatened or impaired water, or into a stream within five miles upstream of a Section 303(d) listed threatened or impaired waterway. The 2010 Section 303(d) list was utilized in this assessment (TCEQ 2011).

3.8.6 Section 402 of the CWA, TPDES, Texas Municipal Separate Storm Sewer System (MS4)

No Build Impact
Under the No-Build Alternative, there would be no construction and no need to obtain permits required in order to comply with Section 402 of the Clean Water Act for Municipal Separate Storm Sewer Systems (MS4).

Build Impact
The proposed project is located within the boundaries of the Phase I Corpus Christi, Texas Municipal Separate Storm Sewer System (MS4) and would comply with the applicable MS4 requirements within Section 402 of the Clean Water Act.

3.8.7 Section 402 of the CWA, TPDES, Construction General Permit

No-Build Impact
Under the No-Build Alternative, there would be no construction and no need to obtain permits required to meet Section 402 of the Clean Water Act for

Build Impact
The proposed project would include five or more acres of earth disturbance. TxDOT would comply with TCEQ's Texas Pollutant Discharge Elimination System (TPDES) Construction General Permit (CGP). A

Storm Water Pollution Prevention Plan (SW3P) would be prepared and a construction site notice would be posted on the construction site. A Notice of Intent (NOI) would be required.

3.8.8 Floodplains

No-Build Impact
No floodplains would be affected by the No-Build Alternative.

Build Impact
The proposed project is located within a Federal Emergency Management Agency (FEMA) designated 100-year floodplain. Proposed surface hydraulics would be designed in accordance with current FHWA and TxDOT design policies. The proposed project would permit the conveyance of the 100-year flood, inundation of the roadway being acceptable, without causing significant damage to the proposed project, future third-party canal, or other property. The proposed project would not increase the base flood elevation to a level that would violate applicable floodplain regulations and ordinances. Coordination with the local Floodplain Administer would be required. Applicable effective Flood Insurance Rate Map panels—4854940505D, 4854940508D and 4854940520D—are presented in **Figure 3-5** (FEMA 2007).

3.8.9 Texas Coastal Management Program

No-Build Impact
Under the No-Build Alternative, there would be no impact (adverse or beneficial) to the coastal area.

Build Impact
The proposed project is located in Nueces County, which is within the Texas Coastal Management Program (TCMP) boundary. The Texas General Land Office (TXGLO) reviews projects for consistency with the TCMP goals and policies in accordance with the regulations of the Coastal Coordination Council. TxDOT is currently coordinating with the TXGLO for TCMP consistency.

3.8.10 Coastal Barrier Resources Act

No-Build Impact
Under the No-Build Alternative, there would be no impact (adverse or beneficial) to coastal barrier resources in the project area.

Build Impact
Although the proposed project is located within Nueces County, it is not located within a designated Coastal Barrier Resources Act (CBRA) map unit. Therefore, coordination with U.S. Fish and Wildlife Service (USFWS) is not required.

3.8.11 Wild and Scenic Rivers

No-Build Impact
Under the No-Build Alternative, there would be no impact (adverse or beneficial) to any wild and scenic rivers.

Build Impact
The proposed project would not involve work within the designated segment of the Rio Grande River that would harm the river's free-flowing condition, water quality, or outstanding resource values.

3.9 Biological Resources

3.9.1 Fish and Wildlife Coordination Act

No-Build Impact
Under the No-Build Alternative, there would be no impact (adverse or beneficial) to area fish and wildlife.

Build Impact
As described in **Section 3.8.1**, the proposed project would affect Jurisdictional Waters of the U.S., including wetlands or other special aquatic sites, and requires a USACE permit. Coordination with the USFWS and TPWD is required to protect fish and wildlife resources in connection with the proposed project and is detailed in **Sections 3.9.2** through **3.9.7**.

3.9.2 Endangered Species Act

No-Build Impact
Under the No-Build Alternative, additional right-of-way would not be acquired and altered by construction activities; therefore, there would be no potential to affect or impact rare, threatened, or endangered species.

Build-Impact
Lists of threatened and endangered species maintained by the USFWS and Texas Parks and Wildlife Department (TPWD) were consulted to determine species of potential occurrence in the vicinity of the proposed project. The Texas Natural Diversity Database (TXNDD) was consulted for information regarding occurrences of rare and listed species (data received February 18, 2015). The database provides known historical records for rare, threatened, and endangered species. Information files were reviewed for the known locations of species in the *Crane Island SW, Texas* USGS 7.5 minute topographical quadrangle map (which include the project area and surrounding vicinity).

A total of 12 state and federally-listed endangered species (SE and FE), three state and federally-listed threatened species (ST and FT), one candidate for federal listing, and 17 ST species were identified as having the potential to occur in Nueces County (TPWD 2012). **Appendix D** presents a comprehensive list of the special species of Nueces County, their regulatory listing status, habitat description, and a determination of whether appropriate habitat for the species occurs within the project area (TPWD 2012).

Although it provides valuable information regarding occurrences of listed/rare species, recorded occurrences cannot be used for presence/absence determinations. As shown in **Appendix D**, the following two elements of occurrence related to listed threatened or endangered species were identified by the TXNDD within an approximate 1.5-mile radius of the proposed project area:

1. Piping Plover (*Charadrius melodus*), FT, ST, SGCN
2. Peregrine Falcon (*Falco peregrinus*), ST

3.9.2.1 Federally-listed Species

No-Build Impact
Under the No-Build Alternative, additional right-of-way would not be acquired and altered by construction activities; therefore, there would be no potential to affect any federally listed species.

Build Impact
Within Nueces County, there are 15 federally-listed and one candidate species (some also have state status). Data summarized from TPWD's species list (TPWD 2012).and the USFWS Information, Planning, and Conservation System (IPAC) is summarized in **Appendix D**. Based on a review of this information, no federally-listed species identified for Nueces County have the potential to occur within TxDOT right-of-way.

3.9.2.2 State-Listed Species

No-Build Impact
Under the No-Build Alternative, additional right-of-way would not be acquired and altered by construction activities; therefore, there would be no potential to affect or impact any state-listed species.

Build Impact
According to TPWD (2012), there are 11 state-listed endangered species and 20 state-listed threatened species within Nueces County (some also have federal status). As identified within **Appendix D**, the following four state-listed species within Nueces County have the potential to occur adjacent to the right-of-way (TPWD 2012):

1. Reddish Egret (*Egretta rufescens*), ST
2. Sooty Tern (*Sterna fuscata*), ST
3. White-faced Ibis (*Plegadis chihi*), ST
4. Wood Stork (*Mycteria americana*), ST

3.9.2.3 Species of Concern in Texas

As shown in **Appendix D**, there are no state species of concern in Nueces County (TPWD 2012); however, as indicated in the table, 31 of these species are considered Species of Greatest Conservation Need (SGCN) according to the Texas Conservation Action Plan (TCAP 2011).

No-Build Impact
Under the No-Build Alternative, additional right-of-way would not be acquired and altered by construction activities; therefore, there would be no potential to affect or impact any species of concern.

Build Impact
The proposed project could impact habitat in areas adjacent to the right-of-way for the four state-listed threatened species described in **Section 3.9.2**. Since the project area is maintained roadway right-of-way, habitat in the project area is unlikely and would not negatively impact the species.

3.9.3 Migratory Bird Treaty

The MBTA of 1918 prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests (16 USC 703-712). Take includes pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb, alive or dead, any portion, nest or egg unless allowed by permit (50 Code of Federal Regulations (CFR) 21.11). Penalties include a maximum of two years imprisonment and $250,000 fine.

No-Build Impact
Under the No-Build Alternative, there would be no potential to affect or impact any migratory birds in the project area.

Build Impact
Migratory birds may cross the project area during construction; however, since the proposed project would not affect mature woody vegetation, open fields or water features (where migratory birds would most likely nest or stop for rest/feeding). For the proposed project, biologists would conduct a search for signs of nests/eggs of migratory birds prior to construction activities. Additionally, in accordance with the BMP PA between TxDOT and TPWD (2013), MBTA compliance would be achieved by:

- Not disturbing, destroying, or removing active nests, including ground nesting birds, during the nesting season;
- Avoiding the removal of unoccupied, inactive nests, as practicable;
- Preventing the establishment of active nests during the nesting season on TxDOT-owned and operated facilities and structures proposed for replacement or repair;
- Not collecting, capturing, relocating, or transporting birds, eggs, young, or active nests without a permit.

3.9.4 Bald and Golden Eagle Act

This section was prepared in accordance with the stand-alone biology SOU (TxDOT 2011c). Bald and Golden Eagles are protected under the Bald and Golden Eagle Act (1940). The Act and amendments (1962 and 1972) prohibits the take, possession, sale, purchase, barter, offer to sell, purchase or barter, transport, export or import of bald or golden eagles; unless allowed by permit (16 USC 668c; 50 CFR 22.3). The 1972 amendment increased penalties for violating the Act to a maximum of $5,000 or one year imprisonment, and double the penalty for a second conviction. Bald eagles are also protected under the MBTA (USFWS 2012).

Golden eagles (*Aquila chrysaetos*) can be found in open country, including tundra, rangelands, and prairies, as well as forested habitats and. They nest on cliffs or within the largest forest trees (USFWS 2011). Golden eagles are permanent residents of western portions of Canada, U.S. and northern Mexico; breeding residents for Alaska and northern Canada; and nonbreeding residents of the, plains, Great Lakes area, mid-Atlantic and New England. Within southern portions of the U.S., including south Texas their status is considered uncertain (NatureServe 2003a).

Bald eagles (*Haliaeetus leucocephalus*) occur from Baja California and Florida north to Canada and Alaska. They are considered nonbreeding residents within Texas, except for along the lower Rio Grande River Valley, where their status is uncertain (NatureServe 2003b). They are nearly always found near

water, along rivers, lakes, or the sea coast and coastal marshes, reservoirs, and large lakes (Smithsonian 2013).

No-Build Impact

Under the No-Build Alternative, there would be no potential to affect or impact any Bald or Golden Eagles that could be present in the project area.

Build Impact

The range and habitat of golden eagles are not located within the project areas; therefore, no impacts on this species or its habitat are expected from the proposed project. Since bald eagles are identified as nonbreeding residents of the Texas Gulf Coast and are typically found near the water, the project area could include its habitat. Therefore, coordination with the USFWS and/or the TPWD may be required. The proposed project would adhere to the *National Bald Eagle Management Guidelines* of 2007.

3.9.5 State Requirements

3.9.5.1 Species Impact Table

Appendix D presents the species impact table for federally and state listed species in accordance with the *Environmental Handbook for Ecological Resources Management: The Endangered Species Act* (TxDOT 2014c).

3.9.5.2 Impacts on State Species and Triggers for TPWD Coordination

Under §2.205 (a)(2) of the MOU between TxDOT and TPWD, effective September 1, 2013, TxDOT would determine the need for coordinating a proposed transportation project with TPWD by comparing the results of a Tier I site assessment to the triggers in §2.206 and thresholds found in this Threshold Table PA. The Tier I site assessment defines the type and amount of habitat impacted using information from the Texas Conservation Action Plan (TCAP), EMST, TXNDD, county lists of Rare and Protected Species of Texas maintained by TPWD, county lists of endangered, threatened, and candidate species maintained by the USFWS, and the most current aerial photography available. The table below lists coordination triggers under §2.205 (a)(2) and responses to each.

Table 3-10. Tier I Site Assessment TPWD Coordination Triggers

Trigger	Applies to the Project	Explanation
The project is within the range of a state threatened or endangered species or SGCN, as identified by the TPWD county list, and there is suitable habitat for the species within the project area unless BMPs as defined in the MOU are implemented as provided by a PA.	Yes	The proposed project may contain suitable habitat for four state-listed threatened species (birds). BMPs would be used to minimize impacts to all four species.
The project may adversely impact important remnant vegetation based on the judgment of a qualified biologist or as mapped in the TXNDD.	No	No important remnant vegetation was identified within the project area by project biologists or by the TXNDD.
The project requires a nationwide permit with a preconstruction notification or an individual permit issued by the U.S. Army Corps of Engineers (USACE).	Yes	The proposed project would require a Section 404 permit as discussed in **Section 3.8.1**.
The project includes in the TxDOT right-of-way or conservation, construction, or drainage easement, more than 200 linear feet of stream channel for each single and complete crossing of one or more of the following that is not already channelized or otherwise maintained: a) channel realignment; or b) streambed or stream bank excavation, scraping, clearing, or other permanent disturbance.	No	This project does not include more than 200 linear feet of stream channel.
The project contains known isolated wetlands outside existing TxDOT right-of-way that would be directly impacted by the project.	No	No isolated wetlands occur outside of the right-of-way that would be impacted by the project.
The project may impact at least 0.10 acre of riparian vegetation based on the judgment of a qualified biologist or as mapped in the EMST.	No	No riparian vegetation occurs within the project area, therefore none would be impacted.
The project disturbs habitat in an area equal to or greater than the area of disturbance indicated in the *Threshold Table PA*.	No	As discussed in Section 3.9.5.5, impact thresholds from the Threshold Table PA would not be exceeded.

Results of the Tier I Site Assessment indicate the proposed project requires coordination with TPWD. A Tier I site assessment would be prepared and submitted to TPWD in accordance with the Tier I Site Assessments PA between TxDOT and TPWD under the 2013 MOU.

3.9.5.3 Wildlife

On Texas coastal wetlands, reptiles and amphibians include several species of frogs and toads, mud and red-eared slider turtles (*Trachemys scripta elegans*) and Gulf Coast ribbonsnake (*Thamnophis sauritus*). Mammals include marsh rice rats (*Oryzomys palustris*), raccoons (*Procyon lotor*), and feral pigs~~b~~ (*Sus scrofa*). Birds include ducks (e.g. mottled duck (*Anas fulvigula*)) teal~~s~~ (e.g. common teal (*Anas crecca)*, and other water birds like coots, rails, gallinules and grebes. Wading birds include herons, egrets and ibises. Shorebirds include sandpipers (*Scolopacidae*), long-billed curlew (*Numenius americanus*), whimbrel (*Numenius phaeopus*), willet (*Tringa semipalmata*), greater yellowlegs (*Tringa melanoleuca)*, lesser yellowlegs (*Tringa flavipes*), snipe (*Gallinago stenura*), black-bellied plover (*Pluvialis squatarola*),

killdeer (*Charadrius vociferus*), and dowitchers (*Limnodromus*). Perching birds include the sedge wren (*Cistothorus platensis*) and red-winged blackbird (*Agelaius phoeniceus*) (Texas A&M 2013).

No-Build Impact

Under the No-Build Alternative, ground disturbing activities would not occur and there would be no potential for impacts to wildlife using the area.

Build Impact

Although the project occurs entirely within existing right-of-way, wildlife may occasionally forage within the right-of-way; therefore, aggravation or direct mortality could result during construction. In addition, construction noise and vibration could disturb State-listed threatened species, should they occur on adjacent suitable habitat (See **Section 3.9.2.2)**. Since the project is on existing location, no habitat fragmentation would occur.

3.9.5.4 Vegetation

During the field visit, the maintained right-of-way had a dominant vegetative cover of gulf dune paspalum (*Paspalum monostachyum Vasey*), seacoast bluestem (*Schizachyrium scoparium var. littorale*), seashore dropseed (*Sporobolus virginicus*), Bermuda grass (*Capriola dactylon*) and St. Augustine grass (*Stenotaphrum secundatum*). Approximately 450 landscaped non-native oleander bushes are located within the center median and within project limits. The only mature woody vegetation in the vicinity of the proposed project includes a stand of black mangrove located north of Whitecap Boulevard. Vegetation outside the right-of-way of the proposed project is comprised of disturbed properties dominated by gulf cordgrass (*Spartina spartinae*), gulf dune paspalum (*Paspalum monostachyum Vasey*), sliverhead (*Blutaparon vermiculare*), seacoast bluestem (*Schizachyrium scoparium var. littorale*), and several sedges (*fimbriylis Sp.*). Photographs of the project area are presented in **Appendix A**.
Wetland plants on the Texas Coast are similar to those found in other freshwater marshes, but may include some brackish-water species due to elevated soil salinity. Typical species include saltmeadow cordgrass (*Spartina patens*), southern cattail (*Typha domingensis*), coastal water-hyssop (*Bacopa monnieri*), coastal plain pennywort (*Hydrocotyle bonariensis*), spikerushes, flatsedges, marsh fimbry (*Fimbristylis sp.*), white-topped sedge (*Rhynchospora colorata*), Texas frogfruit (*Phyla nodiflora*), seashore paspalum (*Paspalum vaginatum*), bushy bluestem (*Andropogon glomeratus*); and other grasses sedges and bulrushes (Texas A&M 2013). Some of these plants may be considered invasive; therefore, researching the species before beginning re-vegetation efforts would be an important step.

The proposed project is located within the marsh/barrier island vegetation type of Texas, which has a distribution on sandy coastal barrier island from high tide mark to leeward marshes (TPWD 1984). Annual precipitation is about 28 inches along the coast. The project area is most likely associated with four subtypes of Marsh/Barrier Island vegetation, which are each linked with vegetation identified within the proposed project area. Based on the field investigation conducted in January 2012, the proposed project area is consistent with the TPWD designation.

3.9.5.5 Ecological Mapping System of Texas

Using GIS, the existing and proposed project right-of-way was superimposed onto Ecological Mapping Systems of Texas (EMST) vegetation type data. The EMST Vegetation Types correspond to NatureServe Ecological System Types and vegetation types described in the Threshold Table PA**.**

Table 3-11 summarize EMST-mapped habitat types within the project limits. **Table 3-12** summarizes actual habitats observed in the field.

Table 3-11. EMST-Mapped habitats

EMST	MOU Type	Ecoregion; Ecosystem Name/Subregion	Total Acres in Right-of-Way
Gulf Coast: Salty Prairie	Tidal and Salt Marsh	Western Gulf Coastal Plain	22.1
South Texas: Windy Tidal Flats	Beaches and Salt, Tidal Flats		1.6
Urban Low Intensity	Urban		2.2
Urban High Intensity			0.2
Total			**26.1**

Table 3-12. Observed Habitats

MOU Type	Total Acres in Right-of-Way
Urban	13
Agriculture*	13
Total	**26**

Mowed/maintained right-of-way was categorized as Agriculture for EMST analysis purposes, based on the high threshold for coordination associated with Agriculture.

No-Build Impact
There would be no vegetation impacts associated with the No-Build Alternative.

Build Impact

The proposed project would result in the temporary impact of 2.03 acres of mowed/maintained right-of-way, which would be disturbed and converted to vegetated side slopes and a vegetated median. No permanent vegetation impacts would result, and impact thresholds from the Threshold Table PA would not be exceeded. See **Section 3.8.1** for a discussion of impacts to wetlands within the mowed/maintained right-of-way.

3.9.6 Landscaping and Invasive Species

No-Build Impact
Under the No-Build Alternative, ground disturbing activities would not occur and there would be no potential for invasive species to occur as a result of project-related activities

Build Impact
Landscaping is not expected to be part of the proposed project. Disturbed areas would be re-vegetated according to Specification 164-006 (TxDOT 2004) and Executive Order 13112 (U.S. Government 1999) regarding invasive species and beneficial landscaping.

3.9.7 Essential Fish Habitat

No-Build Impact

Under the No-Build Alternative, there would be no potential for any impact (adverse of beneficial) on area fish species or habitat.

Build Impact

The Magnusen–Stevens Fishery Conservation and Management Act (MFCMA) provides for the protection of essential habitat of important commercial and recreational marine fisheries. Although there are no tidally influenced open waters within the proposed project limits, there is essential fish habitat (EFH) present in nearby tidally-influenced waters including Cane harbor, Lake Padre, and Packery Channel (**Figure 3-6**). These waters are designated as EFH for red drum, reef fish, coastal migratory pelagic resources, and shrimp (NOAA 2016). The hydrologic connection to these waters and associated EFH would be made once the PR 22 bridge project is completed.

As part of the USACE's *Environmental Assessment and Statement of Findings* for application SWG-2000-02743, the USACE noted that impacts to EFH will occur as a result of the construction activities "associated with dredging and construction of the canal feature and remaining areas to be filled," and determined through coordination with the National Marine Fisheries Service, that the "adverse effects to EFH are minimal" (USACE 2015a).

4.0 INDIRECT AND CUMULATIVE IMPACTS ANALYSES

According to the *Environmental Handbook for Indirect and Cumulative Impacts* published by TxDOT in 2014, these analyses are required for all transportation projects except those classified for processing as Categorical Exclusions. This section presents the analyses of indirect and cumulative impacts from the proposed project in accordance with the guidance document (TxDOT 2014a).

The future third-party canal has been considered in both of these analyses as an impact-causing activity and a reasonably foreseeable project.

4.1 Indirect Impacts

Preceding sections of this document describe the proposed project and its direct effects on the environment. The CEQ defines direct effects as those that are "caused by the action and occur at the same time and place" (40 CFR 1508.8). Direct effects are predictable and a direct result of the project. Major transportation projects may also have indirect effects on adjacent land use and the environment. The assessment of indirect effects of the proposed project was conducted with the use of guidance documents from the National Cooperative Highway Research Program (NCHRP), including *NCHRP Report 466: Desk Reference for Estimating the Indirect Effects of Proposed Transportation Projects* (NCHRP 2002), *Forecasting Indirect Land Use Effects of Transportation Projects* (NCHRP 2007), and the *Environmental Handbook for Indirect and Cumulative Impacts* (TxDOT 2014e).

As defined by CEQ, indirect effects are "caused by an action and occur later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems" (40 CFR 1508.8). NCHRP Report 466 describes three categories of indirect effects:

- Encroachment-alteration effects—the alteration of the behavior and functioning of the affected environment caused by project encroachment on the environment.
- Induced growth effects—project-influenced development effects (this second category is referred to as "access alteration effects" in the TxDOT ICI Guidance).
- Effects related to project-influenced development effects/effects related to induced growth—the effects of change in land use on the human and natural environment.

Probability is important in providing a distinction between direct and indirect effects because direct effects are generally inevitable, while indirect effects are merely probable. The term "reasonably foreseeable" means that effects are "sufficiently likely to occur that a person of ordinary prudence would take them into account in making a decision." Such effects are probable, not just possible. Furthermore, NCHRP Report 466 states that "effects that can be classified as possible, but not probable may be excluded from consideration" (NCHRP 2002). The indirect effects analysis for the proposed project follows the seven-step process recommended in the TxDOT ICI Guidance:

1. Initial scoping for the indirect effects analysis and a determination of a study area.
2. Identification of study area goals and trends.
3. Inventory of notable features within the study area.
4. Identification of impact-causing activities of the proposed action and alternatives.
5. Identification of potentially substantial effects for analysis.

6. Analysis of indirect effects and evaluation of the results of the analysis.
7. Assessment of the consequences and development of appropriate mitigation and enhancement. Strategies.

4.1.1 Step 1: Scoping

The primary objective of the scoping process is to determine the level of effort and general approach needed to complete a study (NCHRP 2002). The study area for the indirect effects analysis is referred to as the Area of Influence (AOI). As shown in **Figure 4-1**, the AOI is bounded on the south by the Nueces/Kleberg County Line and to the west the dunes and beach along the Gulf of Mexico. The AOI was confirmed by representatives of TxDOT and the City of Corpus Christi.

The northern boundary of the AOI is formed by the Packery Channel and an arbitrary line that connects with a canal north of SH 361 (Commodores Drive). The western boundary and the entire AOI were selected based on the inclusion of existing and planned development. The AOI was determined so that it would not extend pass designated infrastructure or natural boundaries. The AOI comprises an area of approximately 4,165 acres.

Timeframe limits for the indirect analysis are defined as beginning with project construction (January 2016) and ending at construction completion (April 2017).

4.1.2 Step 2: Goals and Trends

The purpose of this step is to describe the general goals and trends applicable to the AOI, including community planning goals, demographic and development trends, factors influencing growth, and areas of environmental or social sensitivity. Information contributing to this description comes from local planning documents, as well as local and regional trend data.

The proposed project is located within the City of Corpus Christi, Texas in a mostly residential, commercial and recreational area. Corpus Christi is the eighth largest city in Texas. It encompasses the northern portion of Padre Island, which is situated along the Texas Gulf Coast. Development within the indirect effects AOI is increasing, and there are several parcels planned for development. In addition to the *Mustang-Padre Island Area Development Plan* (Corpus Christi 2004), the City maintains plans relating to urban transportation, bicycles and pedestrians, parks, future land use, the airport, and Americans with Disabilities Act; as well as various utility plans.

4.1.2.1 Goals

The major goal of the *Mustang-Padre Island Area Development Plan* is to assist in transforming the Mustang-Padre Island area (encompasses the AOI) into a world-renowned tourist, resort, leisure and residential community. The *Plan* states that the *City Charter* requires City Council to guide, regulate and manage future development. It also specifies that development will be tempered with environmental sensitivity. (Corpus Christi 2004).

The *MTP* presents various goals and objectives for pedestrian and bicycle riders, and recreation travel and tourism. The goals and objectives adopted by the MPO to support these categories include (Corpus Christi 2011):

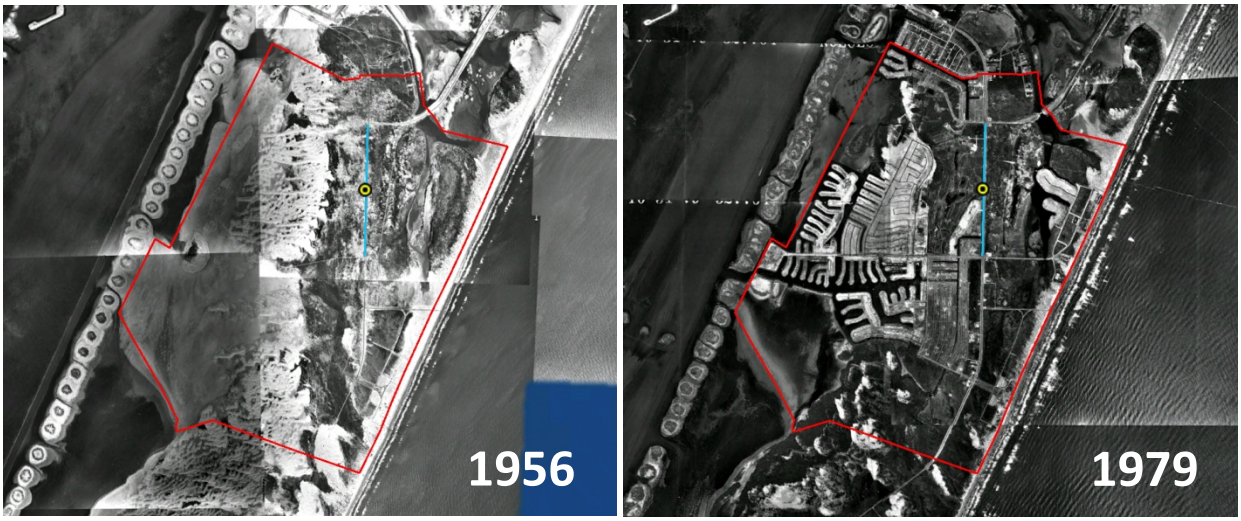
1. Needs of the pedestrian and bicycle rider, like the needs of vehicles, should be considered in the design of the urban environment and transportation facilities.
2. Encourage residents and visitors to walk or bicycle for trips of reasonable length.
3. Provide adequate financial resources for the expansion and maintenance of pedestrian and bicycle facilities.
4. Increase collaboration with public and private sector decision-makers to improve and establish intermodal connections for recreational travel needs.
5. Promote cooperation among regional, state, and local interest groups to integrate land use and transportation for providing an attractive tourism environment.
6. Adopt and promote environmental friendly designs for roadways, bikeways, and walkways.

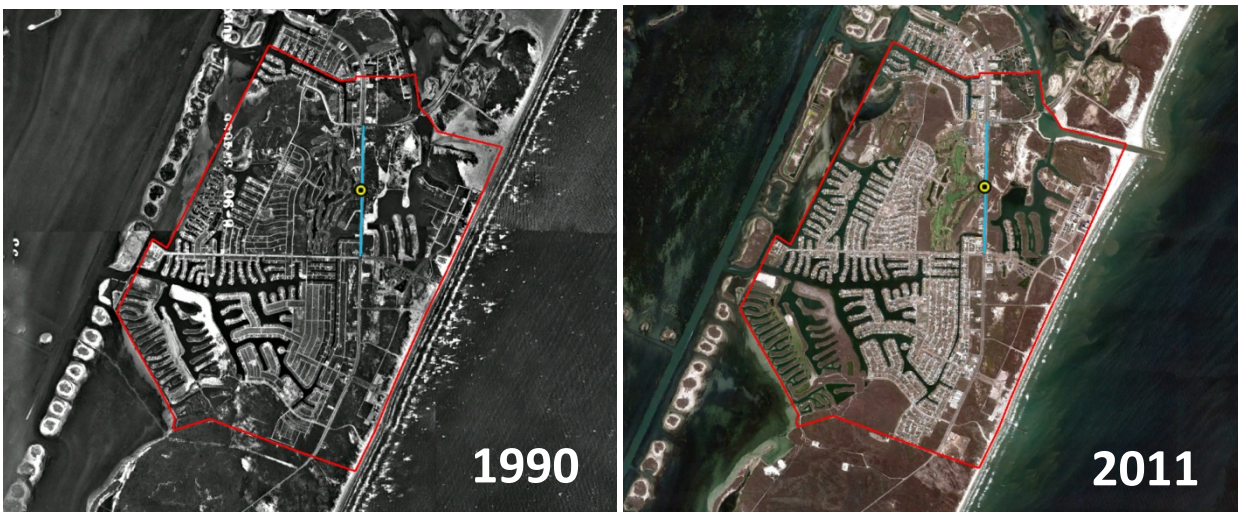
4.1.2.2 Trends

The Mustang-Padre Island area, as defined by the Corpus Christi's Development Services Department, is an area that is one of the highest growth areas within the City's jurisdiction. The nature of the area with significant amounts of natural resources limits land availability. According to the *Mustang-Padre Island Area Development Plan*:

> *The growth trend within this area is projected to continue outpacing that of the City as a whole through 2050. With the construction of Packery Channel, development is expected to rise sharply through the next 20-30 years and then plateau. At that point, land availability would likely become a limiting factor and area population should stabilize in the vicinity of 50,000* (Corpus Christi 2004).

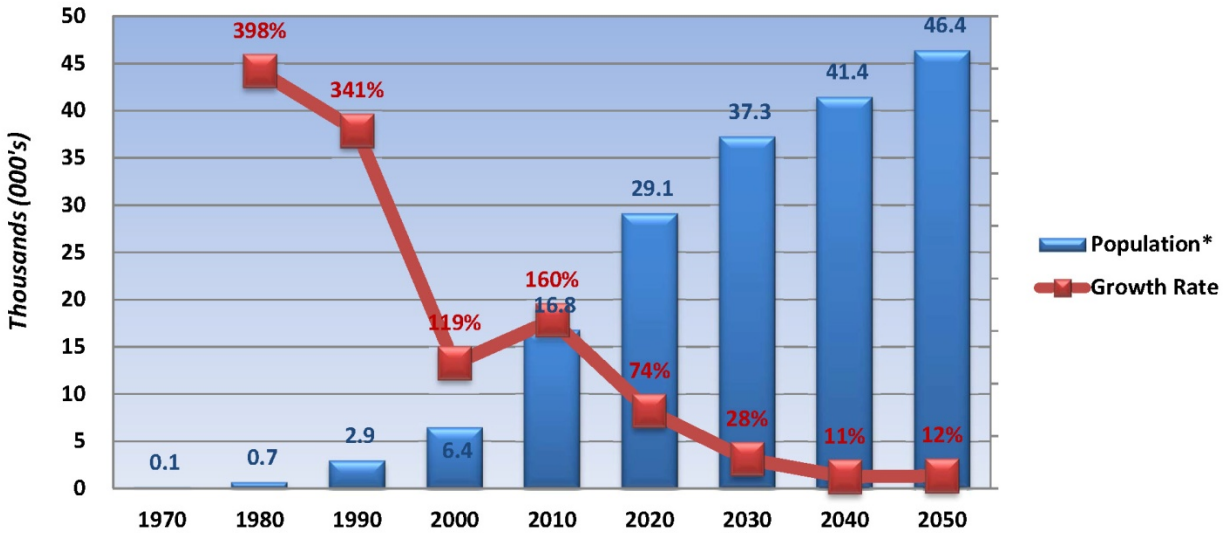
As shown in the aerials below, development within the within the AOI dates back to 1979. The aerials show a gradual development of the complex dune system and tidal flat areas to residential, commercial, mixed and recreational uses; as well as an anthropogenic canal system. There is a relatively high percentage of current and planned development within the AOI. Additional development is planned for areas situated east of PR 22, especially around Lake Padre.





Source: Google Earth Pro

As shown below, the Mustang-Padre Island area (including the AOI) population experienced a sharp increase from 1970 to 1980. It almost quadrupled from 1,000 to 7,000—a 398 percent growth rate increase. By 1990, the population of the area more than tripled to 2,900 residents. In 2010, the population of the area grew to 16,800—a 20-year growth rate of 279 percent. The Mustang-Padre Island area is projected to continue a high growth rate to 2020 to 29,100 residents (74 percent growth). After 2020, the population continues to grow but at a lesser rate.



Adapted from (Corpus Christi 2004)

The population increases within the AOI are apparent in the decrease in tidal flats, wetlands and other land resources of north Padre Island. Because of the low tidal range in north Padre Island, many tidal flats are flooded by wind-driven tides. As indicated in a study of the Texas barrier islands (White 2006), the most significant trend on north Padre Island was the loss of tidal flats. Tidal flats are considered as part of the intertidal wetland system. They suffered a large decline from 2,365 acres in the 1950's to 702 acres in 1979 representing a 70 percent loss. Tidal flats continued to decrease from 1979 to 2004 to approximately 652 acres— a 7 percent decline.

A significant amount of tidal flat loss occurred when the Padre Isles residential development expanded south. Palustrine marsh (inland freshwater emergent wetlands) areas began to decrease in the area from the 1950s to 1979 by approximately 42 acres (from 275 to 258). Since 1979, the trend for palustrine marshes was reverse from 1979 with a rebound to 867 acres—an increase of 36 percent. The study recognizes that after an initial decrease, seagrasses expanded at a moderate rate from 1950 to 2004; whereas, Gulf beaches on north Padre Island fluctuated with an ultimate decrease of 18 percent from 151 acres to approximately 121 acres. The study indicates that Padre Island has become more vegetated over the past several decades (White 2006).

4.1.3 Step 3: Study Area's Notable Features

NCHRP Report 466 defines the term "notable features" as specific, valued, vulnerable, or unique elements of the environment, which may include: ecologically sensitive species and habitats, valued environmental components, valued and unusual landscape components with long recovery times after, and vulnerable elements of the population (NCHRP 2002).

A number of information sources were used to determine notable features present within the AOI, including aerial photographs, desktop studies and field visits. The *Mustang-Padre Island Area Development Plan* (Corpus Christi 2004) was especially helpful. As shown in **Figure 4-1,** notable features present within the AOI include:

- Future third-party canal
- Lake Padre
- Padre Isles Canal System
- Padre Isles County Club and golf course
- Hike and Bike Trail
- Gateways and Scenic Corridors
- Wetlands and tidal flats
- Packery Channel
- Laguna Madre
- Dunes, beach and Gulf of Mexico

The future third-party canal would provide water exchange between Lake Padre and the existing Padre Isles canal system and is considered a notable resource. As shown in **Figure 4-1**, Lake Padre is located to the east of the proposed project, while the golf course and canal system are located west of the proposed project.

The Padre Isles County Club establishment is located approximately 0.35 miles from the proposed project. As shown in **Figure 4-1**, PR 22 and other roads within the AOI are part of two municipal programs—the Hike and Bike Trail, and Gateways and Scenic Corridors (Corpus Christi 2004).

Tidal flats, other wetlands and open space are located in areas that are undeveloped on Padre Island. Potential wetland features in the AOI are identified in **Figure 4-1** from the NWI maps. As discussed in **Section 3.8.1**, a wetland delineation for the proposed project identified approximately 0.415 acres of permanently affected wetlands in the PR 22 right-of-way. During construction of the proposed project, approximately 3.91 acres of wetlands in the PR 22 right-of-way would be temporarily disturbed. Permitting with the USACE is ongoing and would be complete prior to project construction.

The Packery Channel is located approximately 0.60 miles northeast of the proposed project. It connects the Gulf of Mexico with Lake Padre and the Laguna Madre. The Laguna Madre is a long, shallow, hypersaline lagoon along the western coast of the Gulf of Mexico in Nueces, Kennedy, Kleberg, Willacy and Cameron Counties in Texas. An Intracoastal Waterway has been dredged through the lagoon (National Park Service 2001). Dunes and beaches are located almost a mile (~0.89 miles) east of the proposed project. Coastal dune vegetation is limited to the near shore areas along the Gulf of Mexico side of Padre Island. Remaining coastal dune vegetation has been disturbed by past developments and land clearing for future development.

4.1.4 Step 4: Impact-Causing Activities

Without appropriate best management practices (BMPs), various aspects of proposed construction may result in indirect impacts on the surrounding environment. The sequence of construction activities would be expected to occur as follows:

1. Reduce north and southbound traffic to one lane each and divert to one side.
2. Remove the pavement where the proposed project would be constructed.
3. Raise power distribution lines so that they would cross the proposed canal within TxDOT right-of-way.
4. Conduct the directional drilling of utilities under the sheet piling for the proposed canal within TxDOT right-of-way.

a. Water lines.
b. Telecommunication lines.
c. Gas line.
d. Sanitary sewer line would go through the golf course.

5. Drill pilings for the proposed project foundation and cast piling caps.
6. Drive sheet piling for the proposed canal within TxDOT right-of-way.
7. Excavate the canal up to right-of-way centerline and place armament on canal bottom (extends 200’ beyond right-of-way in each direction).
8. Construct concrete arch spans and attach headwalls.
9. Install retaining walls and build up embankments.
10. Pour and roll pavement.
11. Install railings.
12. Direct traffic over to the completed side and repeat on other side.

Storm water would be directed to grass-lined roadside ditches (similar to existing conditions) then collected in an underground pipe and discharged into the future third-party canal. The NCHRP provides a comprehensive checklist of project impact-causing activities (NCHRP 2002). This checklist was used to identify relevant project actions and activities. **Table 4-1** presents the impact-causing activities of the proposed project that could potentially contribute to indirect effects.

Table 4-1: Impact-Causing Activities

General Effect Category	Project Activity	General Description
Modification of Regime	Habitat modification and groundcover alteration	The existing right-of-way is approximately 26 acres. Approximately 0.415 acres of wetlands would be permanently affected within TxDOT right-of-way. Approximately 2.03 acres of vegetation would be temporarily affected (some of which consists of wetlands that would be converted to mowed/maintained right-of-way).
	Drainage alteration	Existing conditions have the water from the project area draining into adjacent golf course and Lake Padre. Ultimately, storm water drainage from the project area would drain into the future third-party canal.
Land Transformation and Construction	Raise power lines	Power distribution lines would be located within TxDOT right-of-way.
	Excavation for Utilities	Directional drilling for utilities under the sheet piling for the proposed canal within TxDOT right-of-way. Utilities would include water, telecommunications, gas and sanitary sewer.
	Bridge Pilings	Pilings would be drilled for bridge foundation and cast piling caps.
	Canal Pilings	Sheet piling would be installed for the proposed canal within TxDOT right-of-way.
	Excavation for the proposed canal within TxDOT right-of-way	Excavate the proposed canal within TxDOT right-of-way and place armament on canal bottom, which extends 200 feet beyond the right-of-way in each direction.
	Retaining Walls	Retaining walls on the east side of PR 22 would stretch 520 feet to the north and 490 feet to the south of the center of the bridges/canal. On the west side of PR 22, the retaining walls would measure 420 feet to the north and 570 feet to the south of the center of the bridges/canal.
	Site pavement	This activity consists of removing the existing pavement where the road profile would be increased. A total amount of impervious cover would be approximately 6.91 acres.
	Storage of construction materials	Storage aggregate, pipes, traffic control barricades, steel rebar, road signs, and other construction materials and construction office trailers are commonly located within the project right-of-way during construction.
Resource Extraction	Erosion Control	Erosion Control and Sedimentation Control BMPs would be implemented and maintained until construction is complete. Upon completion of the project, Post-Construction Total Suspended Solids Control BMPs would be implemented.
	Landscaping	Landscaping in accordance with EO 13112 on Invasive Species and Executive Memorandum on Beneficial Landscaping.
	Re-vegetation	Re-vegetation may be accomplished for landscaping, visual screening, aesthetics and stabilization.
Land Alternation	Canal construction within the PR 22 right-of-way	The portion of the canal within TxDOT right-of-way would be excavated.
Resource Renewal Activities	Excavated material	Excavated materials would be left on the barrier island for island stability and sustainability.
Changes in Traffic	Traffic patterns	North and southbound traffic would be reduced to one lane each and diverted to one side of the road, while work is conducted on the other

General Effect Category	Project Activity	General Description
		side. Once that side is completed, traffic would be diverted to the completed side and work would commence on the other side of PR 22.

4.1.5 Step 5: Potentially Substantial Indirect Effects

The objective of this step is to compare the list of project impact-causing actions with the lists of goals and notable features to explore potential cause-effect relationships. This step is essentially for screening those impacts that may be substantial and require further analysis. The following types of indirect effects are considered for relevance to the proposed project: a) encroachment-alteration effects, b) induced growth effects, and c) effect related to induced growth.

4.1.5.1 Encroachment-Alteration Effects

Ecological Effects

The project would be constructed within approximately 26 acres of existing right-of-way. Activities include construction, pavement and pilings for the proposed project. Additionally, several utilities would be installed during construction of the canal within the TXDOT right-of-way. Construction of the utilities would be conducted through a separate construction contract.

Examples of potential indirect ecological effects include: habitat fragmentation, degradation of habitat, disruption of natural processes (i.e. hydrology, species competition), and disruption of ecosystem functioning (related to direct mortality). Since the proposed project would occur within existing right-of-way, indirect ecological effects are not expected. Additionally, the proposed retaining wall and BMPs would further prevent indirect effects on surrounding tidal flats, Lake Padre and the associated ecology.

Socioeconomic Effects

During construction activities, temporary impacts of dust and noise would be expected on Padre Isles Country Club member, as well as recreational users of the adjacent golf course and Lake Padre. Additionally, short-term traffic build up may occur during construction due to the temporary detour. After construction is complete, traffic flow would resume as before.

Relocation or alteration of homes, businesses, or public facilities/community centers would not take place for the construction of the proposed project. No indirect effects on neighborhood cohesion and stability, travel patterns, changes in the local economy, changes in access to specific services or products, recreation patterns at public facilities, pedestrian dependency and mobility, perceived quality of the natural environment, personal safety and privacy, or aesthetic and cultural values would occur (TxDOT 2014).

4.1.5.2 Induced Growth

According to the *Environmental Handbook for Indirect and Cumulative Impacts* (TxDOT 2014), another type of indirect impact includes induced growth. Transportation projects may provide new or improved access to adjacent land, or may reduce the time-cost of travel that increases the attractiveness of the surrounding land to developers and consumers. The proposed project would cross the proposed canal

within TxDOT right-of-way, which would ultimately be connected to the future third-party canal. These projects are consistent with *Mustang-Padre Island Area Development Plan* (Corpus Christi 2004), which states an overall goal of transforming the area into a world-renowned tourist, resort and residential community. The proposed project would not add capacity, would not alter access to adjacent parcels, and the project area is primarily surrounded by existing development including a golf course, wetlands, and canals. For these reasons, it is not anticipated that the proposed project would induce growth.

4.1.5.3 Effects Related to Induced Growth

The third type of indirect impact includes those effects that may result from induced growth. Since the proposed project is not expected to induce growth in the surrounding area, there would be no effects related to induce growth.

4.1.6 Step 6: Indirect Effects and Results

Construction BMPs for the proposed project would minimize potential indirect impacts on Lake Padre, the golf course and surrounding tidal flats. The proposed retaining walls and drainage would minimize indirect effects during construction and operation of the proposed project. Indirect effects from the future third-party canal were not analyzed in this EA, however, impacts related to the canal and other past, present, and reasonably foreseeable actions are considered in the cumulative effects analysis (**Section 4.2**).

4.1.7 Step 7: Consequences and Mitigation

The proposed BMPs are described in **Section 5.0**. The planting of native grasses, shrubs and palm trees and appropriate drainage would sustain the proposed project, stabilize surrounding soil and improve aesthetic values for residents, tourists and visitors. The improved aesthetics would be consistent with the local designation of this road as a gateway and scenic corridor. Provision of a wide shoulder on the proposed project would be consistent for the local designation of PR 22 as a hike and bike trail.

4.2 Cumulative Impacts Analysis

This cumulative effects analysis was conducted in accordance with the *Cumulative Impacts Analysis Guidelines* (TxDOT 2014a). The guidance specifies an eight-step process that has been applied to the proposed project. The findings are documented in this report. CEQ regulations define cumulative impacts as:

> *"…an impact on the environment which results from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR §1508.7).*

Table 4-2 compares cumulative impacts with direct and indirect impacts in the context of the nature, cause, timing and location of effects.

Table 4-2: Distinction Between Types of Effects

Type of Effect	Direct	Indirect	Cumulative
Nature of Effect	Typical, Inevitable and Predictable	Reasonably Foreseeable and Probable	Reasonably Foreseeable and Probable
Cause of Effect	Project	Project's direct and indirect effects	Direct and indirect effects of a project and other projects
Timing of Effect	Project construction and implementation	At some future time than direct effect	At time of project construction or in the future
Location of Effect	At the project location	Within boundaries of system affected by the project	Within boundaries of system affected by the project

Source: NCHRP Report 466, 2002.

This cumulative impact analysis focuses on those resources directly and indirectly affected by the proposed project that are currently in poor or declining health, even if the impacts resulting from the action are relatively small (less than significant). Additionally, for those resources that are not in poor or declining health, the cumulative impact analysis focuses on resources are anticipated to be substantially affected by the proposed project.

The methodology used for this analysis is guided by the five-step approach developed by TxDOT in coordination with the FHWA (TxDOT 2014e). The approach was utilized to assess potential cumulative impacts of past, present, and reasonably foreseeable actions (including the proposed project) on the surrounding environment. The following five steps make up the sections of this chapter of the report:

1. Identify resource study area, conditions, and trends to consider in the analysis.
2. Define the Direct and Indirect Effects on each resource from the proposed project.
3. Identify other actions; past, present, and reasonably foreseeable in the future, and their effect on each resource.
4. Define the overall effects of the proposed project combined with other actions.
5. Define actions needed for mitigation of cumulative effects.

4.2.1 Step 1: Resource Study Area, Conditions, and Trends

To have cumulative impacts on a resource, the proposed project must have either a direct or indirect impact on that resource. This analysis focuses on resources affected by the proposed project after the recommended mitigation has been applied, as well as resources that are currently in poor or declining health, even if impacts resulting from the proposed project are relatively small. **Table 4-3** describes direct and indirect effects for each resource category and provides a determination of whether the topic would be included in the analysis.

Table 4-3: Screening of Resources to include in Cumulative Analysis

Resource	Direct Effects	Indirect Effects	Include in Analysis?
Socioeconomic	Minimal and temporary impacts during construction (i.e. dust and noise).	Beneficial economically with negative impacts of increased traffic due to decreased lane capacity for detours	No
Farmland	None	None	No
Visual	None. Design and landscaping would blend the project with surrounding environment.	None	No
Wild and Scenic Rivers	None	None	No
Water Resources	Direct impacts on palustrine emergent wetlands (permanent & temporary).	Appropriate BMPs would be implemented during construction and operation of the proposed project to avoid indirect effects.	Yes, wetlands
Essential Fish Habitat	None	None	No
Vegetation and wildlife habitat	Direct and temporary impacts related to project impact on wetlands.	None	No
Threatened and Endangered Species	None	None	No
Migratory Birds	None	None	No
Hazardous Materials	None	None	No
Archaeological	None	None	No
Historical	None	None	No
Air Quality	None	None	No
Noise	None	None	No

Resources selected for this analysis are referred to as sensitive resources because they would have impacts from the proposed project and/or are in poor or declining health. Wetlands or marshlands commonly found on Padre Island is selected as a sensitive resource within the project area and surrounds. Wetlands would be analyzed for cumulative impacts.

The wetland RSA was selected based on land areas in the vicinity of the project that are susceptible to cumulative impacts and ends where wetlands are largely protected from development. The northern RSA extent is Mustang Island State Park and the southern is Padre Island National Seashore**.** The wetland RSA includes approximately 12,943 acres of land area. The RSA is also bounded by the Laguna Madre (west) and the Gulf of Mexico (east). The Laguna Madre was excluded from the RSA. See **Figure 4-2**.

Substantial amounts of the barrier islands are preserved within state and national parks that border the RSA. Padre Island National Seashore is made up of 130,434 acres (approximately 97 percent of Padre

Island's 133,918 acres); and protects 70 miles of coastline, dunes, prairies, and wind tidal flats (National Park Service 2013). Mustang Island State Park is made up of approximately 4,000 acres (the southern third of Mustang Island) and accounts for five miles of beach (TPWD 2013b and Wikipedia 2013b). The RSA lies within the boundaries for the *Mustang-Padre Island Area Development Plan* (Corpus Christi 2004).

Timeframe considerations for this analysis are defined as those occurring from 1979 to the year 2035. The Nueces County MPO's 2035 planning horizon is the upper temporal limit. Year 1979 was chosen to reflect the time when development began in the area (**Figure 4-3**).

The proposed project is located in a suburban area on Padre Island, which is one of several barrier islands along the Gulf Coast of Texas. North Padre Island is made up of several different kinds of wetlands, including palustrine emergent wetlands (freshwater), estuarine intertidal emergent wetlands, and tidal flats (White 2006). Overall, Texas coastal wetlands sustained an estimated net loss of 210,590 acres from 1955 to 1992 (USFWS 1997). Wetlands on the island are dynamic and change in size and class overtime, especially during strong tropical events and extremely wet or dry seasons. **Figure 4-4** shows the changes in NWI wetlands between 1996 and 2014.

Barrier islands serve to protect the mainland from beach erosion during heavy wave action from tropical systems, especially hurricanes. Unless beach replenishment is provided, barrier islands migrate towards the mainland over geologic time, which also causes changes in wetlands. Barrier islands create important estuaries or lagoons, like the Laguna Madre, between the island and the mainland. The Laguna Madre is considered a wetland by the USFWS.

4.2.2 Step 2: Direct and Indirect Impacts of Proposed project

The analysis of cumulative impacts must look at the impacts of the proposed project in combination with impacts from other past, present, and future projects within the wetland RSA. Identification of direct and indirect impacts from the proposed project assists in determining the project's contribution to cumulative wetland impacts on the island. **Table 4-4** presents a summary of direct and indirect impacts from the proposed project.

Table 4-4: Direct and Indirect Impacts on Sensitive Resources

Resource	Direct Effects	Indirect Effects	Resource in poor or declining health?
Wetlands	0.415 acre	none	Yes, due to impacts from development

4.2.3 Step 3: Other Reasonably Foreseeable Actions

In addition to the direct and indirect effects of the proposed project, several other actions have affected (or are likely to affect) the wetlands within the RSA. A reasonably foreseeable action is *sufficiently likely to occur, that a person of ordinary prudence would take it into account in making a decision*. The purpose of reviewing these actions is to gauge the amount combined impact on each resource within the given area and timeframe or analysis boundaries. Information from a desktop study, the TIP and Corpus Christi planners provided several foreseeable projects located within the RSA. **Table 4-5** includes

projects that were determined to be reasonably foreseeable within the RSA. Reasonably foreseeable actions are depicted in **Figure 4-5**.

Table 4-5: Reasonably Foreseeable Actions

Action	Proposed by	Description	Approximate Wetland Impacts (Acres)	Approximate Area of Disturbance (Acres)
Proposed project	City of Corpus Christi	The construction of two bridges within the TxDOT PR 22 right-of-way	0.415	6.1
Future third-party canal	Private Developer	Construction and dredging for a future third-party canal that would connect Lake Padre with the Padre Isles canal system	1.9	9.5
Nemo Ct Residential development	Private Developer	Planned residential developments located along the Padre Isles canal system	0	2.7
Future Residential Development 1	Private Developer	Planned residential subdivision approximately 0.7 miles WNW of the project area.	23.9	156.9
Future Residential Development 2	Private Developer	Planned residential subdivision on southern portion of the former golf course.	1.25	83.0
Marine District	Private Developer	Planned development in areas surrounding Lake Padre	45.8	92.0
Packery Channel	City of Corpus Christi	Dredging and construction of Packery Channel for boat traffic	13.4	30.0
Schlitterbahn	Private Developer	Water park to be constructed on an existing golf course located west of PR 22. It is scheduled to open spring of 2014.	7.2	65.0

4.2.4 Step 4: Cumulative Impacts

Because wetlands and uplands on barrier islands are naturally created, filled and change over time, all parts of Padre Island are important to its sustainability. Therefore, cumulative impacts have been calculated for wetlands and areas of permanent disturbance from past, present and future actions. As shown in **Table 4-6**, total cumulative impacts on wetlands and other areas of disturbance were calculated for past and future development within the RSA. The RSA totals approximately 12,943 acres and lies between state and federal parks. Parks within the RSA make up approximately 432 acres of preserved recreational areas.

Impacts related to past developments were based primarily on aerial photography reviewed within the defined temporal boundaries and included commercial and residential developments as well as the adjacent development related to Schlitterbahn.

Table 4-6: Cumulative Impacts

Within RSA	Approximate Wetland Impacts (Acres)	Area of Disturbance (Acres)
Reasonably foreseeable development[1]	93.9	445.2
Past development—from 1979 to 2014	57.2[2]	1,370.0
Proposed project	0.415	6.1[3]
Total	151.5 2.9% of RSA wetlands affected	1,821.3 34.5% of RSA lands affected

Source: 1996 and 2014 USFWS NWI 7.5 minute quadrangle Crane Island SW, and 1979 aerial photography – Google Earth Pro

[1]Total foreseeable development (**Table 4-5**)

[2]Wetland area estimated from 1996 NWI mapping overlain on 2014 aerial. After reviews of 1979 and 1996 historical aerial photography, an additional 15% was added to account for margin of error.

[3]This calculation contains temporary, permanent and potential impacts of the area between project limits

With the use of aerial photography, approximately 5,272 acres (40.7 percent of RSA) is considered wetlands as defined by the NWI as of 2011 (USFWS 2011). Project jurisdictional determinations identified additional wetlands within the RSA that were not defined in the NWI. The foreseeable actions would account for approximately 445 acres (3.4 percent of RSA) of development impacts, and approximately 94 acres (0.7 percent) of total RSA wetlands. Total past and foreseeable actions within the temporal boundaries are estimated to affect approximately 152 acres (approximately 1.2 percent) of the wetlands within the RSA, and 1,821.3 acres (14 percent) of permanent disturbance or development (past and foreseeable).

In addition to the results described above, the proposed project contributes 0.4 acre (0.003 percent) impact on wetlands, and a maximum of 6.1 acres (0.05 percent) on areas of disturbance or undeveloped land. Effects from past and foreseeable actions would not result in a significant cumulative impact with an additional impact of 152 acres or 1.2 percent impact on RSA wetlands. However, a 1,821-acre impact of undeveloped land shows a 14 percent increase in development by 2035. The results of this analysis show that development continues to impact the island, where wetlands continue to be naturally created and filled. Although development impacts have slowed within the last decade, local officials should be aware that overdevelopment on a barrier island may increase the rate of the island's natural recession towards the mainland.

Although several City planners provided information about foreseeable actions, additional projects may occur within the RSA by year 2035 (upper temporal boundary). Within NWI data, certain wetland habitats are excluded from the national mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and near shore coastal waters. The USFW also excludes certain types of "farmed wetlands" as may be defined by the Food Security Act or that do not coincide with the Cowardin *et al*. definition.

4.2.5 Step 5: Need for Mitigation

Direct wetland impacts would be mitigated under an existing permit (last permit modification request included the proposed PR 22 Bridge Project), which is held by a private developer (SWG-2000-02743, Gulf Shores Joint Venture). As discussed in **Section 3.8.1**, compensatory mitigation will be provided at a 2:1 ratio for emergent wetland impacts. The mitigation plan includes a proposed high marsh area (0.42 acres), a low marsh area (0.48 acres), a vegetative pond (0.07 acres), and an area of open water (0.03 acres) within the mitigation site to promote flora and fauna species diversity and function. The final permit decision took into consideration multiple stakeholder comments (USACE 2015a), and was executed on October 29, 2015 (USACE 2015b).

On a larger scale, with consideration of cumulative wetland impacts in mind, due to the dynamic nature of wetlands and the importance of open space on barrier islands, development on Padre Island should be planned with the minimum disturbance to open space and the maximum amount of preservation and re-vegetation. Mitigation of wetland impacts from projects and other regional development within the RSA rests with agencies having the authority to implement such controls. The City of Corpus Christi also has the ability (through zoning regulations, issuance of building permits, etc.) to balance development and wetlands preservation.

5.0 PERMITS AND COMMITMENTS

Several measures designed to protect and/or enhance the environment are specifically included in the design plans for the proposed project. These measures would be coordinated with the construction contractor through the use of Environmental Issues, Permits and Commitments (EPIC) sheets (**Appendix F**).

Applicable practices, procedures and provisions for storm water, erosions and waste materials and their storage would be imposed during project construction in accordance with the *Storm Water Management Guidelines for Construction Activities* (TxDOT 2002). A SW3P and an NOI letter for CGP would be developed and submitted to TCEQ to ensure that adequate practices are implemented. **Table 5-1** presents the BMPs that could be used during and after construction of the proposed project and canal.

Table 5-1: Best Management Practices

Type of Control	Best Management Practice
Erosion controls	Temporary vegetation, matts, blankets and stabilizing construction entrance with crushed stone.
Sediment controls	Silt fences, rock berms, hay bale barrier fence and brush berms.
Post-construction total suspended solids controls	Vegetative strips, irrigation, and reinforced filter fabric barrier fence.

During construction, contractors would maintain erosion and sediment control systems, protect existing and planted vegetation, appropriately store construction materials, control dust, designate wash and maintenance areas (or accomplish these activities offsite), and collect and dispose waste. Particular BMPs may be revised during construction to better accommodate real-life circumstances.

- Wetland impacts would be mitigated under an existing permit held by a private developer (SWG-2000-02743, Gulf Shores Joint Venture). The permit was reviewed by USACE, and based on comments from multiple stakeholders, was executed on October 29, 2015.
- Since a Section 404 Permit would be required, TCEQ Section 401 Water Quality Certification including appropriate Best Management Practices would be required.
- TxDOT would comply with TCEQ's TPDES CGP. A SW3P for storm water would be prepared and implemented, and a construction site notice would be posted at the construction sites. An NOI would be required.
- The project is located within a FEMA designated 100-year floodplain. Coordination within the Floodplain Administrator is required.
- In the event that unanticipated archeological deposits are encountered during construction, work in the immediate area would be cease and TxDOT archeological staff would be contacted to initiate post-review discovery procedures.
- Disturbed areas would be re-vegetated according to TxDOT's Vegetation BMPs included in the 2013 TxDOT/TPWD Best Management Practices Program Agreement. Biologists would conduct a search for signs of nests/eggs of migratory birds within the TxDOT PR 22 right-of-way prior to construction of the proposed project.

- *National Bald Eagle Management Guidelines* of 2007 would be adhered to during project construction.
- Unanticipated hazardous materials or contamination that may be encountered during construction would be managed according to federal and state regulations in accordance with TxDOT's Standard Specifications (TxDOT 2014).
- Provisions would be included in the plans and specifications that require the contractor to make every reasonable effort to minimize construction noise through abatement measures such as work-hour controls and proper maintenance of muffler systems.
- Contractors would minimize fugitive dust by using control measures such as covering or treating disturbed areas with dust suppression techniques, sprinkling, covering loaded trucks, and other dust abatement controls, as appropriate.
- Contractors would minimize MSATs by utilizing measures to encourage use of EPA required cleaner diesel fuels, limits on idling, increasing use of cleaner burning diesel engines, and other emission limitation techniques, as appropriate.
- TxDOT is currently coordinating with the TXGLO for project consistency with the TCMP.

6.0 CONCLUSION

An EA is prepared when the significance of the environmental impact of a proposed project is not clearly established. To determine significance, the severity of the impact was examined in terms of the type, quality, and sensitivity of the resources involved; the location of the proposed project; the duration of the effect (short-term/long-term) and other "context" considerations. If a significant impact is determined for the proposed project, the preparation of an EIS would be recommended. This EA analyzed the potential direct, indirect, and cumulative impacts that may result to the environmental, social, and cultural environments surrounding and within the proposed Park Road 22 Bridge Project.

The purpose of the proposed project is to construct the Park Road 22 Bridge Project to provide an elevated bridge on PR 22 over a canal proposed by a third party. One build alternative and a no-build alternative were evaluated in detail in this EA. The no-build alternative does not meet the purpose and need of the project. The Build Alternative was recommended after assessing the potential environmental, social, and cultural effects. Therefore, this alternative was carried forward as the preferred alternative.

This EA indicates that the proposed project would not cause significant social, economic and environmental effects, thus an EIS is not required. Therefore, a FONSI is anticipated.

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FIGURES

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San Antonio, Texas 78249
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(210)699-6426 FAX
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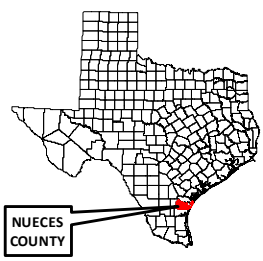
TBPE Firm Number 3257

SOURCE: Basemaps Provided by Environmental Systems Research Institute (ESRI)

PROJECT LOCATION MAP

PR 22 BRIDGE
FROM WHITECAP BLVD TO COMMODORES DR (SH 361)
CORPUS CHRISTI, NUECES COUNTY, TEXAS
CSJ: 0617-02-064



0 500 1,000 2,000
FEET
1 INCH = 2,000 FEET

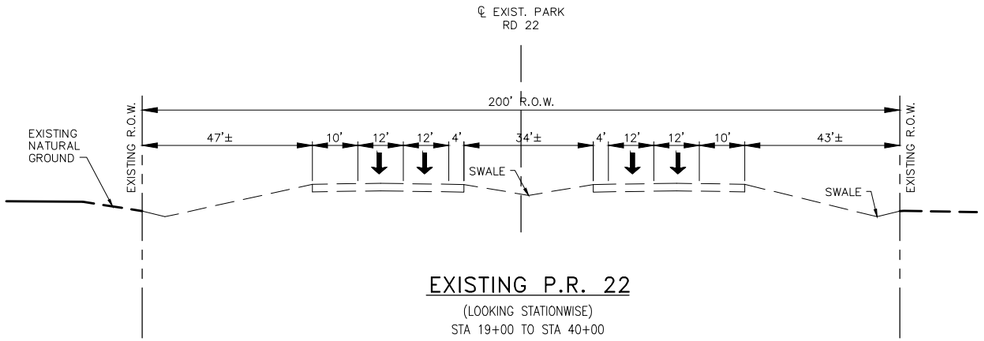
FIGURE 1-1

NOTE: This Drawing is Provided for Illustration Only, May Not be to Scale and is Not Suitable for Design or Construction Purposes

Figure 1-2

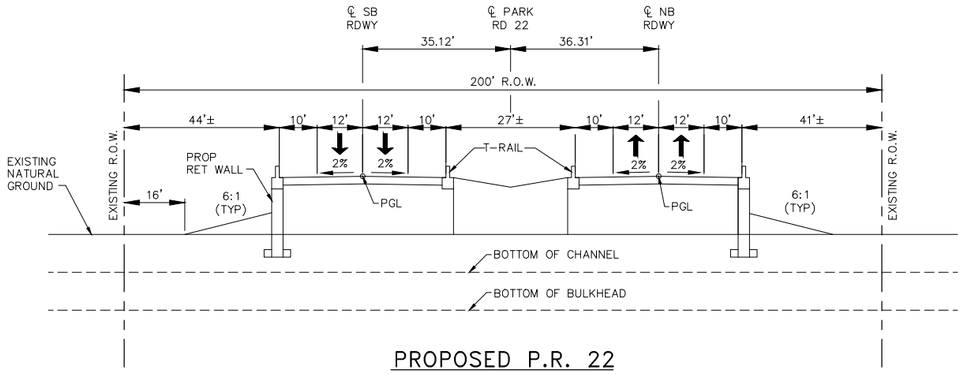
Typical Sections

90% SUBMITTAL



EXISTING P.R. 22

(LOOKING STATIONWISE)
STA 19+00 TO STA 40+00
SCALE: N.T.S.

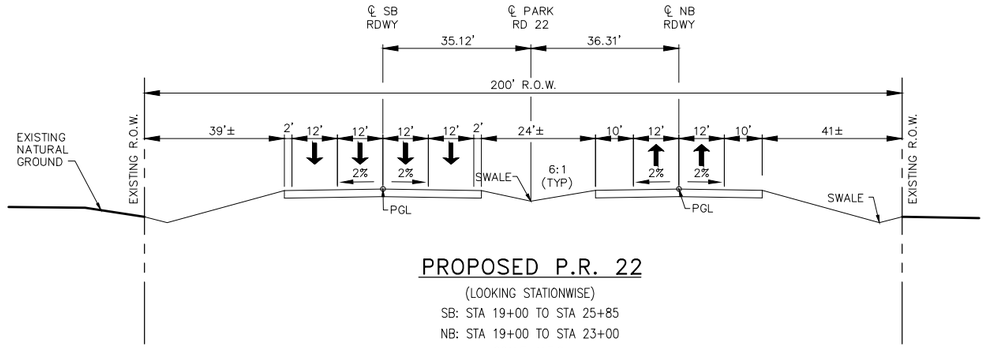


PROPOSED P.R. 22

(LOOKING STATIONWISE)
SB: STA 25+85 TO STA 33+74
NB: STA 23+00 TO STA 35+00

FOR STA 28+86 TO STA 30+14 SEE BRIDGE LAYOUT

SCALE: N.T.S.



PROPOSED P.R. 22

(LOOKING STATIONWISE)
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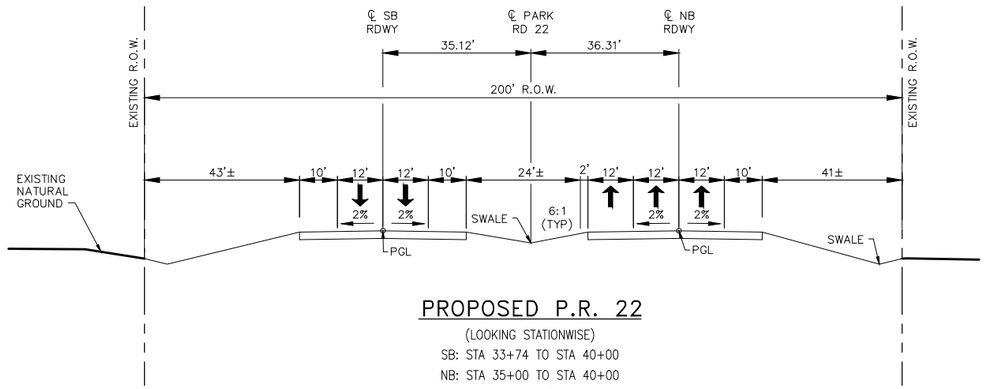
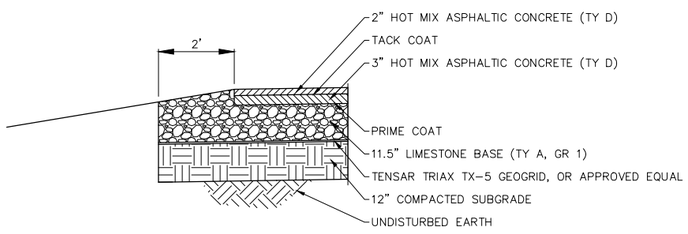
NB: STA 19+00 TO STA 23+00
SCALE: N.T.S.



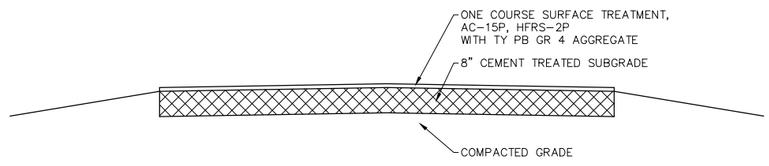
PROPOSED P.R. 22

(LOOKING STATIONWISE)
SB: STA 33+74 TO STA 40+00
NB: STA 35+00 TO STA 40+00
SCALE: N.T.S.



TYPICAL PAVEMENT SECTION

SCALE: N.T.S.



TEMPORARY PAVEMENT SECTION

SCALE: N.T.S.

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U.E. JOB NO. 42481.00.00

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Engineer: J. ABEL GUZMAN
P.E. Serial No.: 96760
Date: JANUARY 19, 2015

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CORPUS CHRISTI, TEXAS
Firm Reg. No. 329 Street St. Suite 1200, Houston, Texas 77002 Phone: (713) 651-0707 Fax: (713) 651-0849

DESCRIPTION | BY | DATE | REVISION NO.

CITY OF
CORPUS CHRISTI
TEXAS
Department of Engineering Services

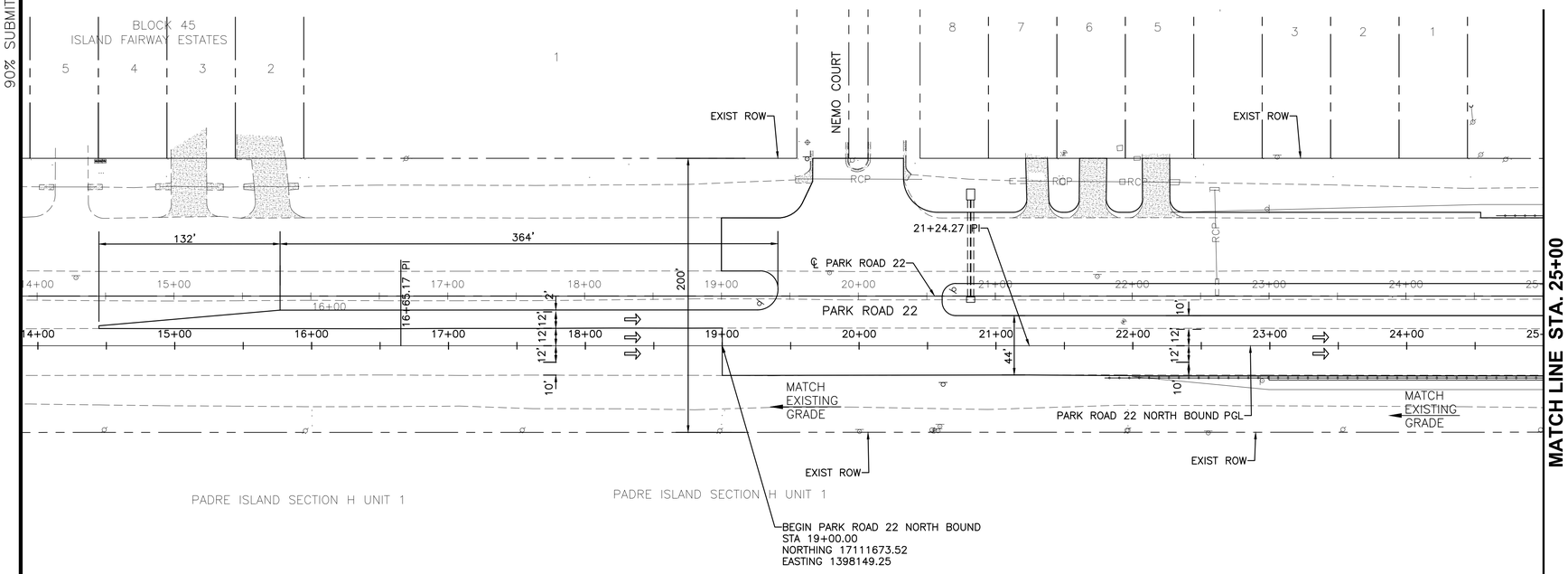
PARK ROAD 22 BRIDGE
(BOND 2004)

TYPICAL SECTIONS

SHEET 2 of 76
RECORD DRAWING NO.
**
CITY PROJECT # 6281

Figure 1-3

Bridge and Roadway Plans and Profiles

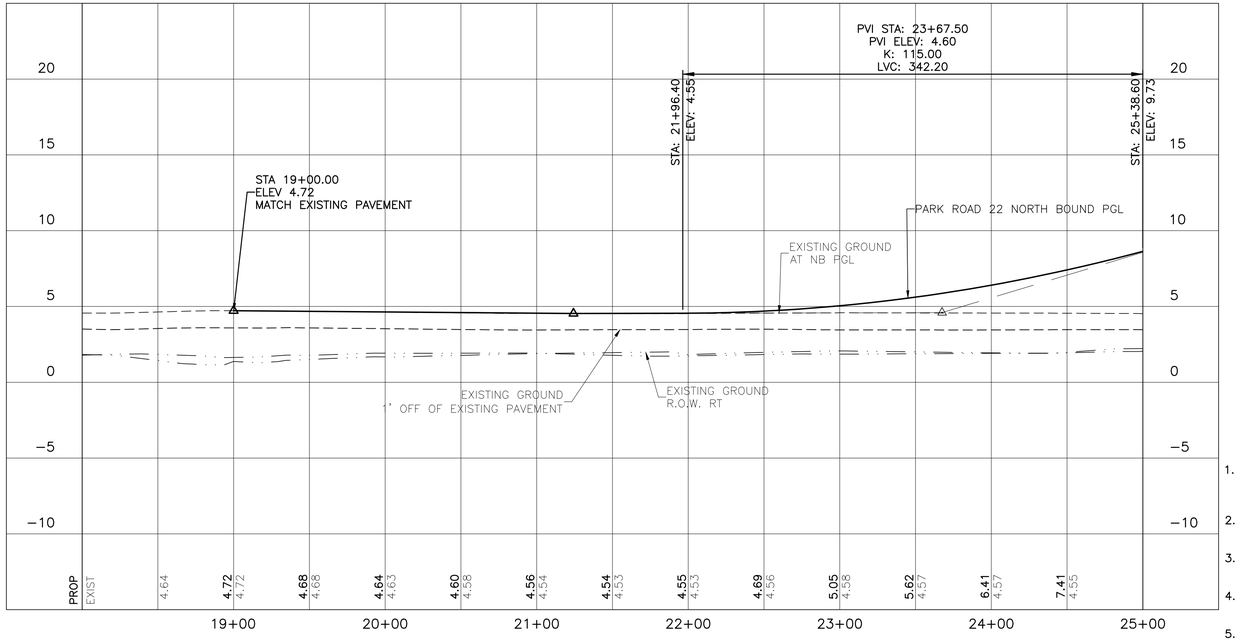


SCALE: 1" = 50' (H)
SCALE: 1" = 5' (V)

0 25 50 100

LEGEND

- PROPOSED ROADWAY
- PROPOSED WASTEWATER LINE
- PROPOSED WATER LINE
- PROPOSED FIRE HYDRANT
- PROPOSED STORMSEWER
- PROPOSED STREET BARRICADE
- EX GAS
- EX ATT
- EX WATER
- EX WASTEWATER
- EX SANITARY SEWER
- EX STORM SEWER
- EX OVERHEAD UTILITY
- EDGE OF PAVEMENT
- DIRECTION OF FLOW & SLOPE
- INV INVERT ELEVATION
- EL SPOT ELEVATION
- TRAFFIC DIRECTION



PROFILE LEGEND:
EXIST. GROUND @ R.O.W. LT.
EXIST. GROUND @ R.O.W. RT.
EXIST. GROUND @ CENTER LINE
PROFILE GRADE LINE

PROFILE SCALE:
1"= 50' HORIZONTAL
1"= 5' VERTICAL

1. CONTRACTOR SHALL VERIFY DRIVEWAY LOCATIONS IN THE FIELD PRIOR TO CONSTRUCTION. SEE DRIVEWAY DETAIL SHEETS FOR FURTHER INFORMATION.
2. EXISTING GROUND PROFILE SHOWN IS AT THE PGL OF PROPOSED ROADWAY UNLESS OTHERWISE NOTED.
3. ALL DIMENSIONS SHOWN TO EDGE OF PAVEMENT OR LIP OF GUTTER UNLESS OTHERWISE NOTED.
4. ALL RADII ALONG CURB AND GUTTER ARE SHOWN TO FACE OF CURB.
5. SEE DRAINAGE SHEETS FOR DRAINAGE CALCULATIONS AND DRAINAGE LAYOUT.

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE APPROXIMATE. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE LOCATION OF UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR IS TOTALLY RESPONSIBLE FOR COORDINATING THE LOCATION, AND PRESERVATION OF EXISTING DRY UTILITIES (ELECTRIC, TELEPHONE, CABLE, ETC.).

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CITY OF CORPUS CHRISTI TEXAS
Department of Engineering Services

PARK ROAD 22 BRIDGE (BOND 2004)

NORTH BOUND ROADWAY PLAN & PROFILE 18+00.00–25+00.00

SHEET 15 of 76
RECORD DRAWING NO.
**
CITY PROJECT # 6281

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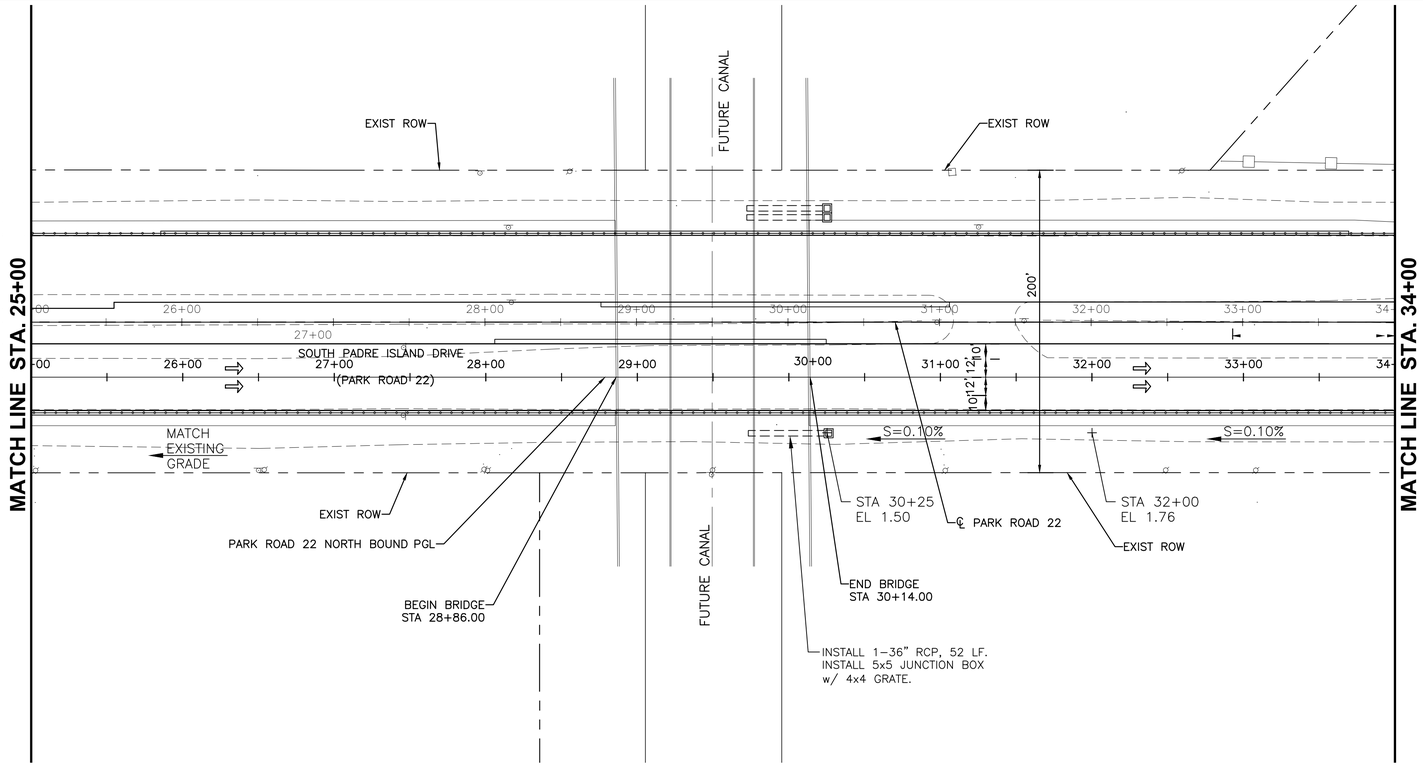

SCALE: 1" = 50' (H)
SCALE: 1" = 5' (V)

0 25 50 100

LEGEND

- PROPOSED ROADWAY
- PROPOSED WASTEWATER LINE
- PROPOSED WATER LINE
- PROPOSED FIRE HYDRANT
- PROPOSED STORMSEWER
- PROPOSED STREET BARRICADE
- EX GAS
- EX ATT
- EX WATER
- EX WASTEWATER
- EX SANITARY SEWER
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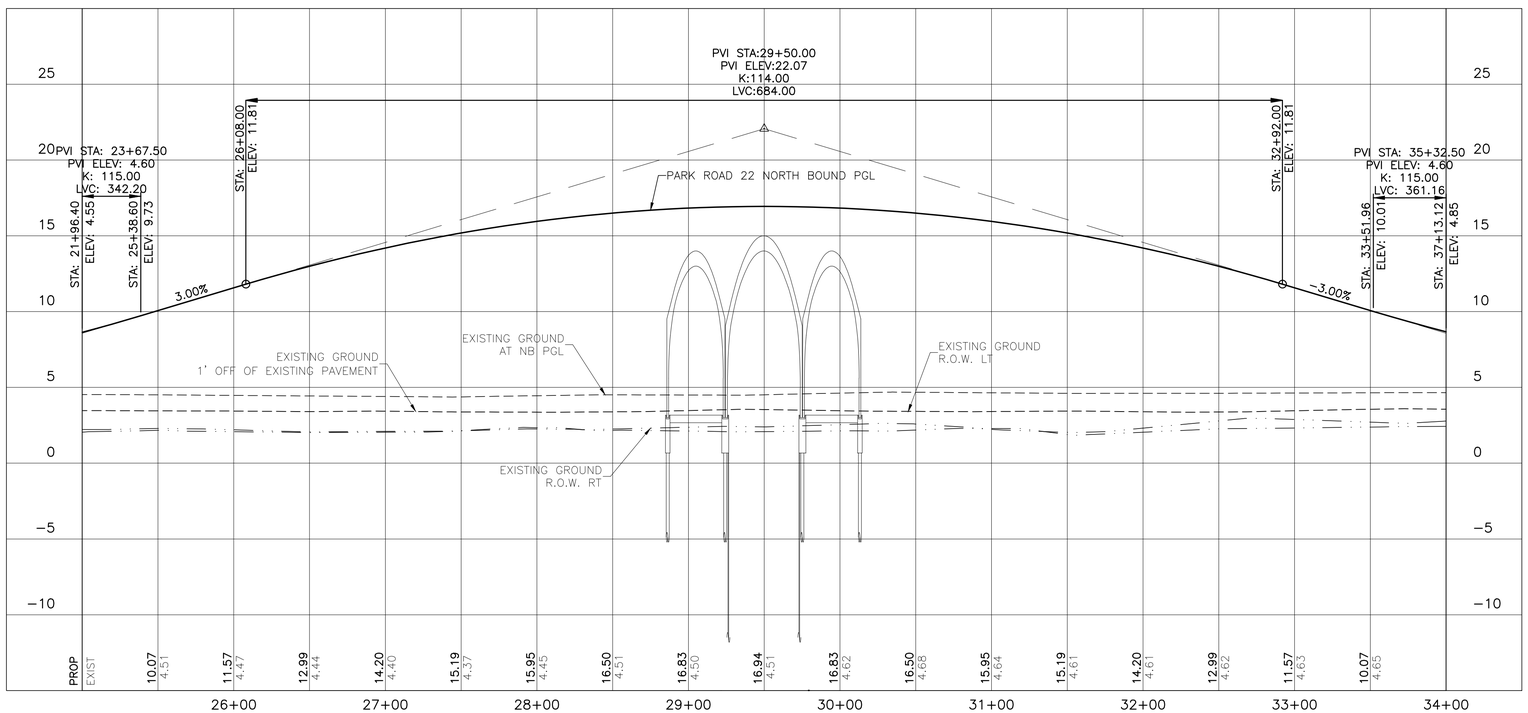
- TRAFFIC DIRECTION



PROFILE LEGEND:
- EXIST. GROUND @ R.O.W. LT.
- EXIST. GROUND @ R.O.W. RT.
- EXIST. GROUND @ CENTER LINE
- PROFILE GRADE LINE

PROFILE SCALE:
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TEXAS
Department of Engineering Services

PARK ROAD 22 BRIDGE
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NORTH BOUND ROADWAY PLAN & PROFILE 25+00.00-34+00.00

SHEET 16 of 76
RECORD DRAWING NO.
**
CITY PROJECT # 6281

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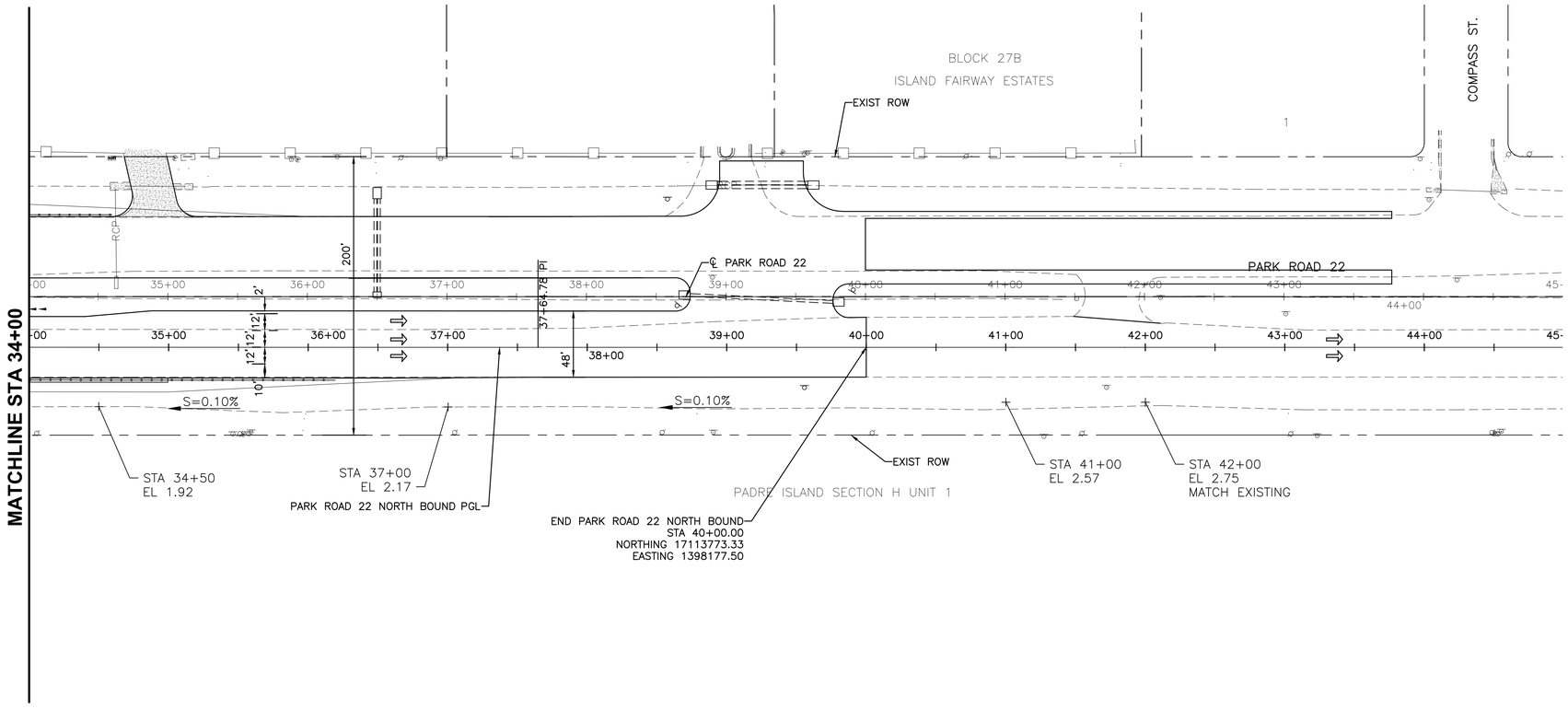

SCALE: 1" = 50' (H)
SCALE: 1" = 5' (V)

0 25 50 100

LEGEND

- PROPOSED ROADWAY
- PROPOSED WASTEWATER LINE
- PROPOSED WATER LINE
- PROPOSED FIRE HYDRANT
- PROPOSED STORMSEWER
- PROPOSED STREET BARRICADE
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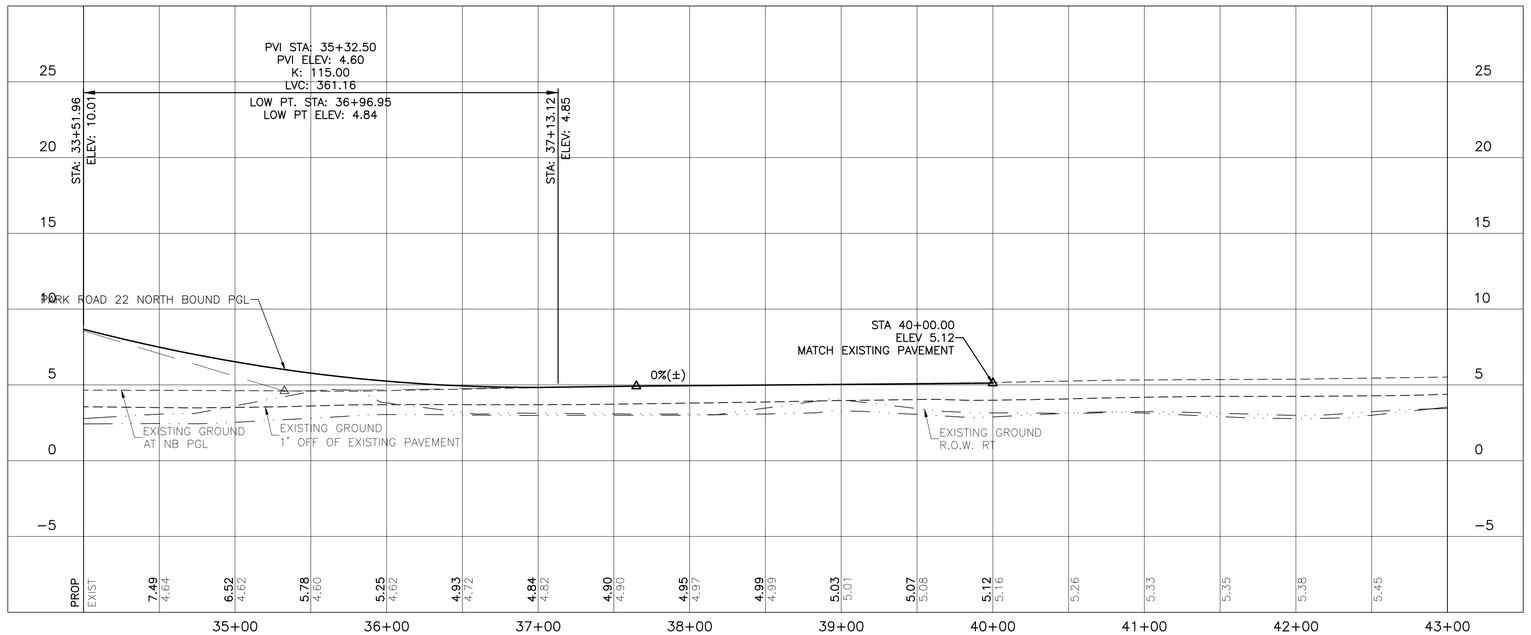

PROFILE LEGEND:
EXIST. GROUND @ R.O.W. LT.
EXIST. GROUND @ R.O.W. RT.
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REVISION NO.	DATE	BY	DESCRIPTION

CITY OF
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TEXAS
Department of Engineering Services

PARK ROAD 22 BRIDGE
(BOND 2004)

NORTH BOUND ROADWAY PLAN &
PROFILE 34+00.00–45+00.00

SHEET 17 of 76
RECORD DRAWING NO.
**
CITY PROJECT # 6281

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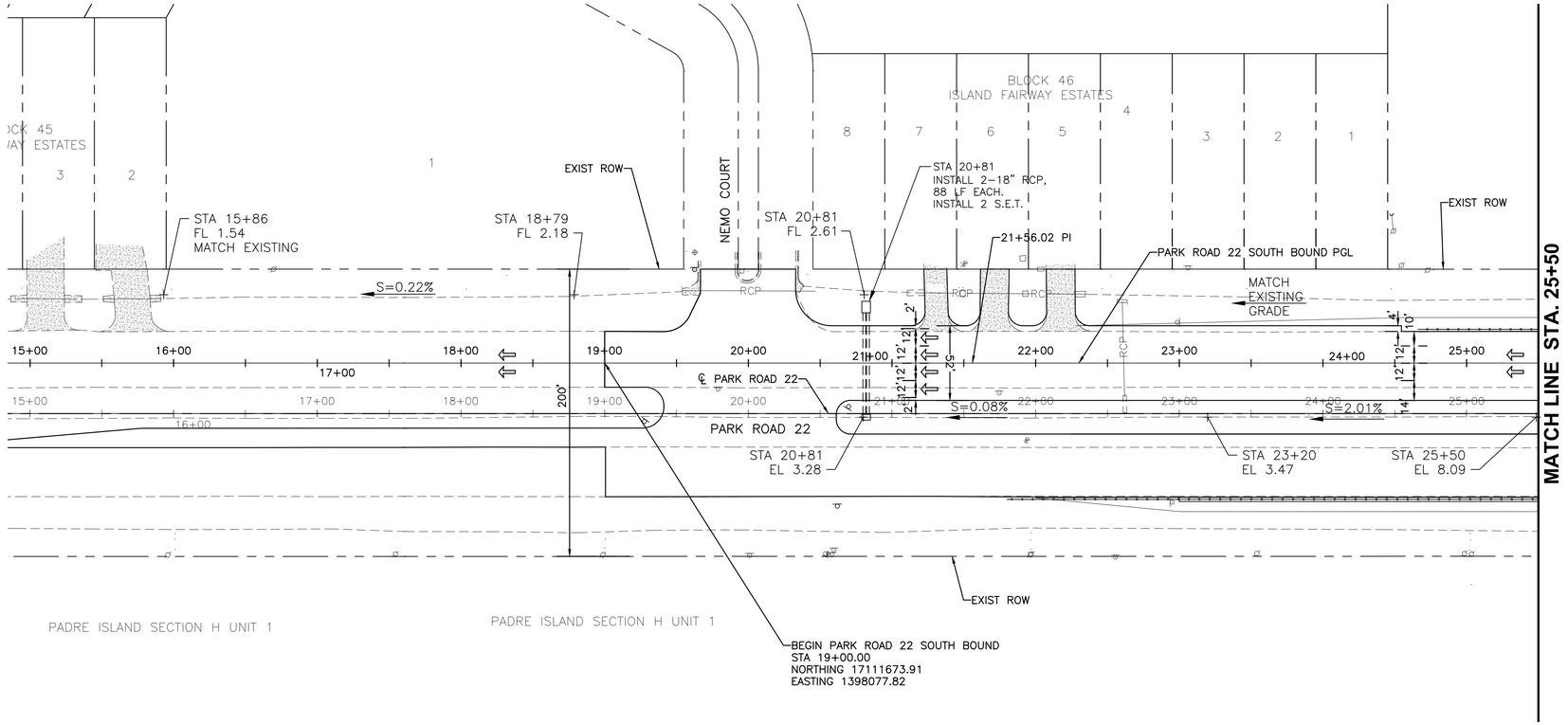

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0 25 50 100

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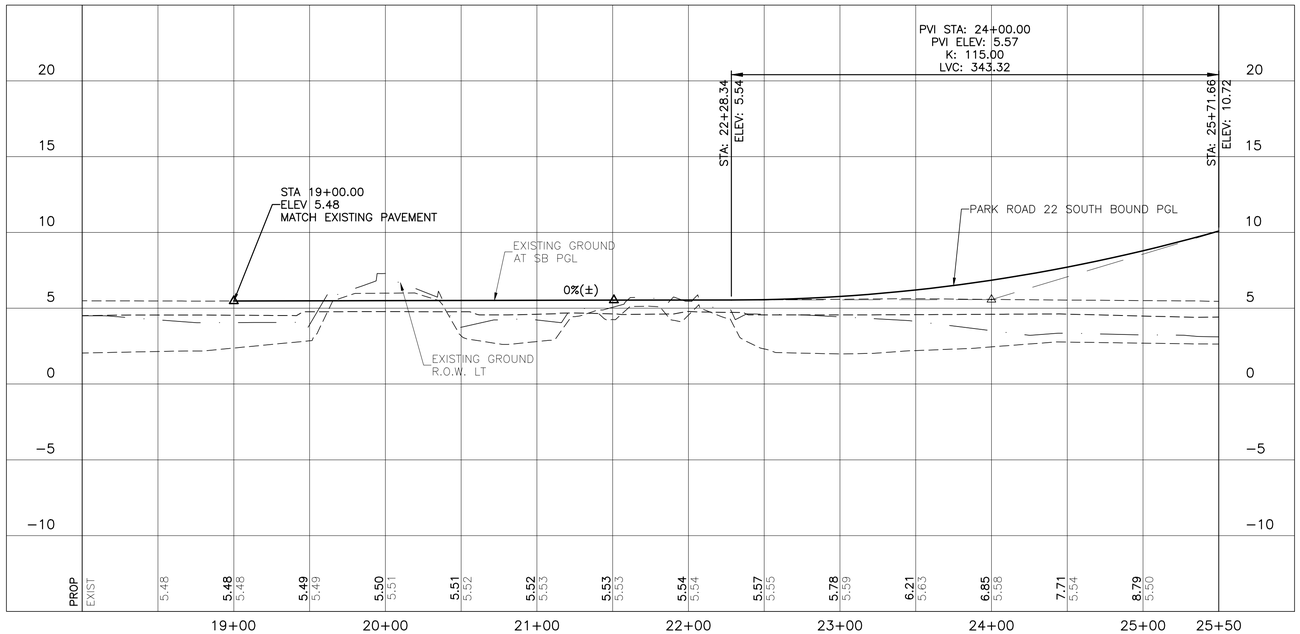

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REVISION NO. | DATE | BY | DESCRIPTION

CITY OF CORPUS CHRISTI TEXAS
Department of Engineering Services

PARK ROAD 22 BRIDGE (BOND 2004)

SOUTH BOUND ROADWAY PLAN & PROFILE 18+00.00–25+00.00

SHEET 18 of 76
RECORD DRAWING NO.
**
CITY PROJECT # 6281

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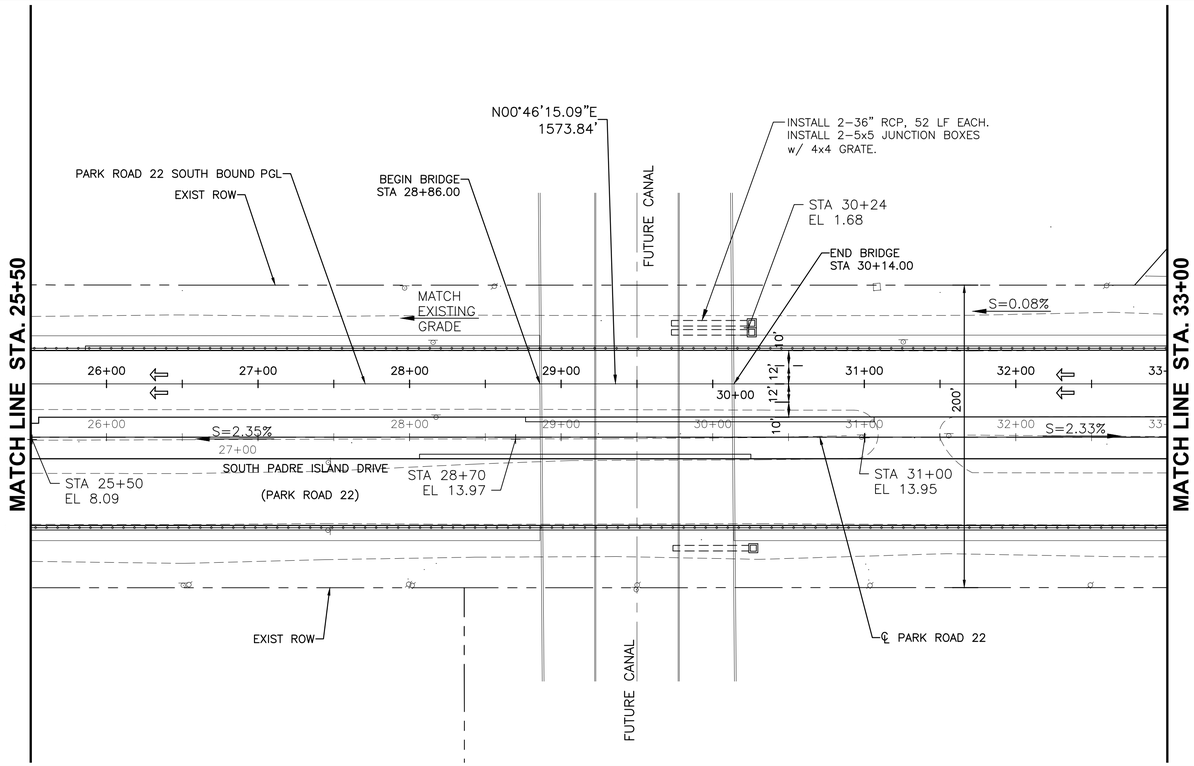

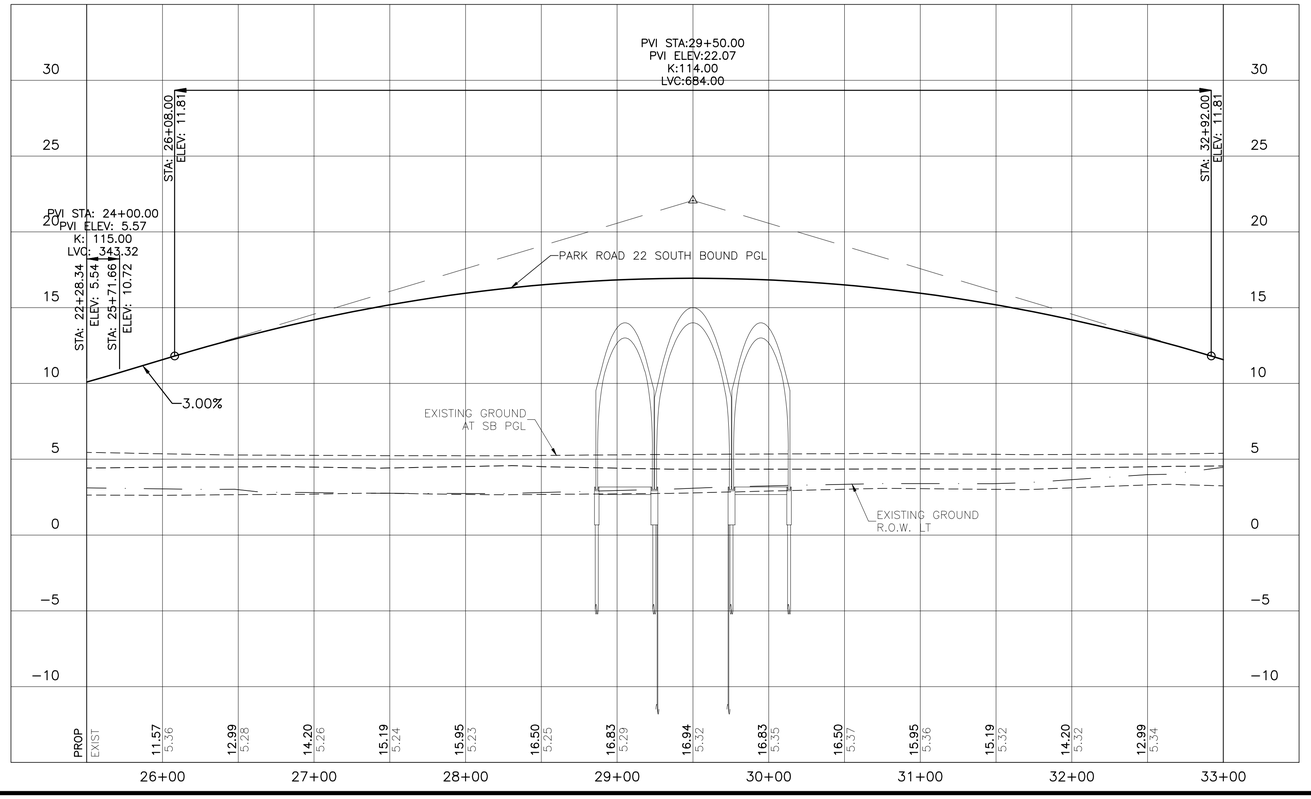

SCALE: 1" = 50' (H)
SCALE: 1" = 5' (V)

0 25 50 100

LEGEND

- PROPOSED ROADWAY
- PROPOSED WASTEWATER LINE
- PROPOSED WATER LINE
- PROPOSED FIRE HYDRANT
- PROPOSED STORMSEWER
- PROPOSED STREET BARRICADE
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- EX ATT
- EX WATER
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- TRAFFIC DIRECTION

PROFILE LEGEND:
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1"= 5' VERTICAL

1. CONTRACTOR SHALL VERIFY DRIVEWAY LOCATIONS IN THE FIELD PRIOR TO CONSTRUCTION. SEE DRIVEWAY DETAIL SHEETS FOR FURTHER INFORMATION.
2. EXISTING GROUND PROFILE SHOWN IS AT THE PGL OF PROPOSED ROADWAY UNLESS OTHERWISE NOTED.
3. ALL DIMENSIONS SHOWN TO EDGE OF PAVEMENT OR LIP OF GUTTER UNLESS OTHERWISE NOTED.
4. ALL RADII ALONG CURB AND GUTTER ARE SHOWN TO FACE OF CURB.
5. SEE DRAINAGE SHEETS FOR DRAINAGE CALCULATIONS AND DRAINAGE LAYOUT.

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE APPROXIMATE. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE LOCATION OF UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR IS TOTALLY RESPONSIBLE FOR COORDINATING THE LOCATION, AND PRESERVATION OF EXISTING DRY UTILITIES (ELECTRIC, TELEPHONE, CABLE, ETC.).

U.E. JOB NO. 42481.00.00

INTERIM REVIEW
Not intended for construction, bidding or permit purposes.
Engineer: J. ABEL GUZMAN
P.E. Serial No.: 96760
Date: JANUARY 19, 2015

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San Antonio, Texas 78213
210.826.4611 | fax 210.826.4906
www.cobbfendley.com

URBAN ENGINEERING
CORPUS CHRISTI, TEXAS

REVISION NO. | DATE | BY | DESCRIPTION

CITY OF
CORPUS CHRISTI
TEXAS
Department of Engineering Services

PARK ROAD 22 BRIDGE
(BOND 2004)

SOUTH BOUND ROADWAY PLAN &
PROFILE 25+00.00−33+00.00

SHEET 19 of 76
RECORD DRAWING NO.
**
CITY PROJECT # 6281

Dwg Info: G:\CFA\2011\12031.park_rd_22\CAD\12031PP.dwg – Tab: 5 – Plotted: 1/19/2015 3:46 PM By: TRAVIS MCCOY

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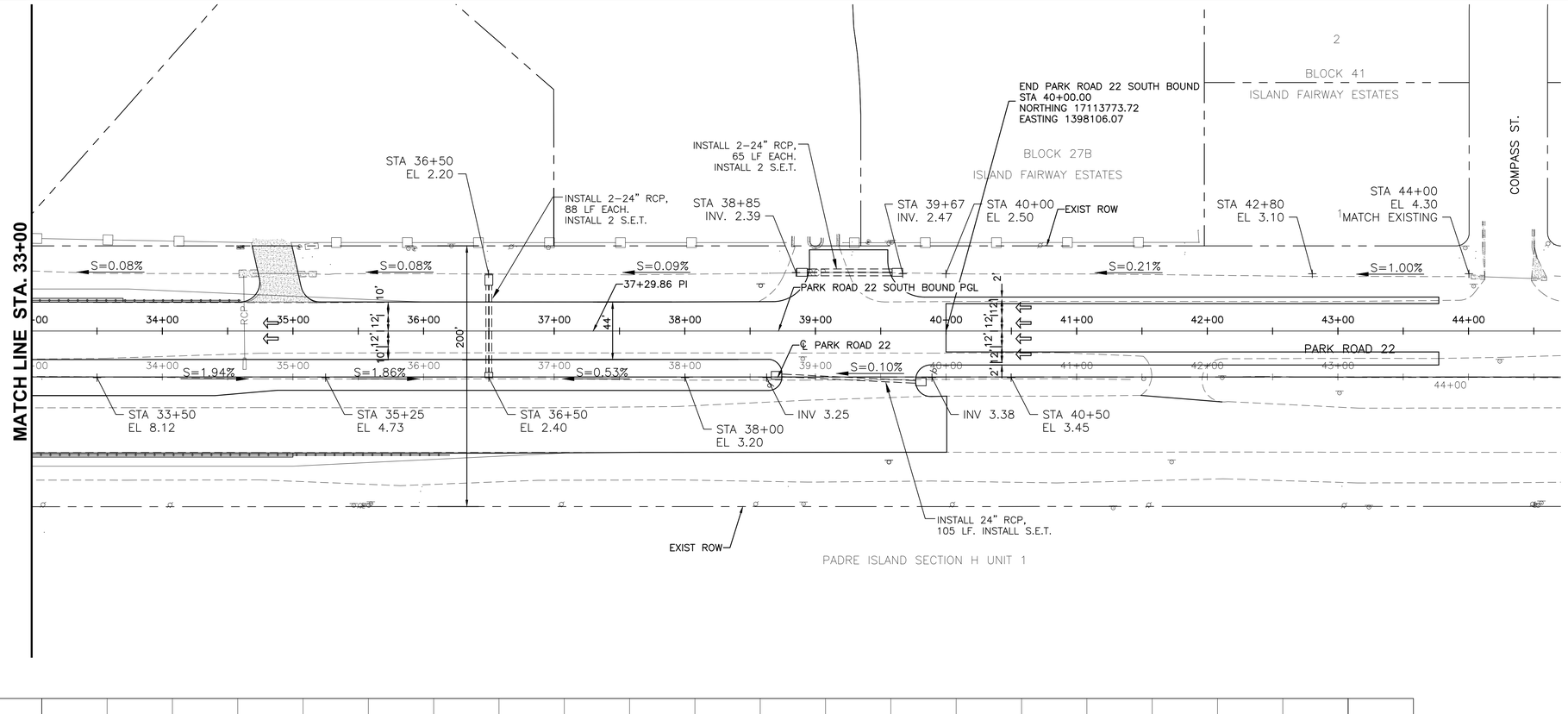

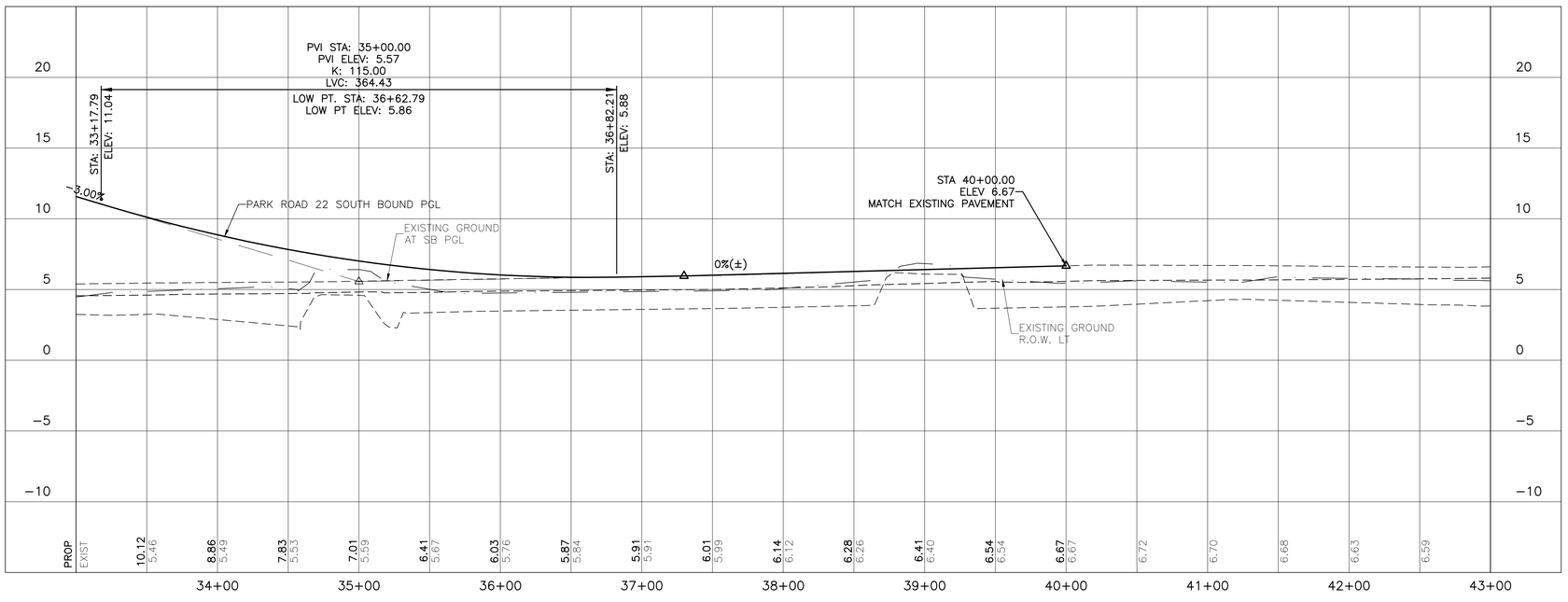

PROFILE LEGEND:
EXIST. GROUND @ R.O.W. LT.
EXIST. GROUND @ R.O.W. RT.
EXIST. GROUND @ CENTER LINE
PROFILE GRADE LINE

PROFILE SCALE:
1"= 50' HORIZONTAL
1"= 5' VERTICAL

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CITY OF
CORPUS CHRISTI
TEXAS
Department of Engineering Services

PARK ROAD 22 BRIDGE
(BOND 2004)

SOUTH BOUND ROADWAY PLAN & PROFILE 33+00.00-44+00.00

SHEET 20 of 76
RECORD DRAWING NO.
**
CITY PROJECT # 6281

REVISION NO. | DATE | BY | DESCRIPTION

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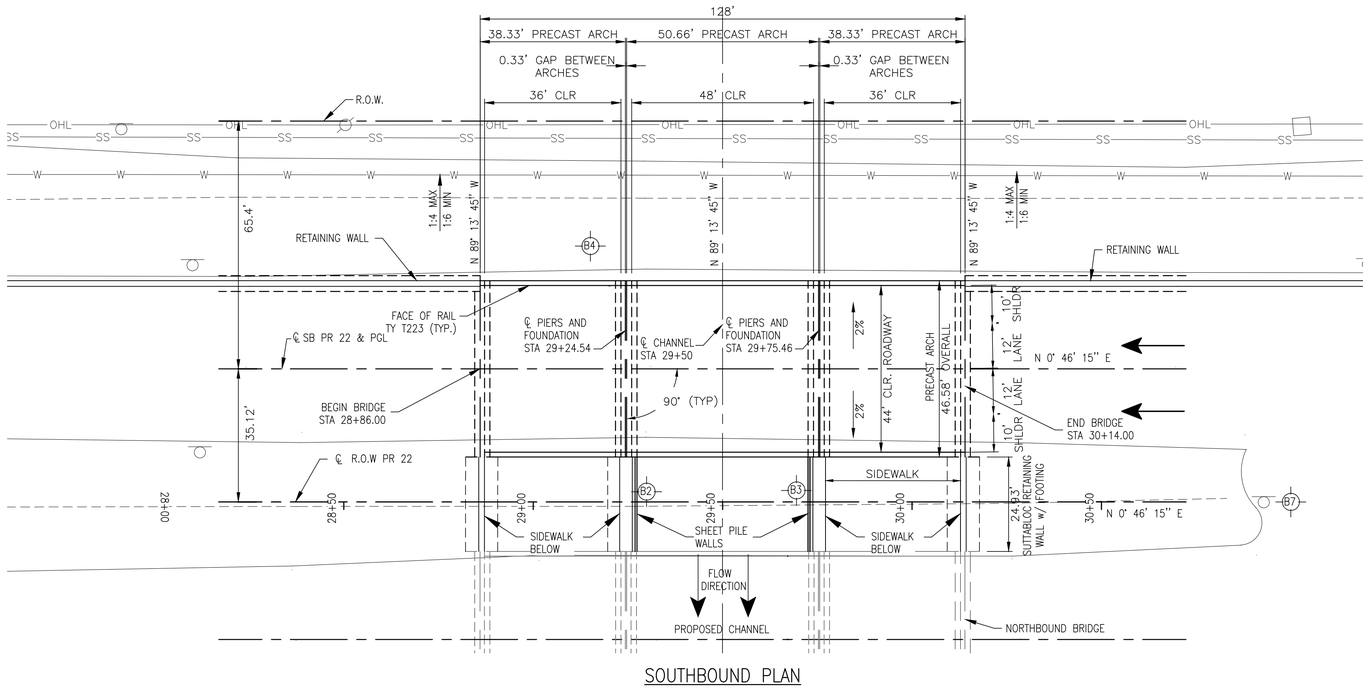
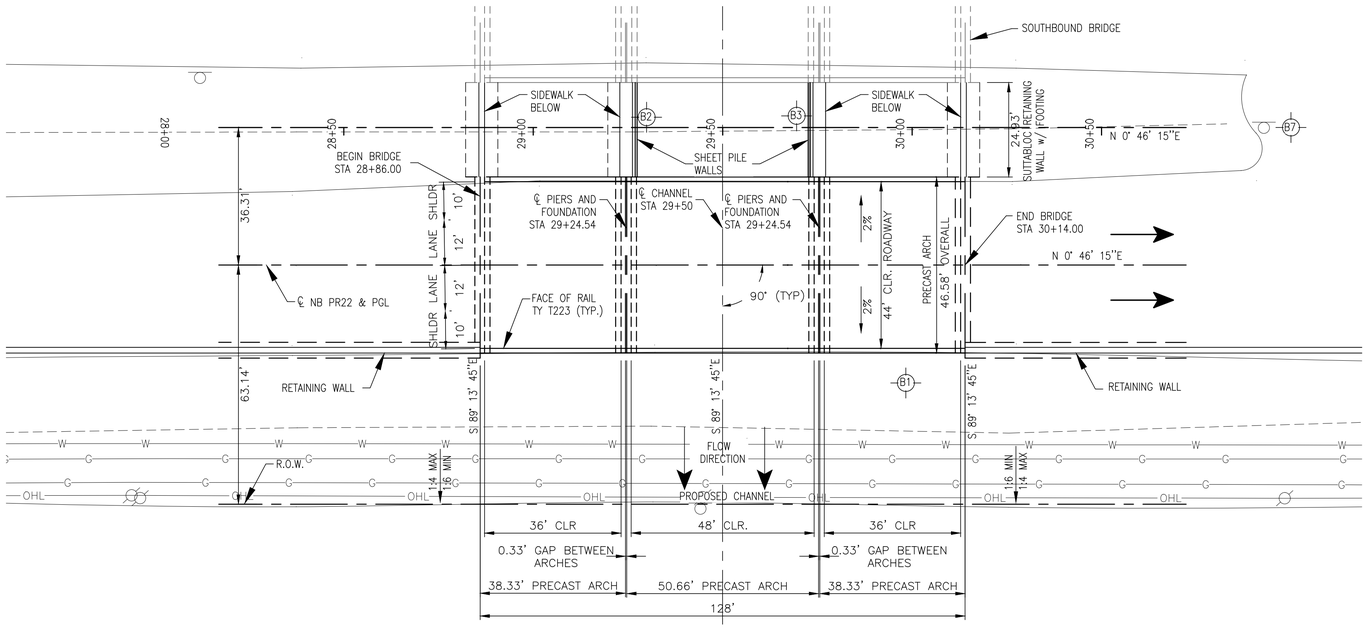


SOUTHBOUND PLAN

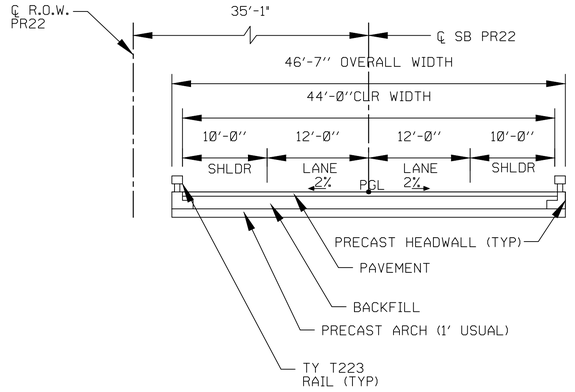


NORTH BOUND PLAN

LEGEND

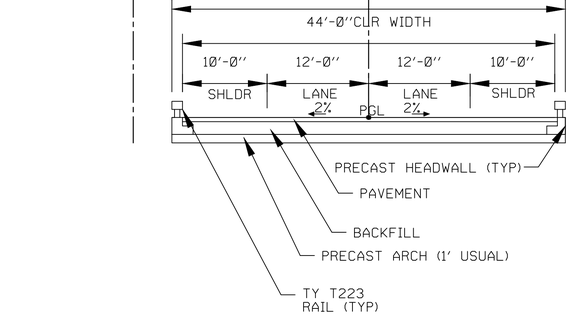
- EXISTING ROW
- PROPOSED ROW
- SS — SANITARY SEWER
- W — WATER LINE
- OH — OVERHEAD UTILITY
- (BX) BORING

0 10 20 40



TYPICAL SB SECTION

NTS



TYPICAL NB SECTION

NTS

NOTES:

1. DESIGNED IN ACCORDANCE WITH 6TH EDITION AASHTO LRFD BRIDGE SPECIFICATIONS HL-93 LOADING
2. DESIGN SPEED:55 MPH
3. ADT 2011:17054 VPD
   ADT 2031:24021 VPD
4. FUNCTIONAL CLASSIFICATION:SUBURBAN ARTERIAL
5. NBI: NEW
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REVISION NO.	DATE	BY	DESCRIPTION
2	7/15/2014	RR	REVISED FOR 3 ARCH CONFIG
1	6/25/2013	FEG	60% SUBMITTAL
0	5/10/2013	FEG	ORIGINALS

U.E. JOB NO. 42481.00.00

INTERIM REVIEW
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Firm No. 1401 1220 Third St. Corpus Christi, Tx 78404
Firm No. 10529400 TBPE Firm No. 3937 TBPLS

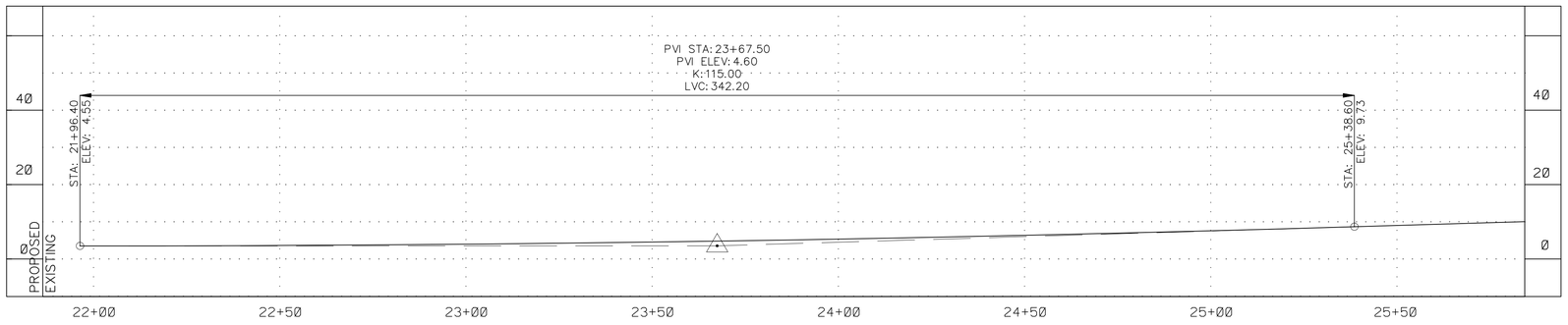
CITY OF CORPUS CHRISTI TEXAS
Department of Engineering Services

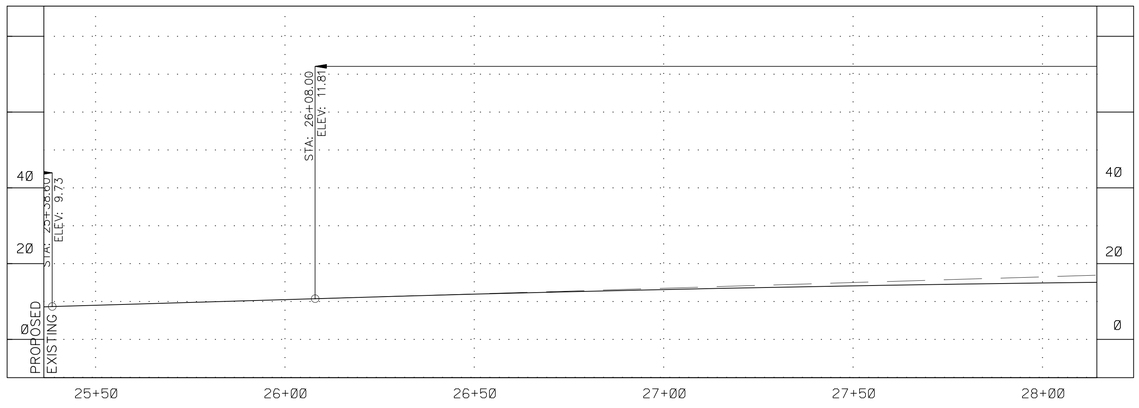
PARK ROAD 22 BRIDGE (BOND 2004)

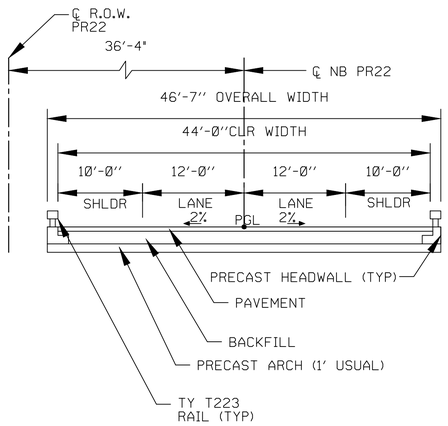
NB AND SB BRIDGE PLANS

SHEET 30 of 76
RECORD DRAWING NO.
**
CITY PROJECT # 6281

Dwg Info: G:\CFA\2011\12031.park_rd_22\CADD\12031BRDG-LAYOUT.dwg - Tab: NB-SB PLANS - Plotted: 1/19/2015 3:50 PM By: TRAVIS MCCOY

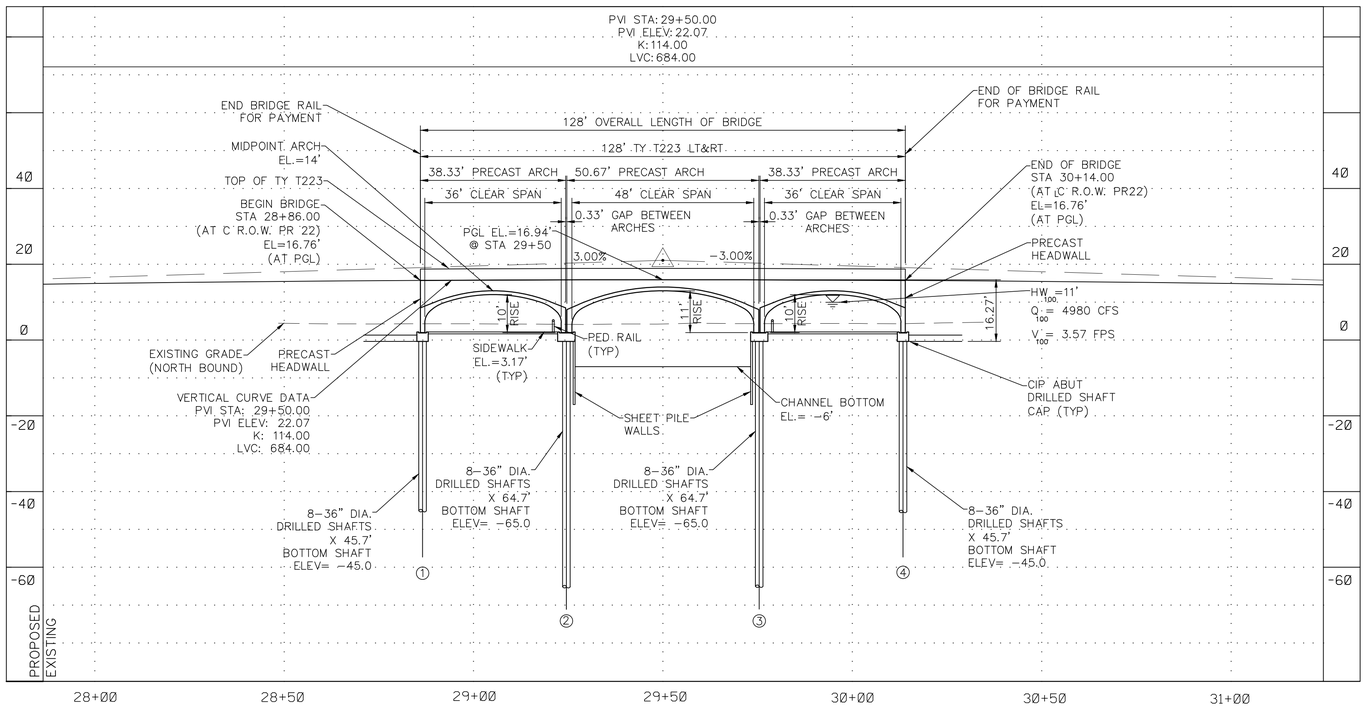






TYPICAL SECTION

NTS



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CITY OF
CORPUS CHRISTI
TEXAS
Department of Engineering Services

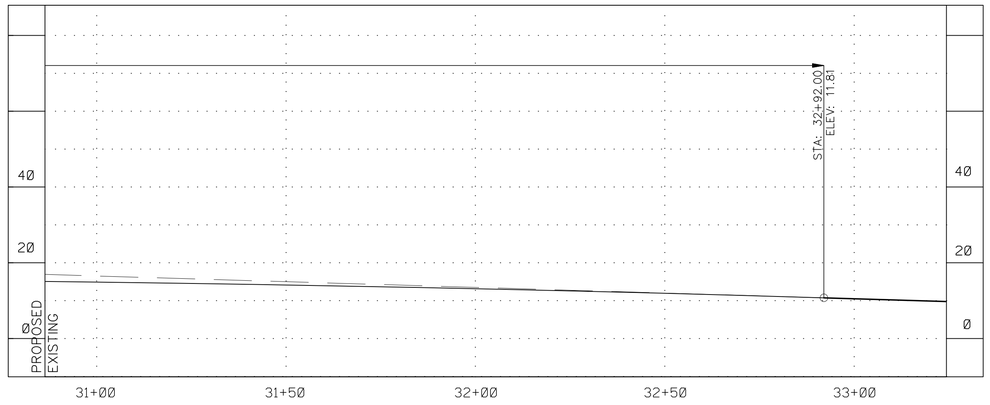
PARK ROAD 22 BRIDGE
(BOND 2004)

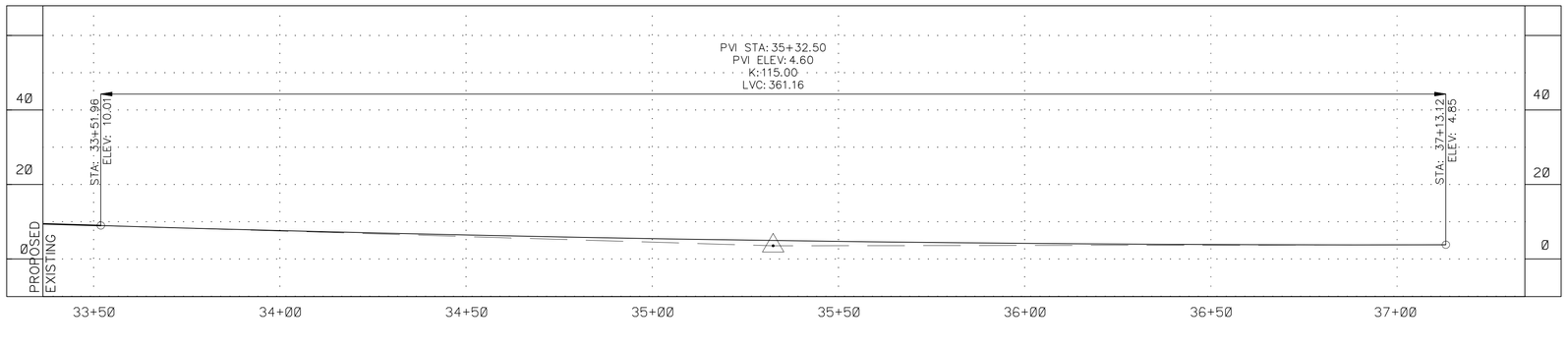
NB BRIDGE PROFILE 1

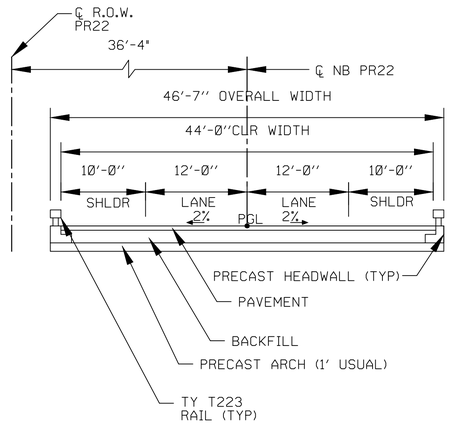
SHEET 31 of 76
RECORD DRAWING NO.
**
CITY PROJECT # 6281

90% SUBMITTAL

Dwg Info: G:\CFA\2011\12031.park_rd_22\CAD\12031BRDG-LAYOUT.dwg - Tab: NB-PROF-01 - Plotted: 1/19/2015 3:50 PM By: TRAVIS MCCOY







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CITY OF CORPUS CHRISTI TEXAS
Department of Engineering Services

PARK ROAD 22 BRIDGE (BOND 2004)

NB BRIDGE PROFILE 2

SHEET 32 of 76
RECORD DRAWING NO.
**
CITY PROJECT # 6281

90% SUBMITTAL

Dwg Info: G:\CFA\2011\12031.park_rd_22\CAD\12031BRDG-LAYOUT.dwg - Tab: NB-PROF-02 - Plotted: 1/19/2015 3:50 PM By: TRAVIS MCCOY

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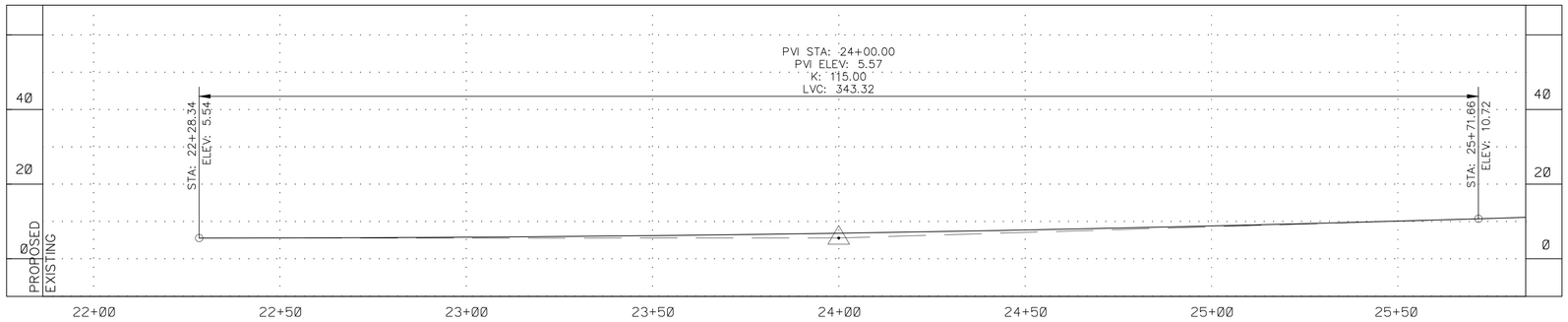
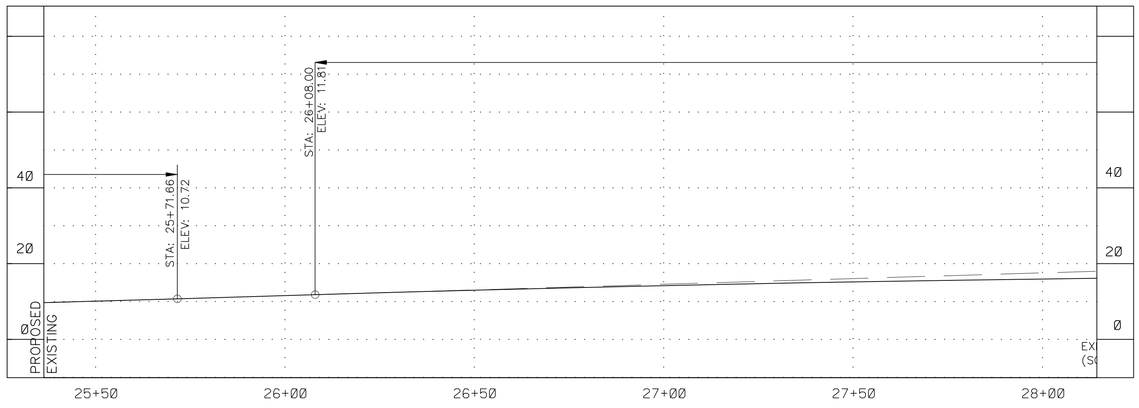
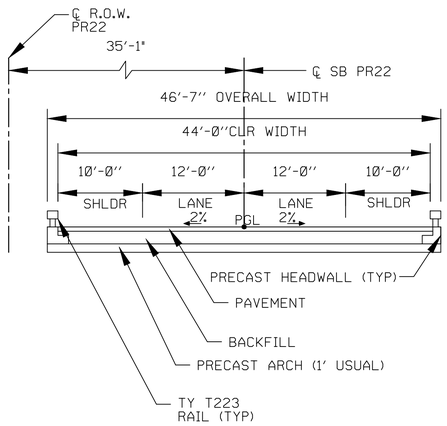
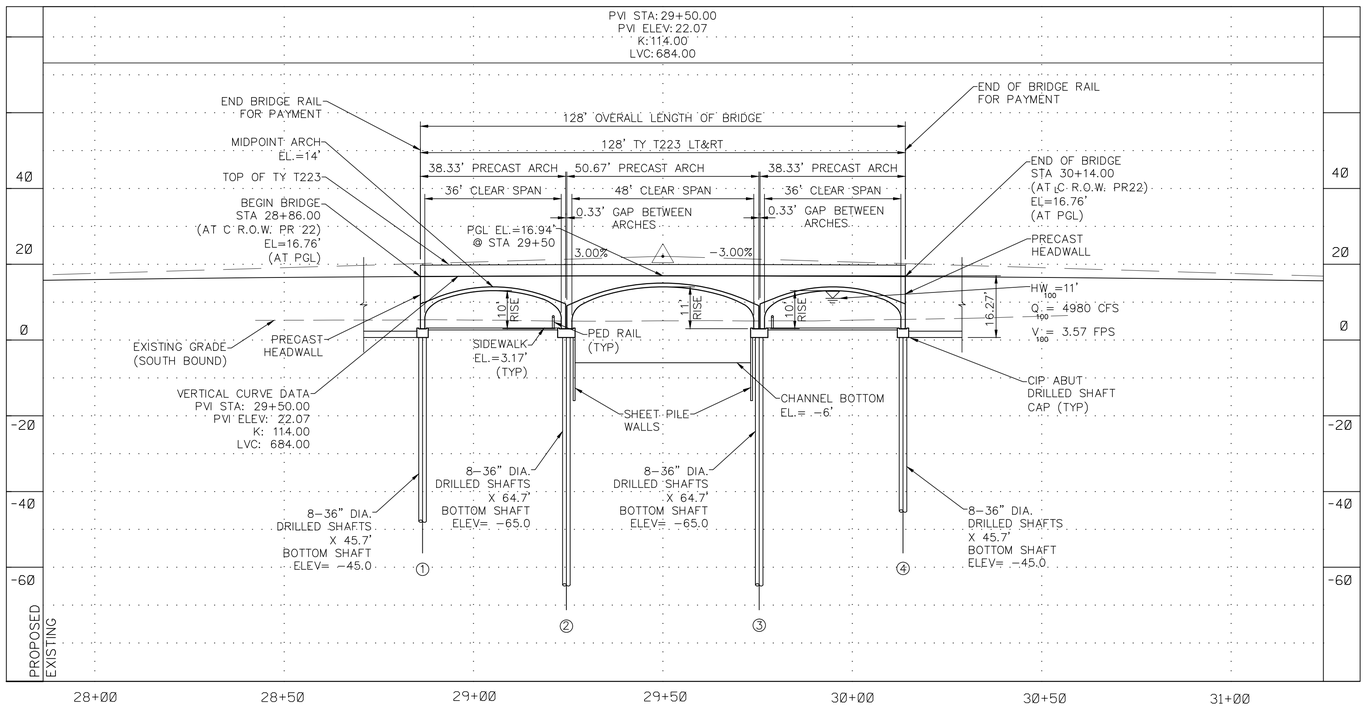






TYPICAL SB SECTION

NTS



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Department of Engineering Services

PARK ROAD 22 BRIDGE
(BOND 2004)

SB BRIDGE PROFILE 1

SHEET 33 of 76
RECORD DRAWING NO.
**
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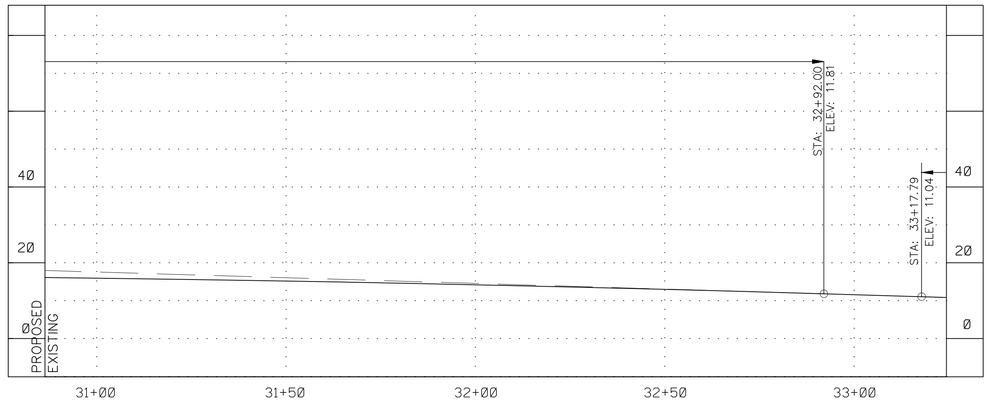
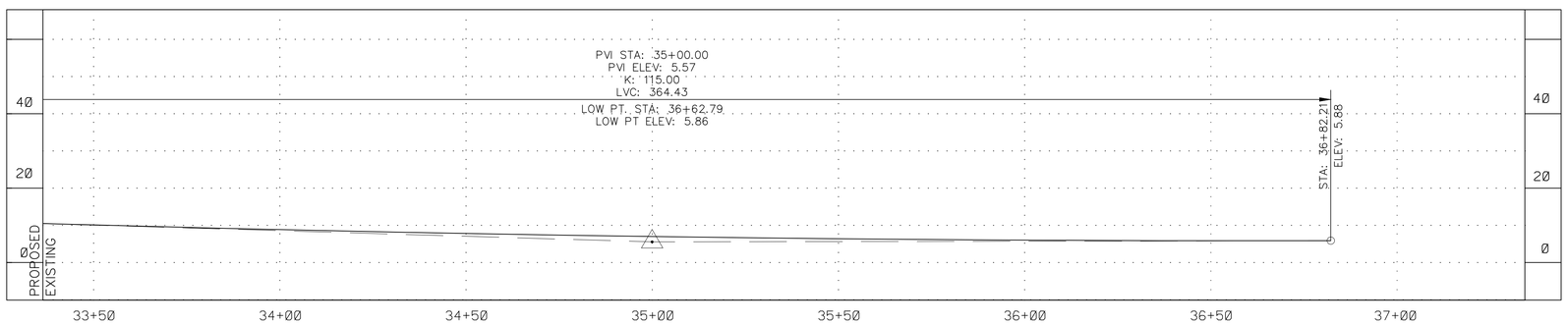
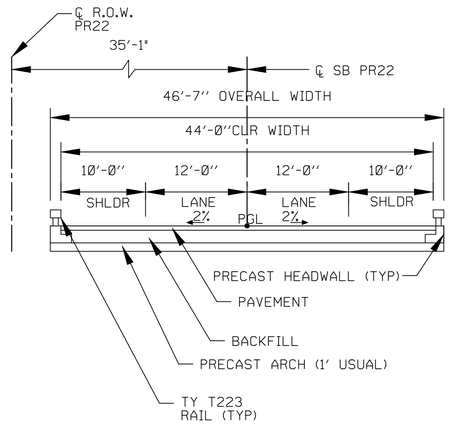
Dwg Info: G:\CFA\2011\12031.park_rd_22\CAD\12031BRDG-LAYOUT.dwg - Tab: SB-PROF-01 - Plotted: 1/19/2015 3:50 PM By: TRAVIS MCCOY







TYPICAL SB SECTION

NTS

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CORPUS CHRISTI, TEXAS

CITY OF CORPUS CHRISTI TEXAS
Department of Engineering Services

PARK ROAD 22 BRIDGE (BOND 2004)

SB BRIDGE PROFILE 2

SHEET 34 of 76
RECORD DRAWING NO.
**
CITY PROJECT # 6281

90% SUBMITTAL

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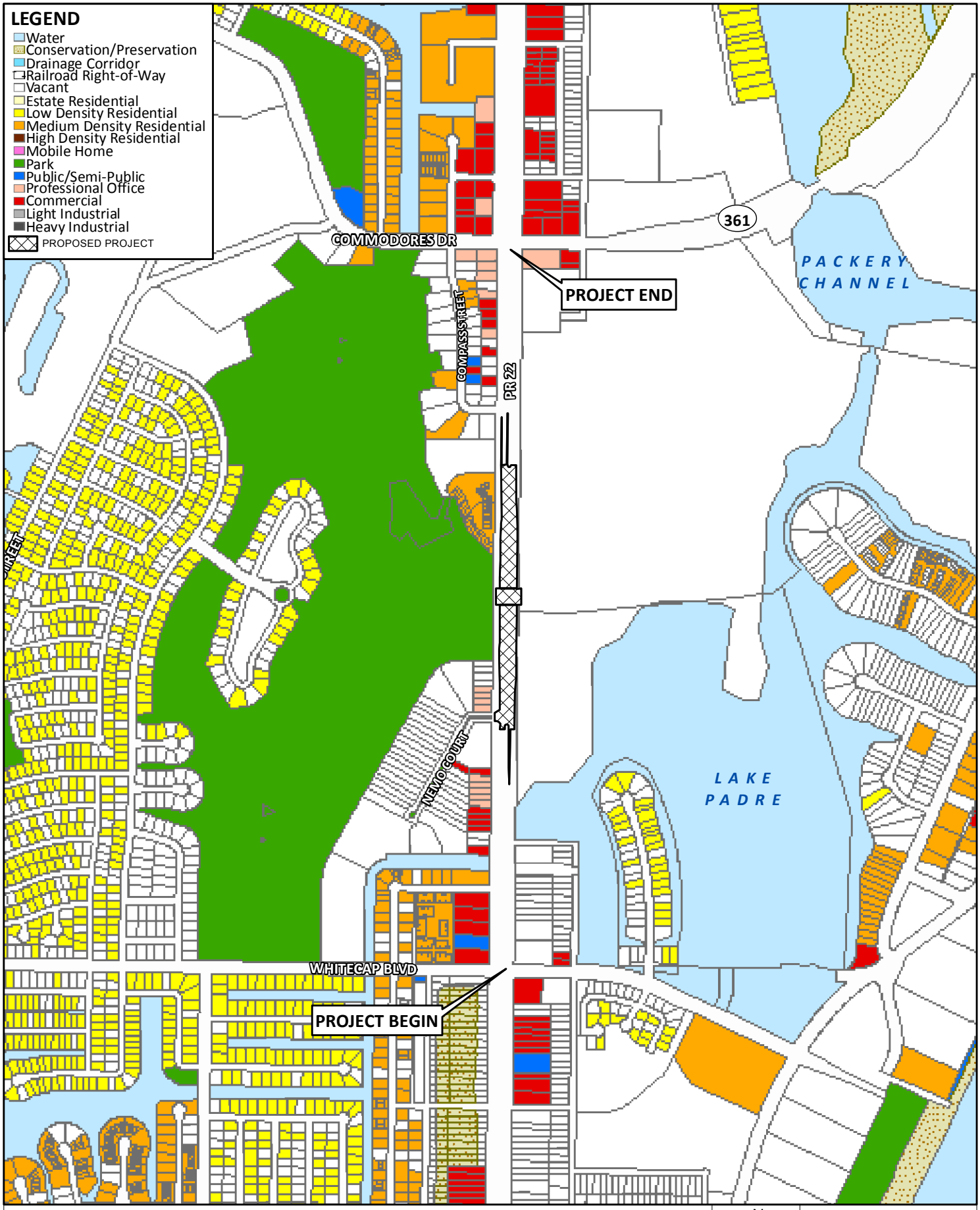


LAND USE

PR 22 BRIDGE
FROM WHITECAP BLVD TO COMMODORES DR (SH 361)
CORPUS CHRISTI, NUECES COUNTY, TEXAS
CSJ: 0617-02-064

N
W E
S

0 250 500 1,000
FEET

FIGURE 2-1

SOURCE: Existing Land Use Data Provided by The City of Corpus Christi

CENSUS BOUNDARIES

PR 22 BRIDGE
FROM WHITECAP BLVD TO COMMODORES DR (SH 361)
CORPUS CHRISTI, NUECES COUNTY, TEXAS
CSJ: 0617-02-064

N
W E
S

FIGURE 3-1

SOURCE: Nueces County 2010 Census Data Provided by The Texas State Data Center

SECTION 4(f) RESOURCES

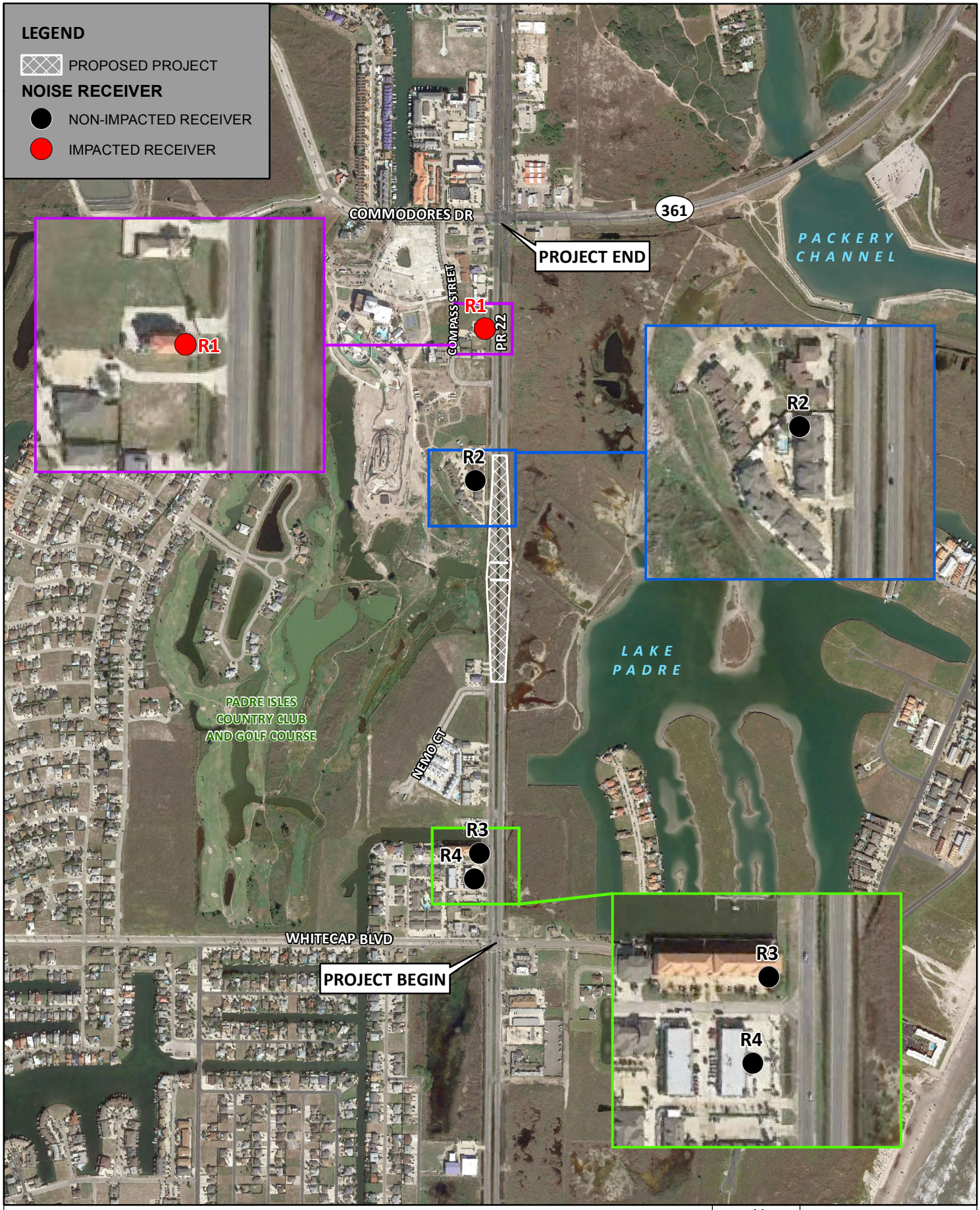
PR 22 BRIDGE
FROM WHITECAP BLVD TO COMMODORES DR (SH 361)
CORPUS CHRISTI, NUECES COUNTY, TEXAS
CSJ: 0617-02-064

N
W E
S

0 1,000 2,000 4,000
FEET

FIGURE 3-2

SOURCE: Basemaps Provided by Environmental Systems Research Institute (ESRI) - 2012



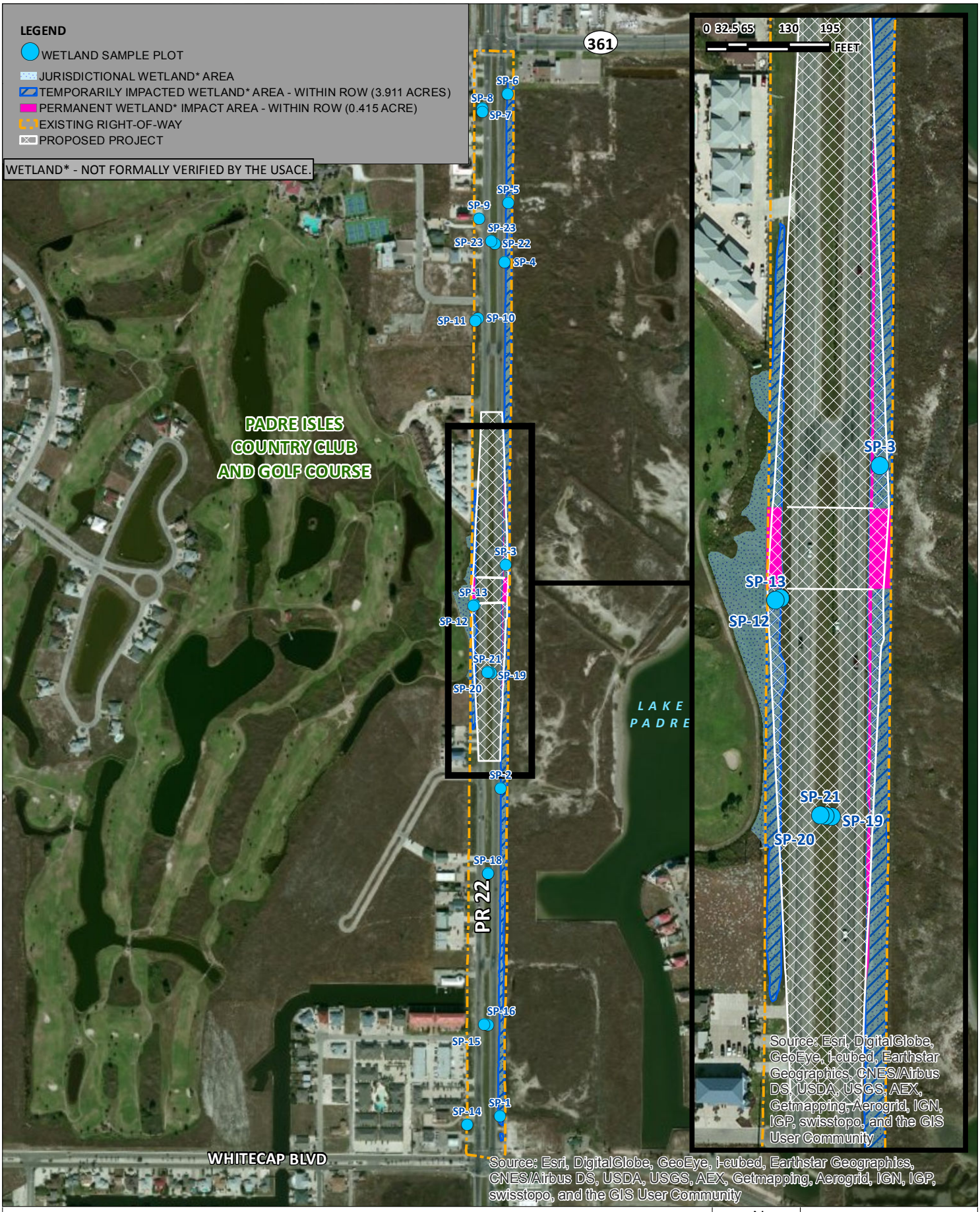
NOISE RECEIVERS

PR 22 BRIDGE
FROM WHITECAP BLVD TO COMMODORES DR (SH 361)
CORPUS CHRISTI, NUECES COUNTY, TEXAS
CSJ: 0617-02-064

N
W E
S

0 250 500 1,000
FEET

FIGURE 3-3



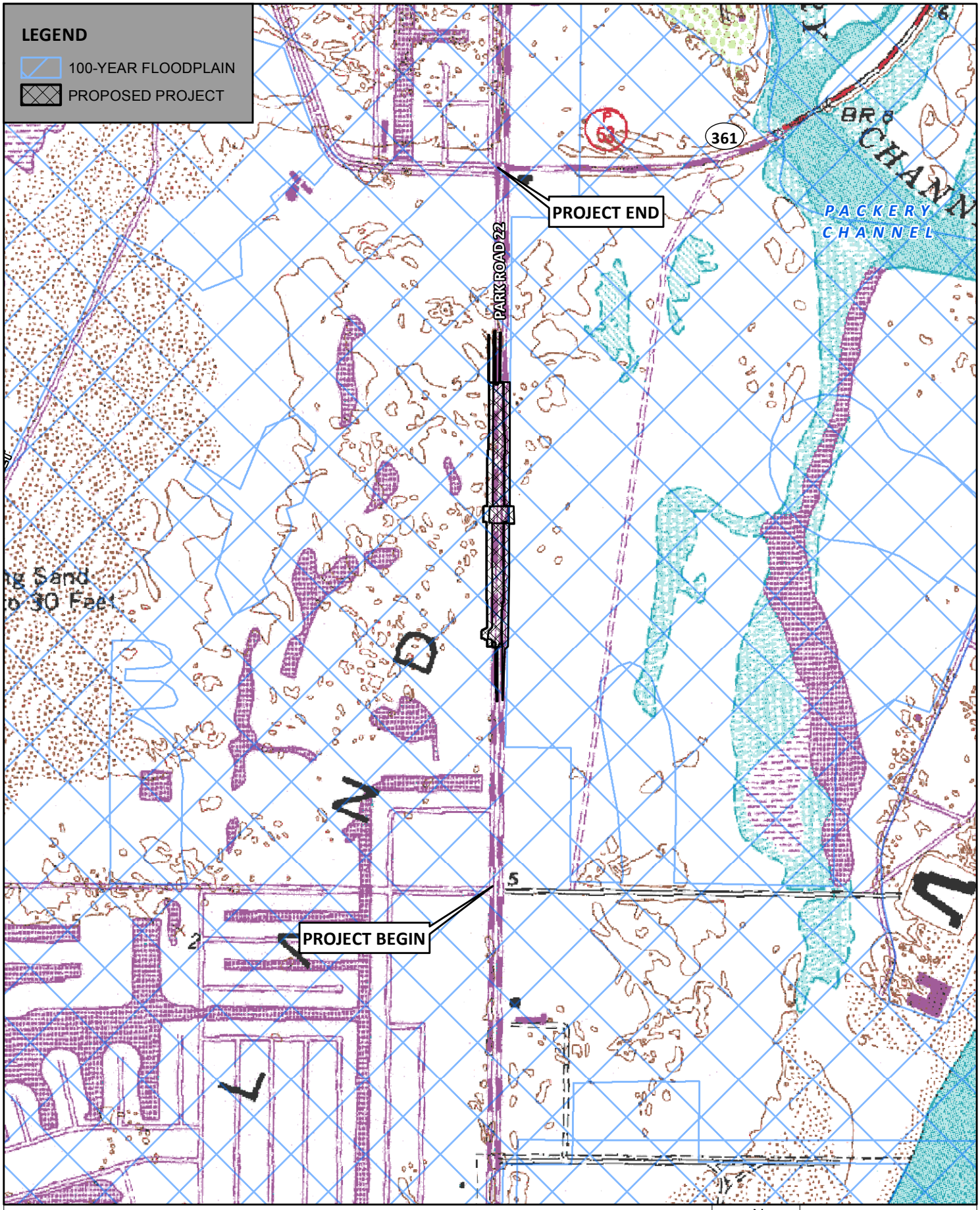
POTENTIAL JURISDICTIONAL WETLANDS

PR 22 BRIDGE
FROM WHITECAP BLVD TO COMMODORES DR (SH 361)
CORPUS CHRISTI, NUECES COUNTY, TEXAS
CSJ: 0617-02-064

N
W E
S

0 162.5 325 650
FEET

FIGURE 3-4



100-YEAR FLOODPLAIN

PR 22 BRIDGE
FROM WHITECAP BLVD TO COMMODORES DR (SH 361)
CORPUS CHRISTI, NUECES COUNTY, TEXAS
CSJ: 0617-02-064

N
W E
S

0 250 500 1,000
FEET

FIGURE 3-5

SOURCE: 1) USGS Topographic 7.5 Minute Quadrangle Crane Island SW Provided by Texas Natural Resources Information System (TNRIS) - 1975
2) Floodplain Data Provided by FEMA Panel No. 4854940505D,0508D,0520D

ESSENTIAL FISH HABITAT (EFH)

PR 22 BRIDGE
FROM WHITECAP BLVD TO COMMODORES DR (SH 361)
CORPUS CHRISTI, NUECES COUNTY, TEXAS
CSJ: 0617-02-064

N
W E
S

0 250 500 1,000
FEET

FIGURE 3-6

SOURCE: 1) Essential Fish Habitat: http://sero.nmfs.noaa.gov/maps_gis_data/habitat_conservation/efh_gom/index.html
2) Floodplain Data Provided by FEMA Panel No. 4854940505D,0508D,0520D

AREA OF INFLUENCE

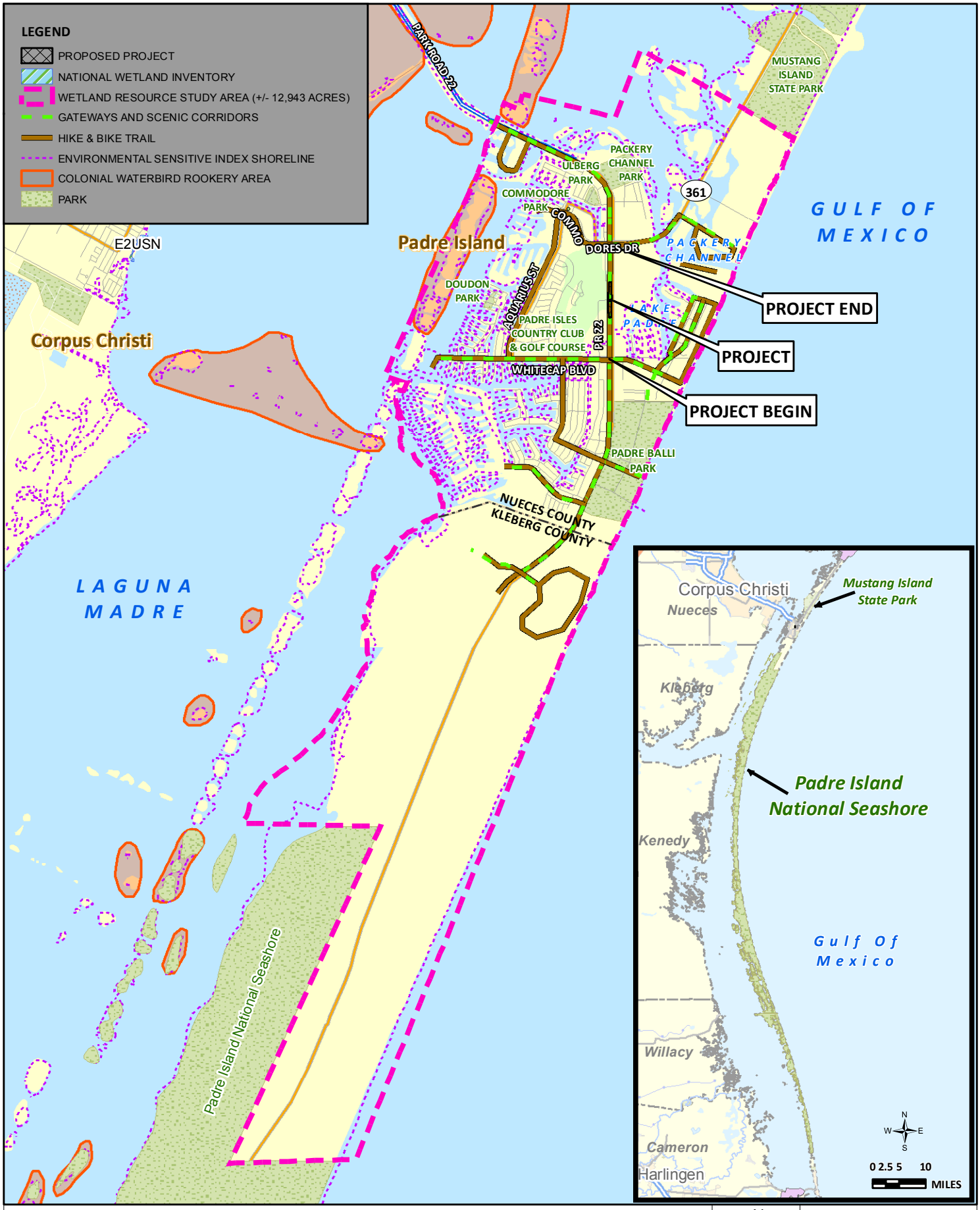
PR 22 BRIDGE
FROM WHITECAP BLVD TO COMMODORES DR (SH 361)
CORPUS CHRISTI, NUECES COUNTY, TEXAS
CSJ: 0617-02-064

N
W E
S

0 0.125 0.25 0.5
MILES

FIGURE 4-1

SOURCE: 1) Wetland Data Provided by The USFWS National Wetland Inventory (NWI) 7.5 Minute Quadrangle Crane Island SW
2) Hike & Bike and Scenis Corridor Data Provided by The Mustang-Padre Island Area Development Plan, Dated 04/20/2004



WETLAND RESOURCE STUDY AREA

PR 22 BRIDGE
FROM WHITECAP BLVD TO COMMODORES DR (SH 361)
CORPUS CHRISTI, NUECES COUNTY, TEXAS
CSJ: 0617-02-064

N
W E
S

0 0.3 0.6 1.2
MILES

FIGURE 4-2

1979 AERIAL PHOTOGRAPH

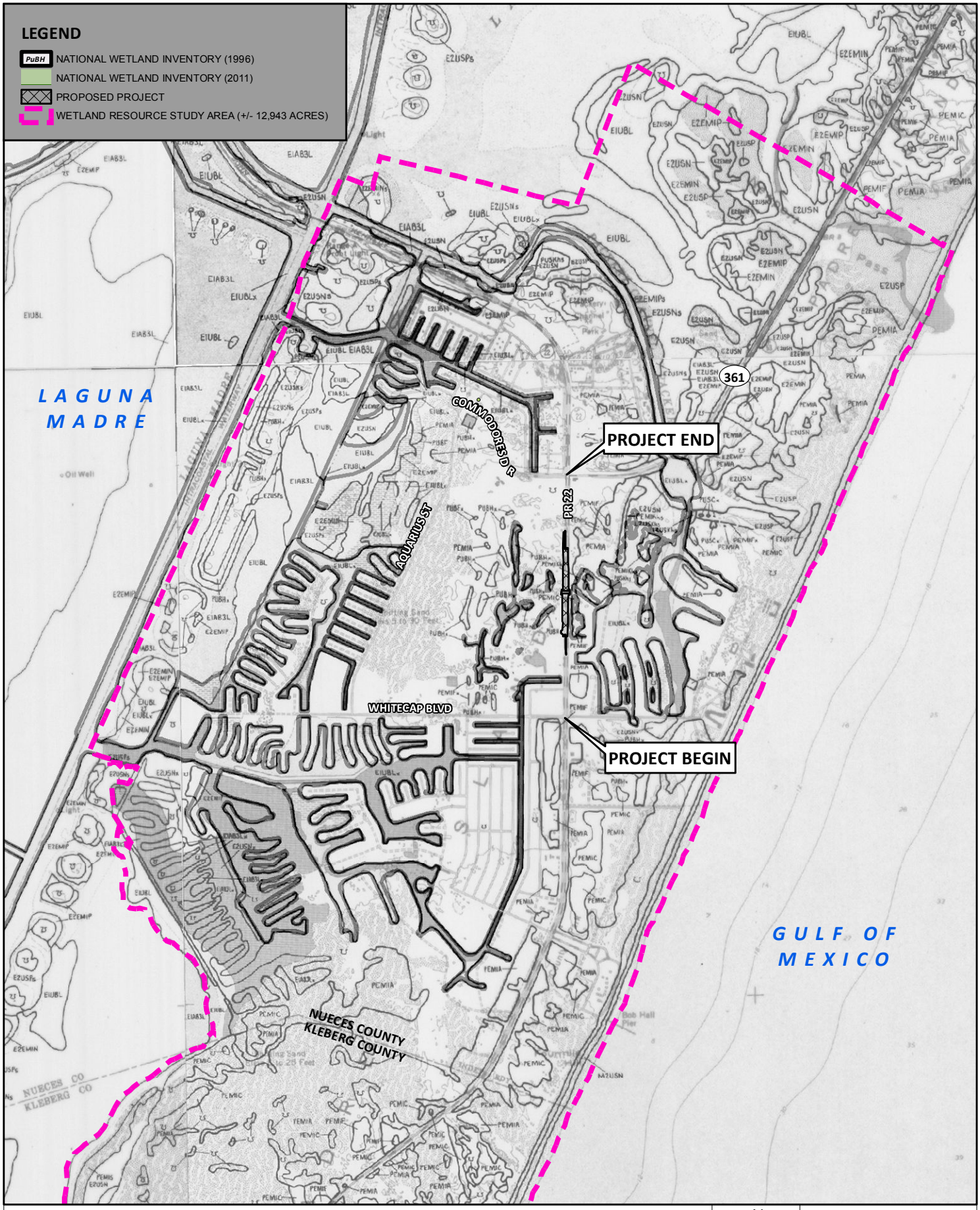
PR 22 BRIDGE
FROM WHITECAP BLVD TO COMMODORES DR (SH 361)
CORPUS CHRISTI, NUECES COUNTY, TEXAS
CSJ: 0617-02-064

N
W E
S

0 1,625 3,250 6,500
FEET

FIGURE 4-3

SOURCE: 1979 Aerial Photograph Provided by Google Earth Pro



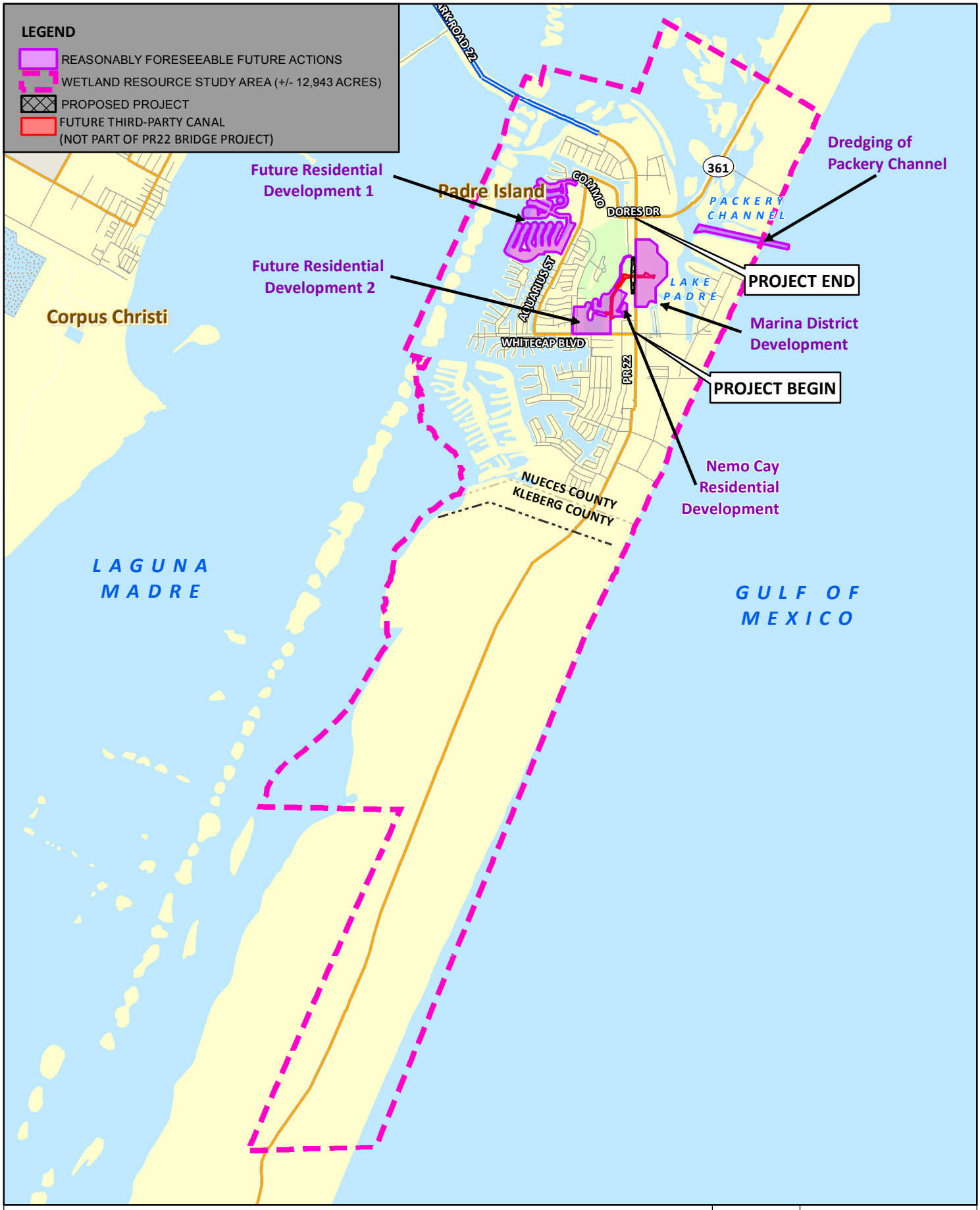
CHANGES IN WETLANDS OVER TIME

PR 22 BRIDGE
FROM WHITECAP BLVD TO COMMODORES DR (SH 361)
CORPUS CHRISTI, NUECES COUNTY, TEXAS
CSJ: 0617-02-064

N
W E
S

0 750 1,500 3,000
FEET

FIGURE 4-4



REASONABLE FORESEEABLE FUTURE ACTIONS

PR 22 BRIDGE
FROM WHITECAP BLVD TO COMMODORES DR (SH 361)
CORPUS CHRISTI, NUECES COUNTY, TEXAS
CSJ: 0617-02-064

N
W E
S

0 0.3 0.6
MILES

FIGURE 4-5

APPENDICES

APPENDIX A

PROJECT PHOTOGRAPHS

Photo 1. View of proposed location of center of proposed bridge and canal. West side of PR 22 viewing north.

Photo 2. West side of PR 22 viewing south.

Photo 3. West side of PR 22 viewing west (Golf Course).

Photo 4. East side of PR 22 viewing east.

Photo 5. View of north end of project (Commodores intersection)

Photo 6. View of south end of project (Whitecap Blvd. intersection)

APPENDIX B

MPO AND DCIS INFORMATION

Corpus Christi MPO Metropolitan Transportation Plan (2010 - 2035)

As of April 16, 2013

	TxDOT CSJ#	MPO Project #	PROJECT	From	To	DESCRIPTION	Cat	EST CONST. COST (millions) Y. O. E	Year of Construct	Remarks	Let Stauts
Cat 2 (Urban Corridor)											
1	**3364-01-010**	**S032C0294**	**FM 3386**	**2.5 Mile South of IH 37**	**Haven Drive**	**Construct New FM Road**	**2**	**$2.0**	**2012**	**Metro Corridor - TIP 2012**	May 2012
2	**0617-01-172**	**S087C0294A**	**SH 358 (S.P.I.D)**	**S. Staples Street**	**Ayers Street**	**Right-of-Way Purchase**	**2**	**$6.5**	**2012/13/14**	**Metro Corridor - TIP 2012/2013/2014 w/Cat11**	on-going
3	**0326-01-052**	**S089C0109**	**SH 286 (Crosstown)**	**SH 357 (Saratoga)**	**1 mile South of FM 43**	**Complete Freeway Section**	**2**	**$25.0**	**2013**	**Metro Corridor - TIP 2011**	
4	**0617-01-170**	**S087C0294B**	**SH 358 (S.P.I.D)**	**S. Staples Street**	**Ayers Street**	**Ramp reversal Phase II**	**2**	**$48.6**	**2016**	**Metro Corridor - TIP 2016**	
5	1069-01-028	S090C0399	SH 357 (Saratoga)	FM665	Calle Cuernavaca	Construct additional travel lanes and access improvement	2	$12.1	2017-2020	Metro Corridor - short range plan	
6	0617-01-177	S087C0294B	SH 358 (S.P.I.D)	Nile Drive	Staples Street	Ramp reversal Phase II	2	$30.1	2017-2020	Metro Corridor - short range plan	
7	0617-01-901	S087C0294	SH 358 (S.P.I.D)	Ayers Street	Rodd Field Road	Modify Frontage Road & Add Main Lane	2	$0.5	2021-2024	Metro Corridor - mid range plan	
8	0326-01-902	S089C2000	SH 286 (Crosstown)	SH 357 (Saratoga)	FM 2444 (Staples)	Construct Freeway & Interchange	2	$30.0	2021-2024	Metro Corridor - mid range plan	
9	0326-03-087	S089C1499	SH 286 (Crosstown)	IH 37	SH 358 (S.P.I.D)	Install Freeway Management System	2	$0.2	2021-2024	Metro Corridor - mid range plan	
10	0101-06-100	S105C0104	US 181	at North of Harbor Bridge		Install Freeway Management System	2	$0.2	2021-2024	Metro Corridor - mid range plan	
11	0074-06-194	S053C1299	IH 37	At South End of Harbor Bridge	San Patricio County Line	Install Freeway Management System	2	$1.3	2021-2024	Metro Corridor - mid range plan	
12	0074-05-086	S053C0204	IH 37	Nueces County Line	US 77 Interchange	Install Freeway Management System	2	$0.5	2021-2024	Metro Corridor - mid range plan	
13	0617-01-149	S087C0199	SH 358 (S.P.I.D)	PR 22	Interchange of IH 37	Install Freeway Management System	2	$0.6	2021-2024	Metro Corridor - mid range plan	
14	0326-01-051	S089C0108	SH 286 (Crosstown)	SH 358 (S.P.I.D)	SH 357 (Saratoga)	Construct of additional lanes	2	$22.5	2025-2028	Metro Corridor - long range plan	
16	N/A	S087C0799	SH 358 (S.P.I.D)	SH 358/SH 44 Interchange		Upgrade	2	$6.0	2025-2028	Metro Corridor - long range plan	
17	N/A	S088C0104	SH 44	.25 Mile East of Clarkwood	.62 Mile West of FM 1694	Complete Freeway	2	$32.0	2029-2032	Metro Corridor - long range plan	
18	2263-03-900	S091C0104	SH 361	PR 22	Beach Access Road	Construct Additional 2 Lanes	2	$40.0	2033-2035	Metro Corridor - long range plan	
19	0102-01-088	S088C0899	SH 44	.93 Mile East of FM 3386	.19 Mile East of FM 1694	Construct Main Lanes, Interchange, Frontage Road	2	$262.8	N/A	Metro Corridor - long range unfunded	
20	0101-04-097	S105C0204	US 181	SPUR 202	FM 3239 (Buddy Ganem)	Construct Additional 2 Lanes for 6 Lane Freeway	2	$125.0	N/A	Metro Corridor - long range unfunded	
Cat 7 (Metro Mobility)											
1	**3340-01-005**	**S012C0197**	**FM 3239 (Buddy Ganem)**	**FM 2986 (Wildcat Drive)**	**US 181**	**Construct additional travel lanes and access imp.**	**7**	**$4.3**	**2012**	**Metro Mobility - TIP 2012**	Aug 2012
2	**0916-28-060**	**S208C0611**	**Memorial Parkway**	**Memorial Pkwy @Oak Brook**	**FM 3239 (Buddy Ganem)**	**Reconstruction and Extension**	**7**	**$0.7**	**2012**	**Metro Mobility - TIP 2012 (Amended in Aug 2011)**	Aug 2012
3	**1557-01-037**	**S141C0200**	**FM 43 - (Weber)**	**SH 286**	**Yorktown Boulevard**	**Construct additional travel lanes and access imp.**	**7**	**$9.7**	**2013**	**Metro Mobility - TIP 2013**	
4	**0916-35-173**	**S154F0112**	**CBD Feasibility Study**	**Various Locations in Corpus Christi**		**Feasibility Study for pedestrian-oriented development**	**7**	**$0.2**	**2013**	**Metro Mobility - TIP 2013 (Amended in Dec 2012)**	
5	**0916-35-168**	**S119C0194**	**Williams Drive**	**Airline Road**	**S. Staples Street**	**Construct additional travel lanes and access imp.**	**7**	**$5.0**	**2014**	**Metro Mobility - TIP 2014**	
6	**0916-00-066**	**S132E0299**	**Regional Parkway Phase II**	**Various Location**		**Environmental Review for first segment**	**7**	**$2.0**	**2015**	**Metro Mobility - TIP 2015**	
7	**0326-01-056**	**S089E0212**	**SH 286 (Crosstown)**	**FM 43 (Weber Rd.)**	**FM 2444 (Staples)**	**Environmental Review/Study**	**7**	**$0.5**	**2015**	**Metro Mobility - TIP 2015**	
8	**0916-00-067**	**S154OM0112**	**O & M Improvements**	**Various Location**		**Operation & Management Improvements**	**7**	**$2.0**	**2015**	**Metro Mobility - TIP 2015**	
9	**0916-00-068**	**S154C0112**	**Pedestrian & Bike**	**Various Location**		**Construct Bike and Pedestrian Facilities**	**7**	**$1.7**	**2015**	**Metro Mobility - TIP 2015**	
10	**0916-35-170**	**S049C0597**	**Holly Road, Phase II**	**SH 286 (Crosstown)**	**Greenwood Drive**	**Construct additional travel lanes and access imp.**	**7**	**$6.3**	**2016**	**Metro Mobility - TIP 2016**	
11	N/A	S202C0106	Rodd Field Road	Saratoga Boulevard	Yorktown Boulevard	Construct additional travel lanes and access imp.	7	$7.5	2017-2020	Metro Mobility - short range plan	Bond 2012
12	N/A	S141C0105	FM 43 (Weber)	SH 286 (Crosstown)	FM 763	Construct additional travel lanes and access imp.	7	$7.6	2017-2020	Metro Mobility - short range plan	
13	N/A	S0199R109	Harbor Bridge	North Ship Channel	South Ship Channel	Purchase Right of Way	7	$6.0	2017-2020	Metro Mobility - short range plan	
14	N/A	S028C0294	FM 2444 (Staples)	CR 41	SH 286 (Crosstown)	Construct additional travel lanes and access imp.	7	$5.0	2017-2020	Metro Mobility - short range plan	
15	N/A	S121C0394	Yorktown Boulevard	Cimarron Boulevard	Rodd Field Road	Construct additional travel lanes and access imp.	7	$7.5	2021-2024	Metro Mobility - mid range plan	Bond 2012
16	2142-01-022	S036C0299	FM 2292 (Rand Morgan)	Leopard Street	IH-37	Construct additional travel lanes and access imp.	7	$3.8	2021-2024	Metro Mobility - mid range plan	
17	N/A	S064C0294	McArdle Road	Nile Drive	Ennis Joslin Road (Spur 3)	Construct additional travel lanes and access imp.	7	$3.6	2021-2024	Metro Mobility - mid range plan	Bond 2012
18	0916-28-904	S006C0297	Akins Drive	Lang Road	FM 2986 (Wildcat Drive)	Construct additional travel lanes and access imp.	7	$2.0	2021-2024	Metro Mobility - mid range plan	
19	3596-01-002	S085C0104	Spur 3 (Ennis Joslin)	SH 358 (S.P.I.D)	Rodd Field Road	Construct travel lanes and access improvements	7	$9.2	2021-2024	Metro Mobility - mid range plan	
20	0916-35-928	S156C0103	CR 40	FM 1694	Robstown City Limits	Construct additional travel lanes and access imp.	7	$3.8	2025-2028	Metro Mobility - long range plan	
21	N/A	S039C0106	Flour Bluff Drive	Don Patricio	Yorktown Boulevard	Construct additional travel lanes and access imp.	7	$14.3	2025-2028	Metro Mobility - long range plan	
22	N/A	S086C0197	Stark Road	Moore Avenue	Lang Road	Construct additional travel lanes and access imp.	7	$2.1	2025-2028	Metro Mobility - long range plan	
23	N/A	S118C0104	Wooldridge Road	Quebec Drive	Oso Parkway	Construct additional travel lanes and access imp.	7	$9.0	2029-2032	Metro Mobility - long range plan	
24	N/A	S141C0206	FM 43 (Weber)	FM 763	FM 665	Construct additional travel lanes and access imp.	7	$15.5	2029-2032	Metro Mobility - long range plan	
25	N/A	S002C0196	SH 286	0.25 miles S. FM 43	0.25 miles S FM 2444 (Staples)	Construct additional travel lanes and access imp.	7	$15.5	2033-2035	Metro Mobility - long range plan	
26	N/A	S204C0111	Chatwick Drive	0.10 miles E of Memorial	Cedar Drive	Construct additional travel lanes and access imp.	7	$10.0	2033-2035	Metro Mobility - long range plan	
27	N/A	S203C0196	FM 665 @ 2444	FM 43 (Terminus)	US 77	Construct additional travel lanes and access imp.	7	$49.4	N/A	Metro Mobility - long range unfunded	
Cat 3 (Proposition 12) + Cat 7											
1	**2343-01-036**	**S028C0194**	**FM 2444 (Staples)**	**SH 286 (Crosstown)**	**Oso Parkway Intersection**	**Construct additional travel lanes and access imp.**	**Prop12 Cat 7**	**$11.2 $13.0**	**2013**	**State Funding Cat 7 supplemental funding (Amended in Dec 2012/Feb 2013)**	
Cat 3 (Local Contribution)											
1	**0617-02-064**	**S128C0112**	**Park Road 22 Bridge**	**White Cap Rd.**		**Construct a Bridge**	**3**	**$9.0**	**2013**	**100% Local Funded Project**	
Cat 12 (State-wide Strategic Priority)											
1	**(5800-00-950)**	**S088C0204**	**SH 44**	**.17 Mile West of FM 1694**	**.17 Mile East of FM 1694**	**Construct an overpass**	**12**	**$11.5**	**2013**	**State-wide Strategic Priority (Safety Improvement)**	
Cat 3 (Texas Mobility Funds)											
1	**0916-35-172**	**S123C0196**	**Intermodal Access**	**Along with Joe Fulton Corridor**		**Construct Railroad Track**	**3**	**$28.0**	**2014**	**Texas Mobility Funds & Local Contribution**	
Cat 6 (Structures Replacement & Rehabilitation)											
1	**0101-06-095B**	**S0199C109B**	**Harbor Bridge Phase I**	**North Ship Channel**	**South Ship Channel**	**Construct new Harbor Bridge over the ship channel**	**6**	**$291.0**	**2017**	**Bridges**	
Cat TBD											
1	N/A	S132C0299	Regional Parkway	PR 22	IH 37	Construct additional travel lanes and access imp.	TBD	N/A	N/A	Long-range unfunded	
			** Regional Parkway cost	$420.000 interchanges	$300.000 bridge and elevated causeway		$196.000 for 53 miles of suburban freeway @ $3.7 million				
TIGER											
1	N/A	**POCCA-TIGER**	**Nueces Rail Yard Expansion**	**Along the Nueces River**		**Construct new rail siding**	**TIGER**	**$10.00**	**2013**	**TIGER IV (Amended in Dec 2011)**	

Color Code

- FY2012 TIP
- FY2013-2016 TIP
- 100% Locallly Funded Project
- Long range unfunded

FY2013-2016 Transportation Improvement Program - Highway Project Summary

As of June 14, 2012

Category	CSJ#	Project	From	To	Project Sponsor	YOE Cost	FY
Cat 2	0326-01-052	SH 286 (Crosstown) Highway Extension	SH 357 (Saratoga Blvd.)	FM 43 (Weber Rd.)	TxDOT	$ 26,000,000.00	2013
Cat 2	0617-01-170	SH 358 (S.P.I.D) Right of Way Purchase	Ayers St.	S. Staples St.	TxDOT	$ 2,812,160.00	2013
Cat 7	1557-01-037	FM 43 (Weber Rd.)	SH 286 (Crosstown)	Yorktown Blvd.	TxDOT	$ 8,528,000.00	2013
Prop 12	2343-01-036	FM 2444 (Staples)	SH 286 (Crosstown)	Oso Creek	TxDOT	$ 11,648,000.00	2013
Local	0617-02-064	Park Road 22 Bridge	White Cap Blvd.		City of Corpus Christi	$ 9,193,600.00	2013
					FY2013 Total	**$ 58,181,760.00**	
Cat 12	(5800-00-950)	*SH 44/FM1694 Overpass	at SH 44/FM 1694 Intersection		TxDOT	$ 14,824,000.00	2013

*Information purpose only. SH 44/FM 1694 Overpass project is grouped CSJ#5800-00-950 as a state-wide safety improvement project, not CCMPO's FY2013 TIP project.

Cat 2	0617-01-170	SH 358 (S.P.I.D) Right of Way	Ayers St.	S. Staples St.	TxDOT	$ 2,924,646.00	2014
Cat 7	0916-35-905	Williams Drive	Airline Rd.	S. Staples St.	City of Corpus Christi	$ 7,392,628.00	2014
					FY2014 Total	**$ 10,317,274.00**	
Cat 7	0916-00-066	Regional Parkway Environmental Study	Various Locations		TxDOT	$ 2,000,000.00	2015
Cat 7	0326-01-056	SH 286 (Crosstown) Environmental Study	FM 43 (Weber Rd.)	South of FM 2444	TxDOT	$ 500,000.00	2015
Cat 7	0916-00-067	RoadwayOperation/ Maintenance	Various Locations		TxDOT	$ 2,000,000.00	2015
Cat 7	0916-00-068	Pedestrian & Bike Facilities	Various Locations		TxDOT	$ 1,800,000.00	2015
					FY2015 Total	**$ 6,300,000.00**	
Cat 7	0916-35-170	Holly Road	SH 286 (Crosstown)	Greenwood Dr.	City of Corpus Christi	$ 7,370,105.00	2016
Cat 2	0617-01-170	SH 358 (S.P. I. D) Ramp Reversal Phase II	S. Staples St.	Ayers St.	TxDOT	$ 42,300,000.00	2016
					FY 2016 Total	**$ 49,670,105.00**	
					FY2013-2016 Grand Total	**$ 124,469,139.00**	

Category 2 Projects:	Metro Corridor Projects
Category 7 Projects:	Metro Mobility & Rehabiliation Projects
Category 12 Projects:	Strategic Priority Projects
Proposition 12 Project:	General Obligation Bond (Proposition 12) Projects
Local Project:	100% Locally funded projects

```
UPDATE MODE     06/07/12      PROJECT ID (P01)    14:12:34      ENGLISH  DCIS.02A
CTL-SEC-JOB 0617 - 02 - 064  HWY NO PR 22__  DIST 16 CNTY NUECES          178
BEG MILE POINT  _7.435  END MILE POINT  _7.685     PROJECT LENGTH MI  __0.100
BEG REF MARKER NUM  _626  SUFFIX     _ DISPLACEMENT     __0.185  DFO  ___6.817
END REF MARKER NUM  _626  SUFFIX     _ DISPLACEMENT     __0.435  DFO  ___7.067
LIMITS FROM    N. OF WHITE CAP RD._____________________      TRM UPDATE FLAG S
       TO      WHITE CAP_______________________________        PROJ CLASS MSC
TYPE OF WORK  CONSTRUCT BRIDGE__________________________    SPEC BOOK YEAR  04
LAYMANS DESC  CONSTRUCT BRIDGE_____________________________________________
              ___________________________________________________________

PDP CODE  LOCAL          ABATEMENT AUTH  _0 ___0          LET SCH FY  2014  __
RESP. SECTION    ___      FUNCTIONAL CLASS  2   FED LETTER OF AUTH   __  _0 _0
INFLATION % 4.00   DISTRICT OVER % 0.00_     STATE LETTER OF AUTH       _0 _0
LATEST EST OF CST COST 8500000_______                UTP AUTHORITY   C   CONS
DATE OF LATEST EST  08 31 11                  PRES DIST EST LET DATE   12 13
AUTHORIZED AMOUNT 8500000      TRUNK SYS      N      APPROVED LET DATE   _0 _0
CONTRACT CSJ     061702064     NHS            Y        ACTUAL LET DATE   _0 _0
OVERSIGHT  S                   HURR EVAC RTE N PROJ NUM  NH     (   )_________
PROJ ANCESTORS   061702901 _________ _________ _________ _________ ROW CSJ:
PROJ DESCENDENTS _________ _________ _________ _________ _________  _________
REMARKS _____________________________________________________________________
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
LEGIS UPDT  FIN   EVAL  EST   SUM   UTP   STIP  METR  COR   TPC   PE    MENU
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 UPDATE MODE            P02 - Construction Cost                          DCIS.03B
 CTL-SEC-JOB  0617-02-064        TOLL N (Y/N/P)   DIST EST AMT $ 8500000
 LOW BID AMT $ 0.00_____________ SCREEN LOCKED: N DATE OF LAST EST 08 31 11
 TOLL CREDITS 0__ %     TAPERED MATCH _ (Y)       INFLATED EST $ 9043397
 CDA  N  (Y/N/P)   CDA NUMBER ___   PTF _ (Y/N/P)   RMA _ (Y/N/P)  TIER _
 PRESERVATION PERCENT 0__ %  MOBILITY PERCENT 0__ %
LINE   WORK     PID    AUTHORIZED     APPL APPN CATE- FIXED FUNCT   DATE  MIN ORD
NUMBER PROGRAM         AMOUNT         PCT  CODE GORY  FLAG  FM  TO        NUMBER
  1    LOCAL_  ___  $ 8500000_____  100.0 1110 3___   _   102 190 _4 12  113074
  2    _______ ___  $ 0___________  _____ ____ ____   _   0__ 0__ _0 _0  _______
  3    _______ ___  $ 0___________  _____ ____ ____   _   0__ 0__ _0 _0  _______
  4    _______ ___  $ 0___________  _____ ____ ____   _   0__ 0__ _0 _0  _______
  5    _______ ___  $ 0___________  _____ ____ ____   _   0__ 0__ _0 _0  _______
  6    _______ ___  $ 0___________  _____ ____ ____   _   0__ 0__ _0 _0  _______
  7    _______ ___  $ 0___________  _____ ____ ____   _   0__ 0__ _0 _0  _______
  8    _______ ___  $ 0___________  _____ ____ ____   _   0__ 0__ _0 _0  _______
  9    _______ ___  $ 0___________  _____ ____ ____   _   0__ 0__ _0 _0  _______
 10    _______ ___  $ 0___________  _____ ____ ____   _   0__ 0__ _0 _0  _______
             TOTAL $      8500000
        ' USE PF8 KEY TO OBTAIN PROJECT FINANCE - PERCENT SCREEN '

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      ID    FIN   EVAL  EST   SUM   UTP   STIP  PCT   COR   TPC   PE    MENU
```

APPENDIX C

CLEARANCES/COORDINATION DOCUMENTATION

U.S. Department of Homeland Security

United States Coast Guard

Commander
Eighth Coast Guard District
Hale Boggs Federal Building

500 Poydras Street, Room 1313
New Orleans, LA 70130-3310
Staff Symbol: (dpb)
Phone: 504) 671-2128
Fax: (504) 671-2133
D8DPBALL@uscg.mil

16590
February 17, 2012

RABA Kistner Environmental
Attn: Mr. Steven E. Jones, CHCM
P.O. Box 690287
San Antonio, TX 78249

Dear Mr. Jones:

We have reviewed your letter dated January 30, 2012 regarding the construction of a bridge on Park Road 22, by way of Lake Padre and Packery Channel at a proposed new canal location, on South Padre Island, Texas.

Bridges constructed over waterways, valleys, low grounds, etc., which were not navigable waters at the time of construction are considered legal structures if the waterway subsequently is developed or is determined to be navigable waters of the United States. No permit is required. The bridge, however, becomes subject to the applicable bridge acts and Coast Guard jurisdiction once a waterway has been established. A permit will be required for any subsequent reconstruction, alteration, etc.

Please note that, while the Coast Guard requires no specific bridge permit for this construction, you are not relieved of your responsibility to comply with the National Environmental Policy Act (NEPA) or to obtain permits from any other federal, state or local agency having jurisdiction in this matter.

However, we do suggest that plans for the proposed bridge provide adequate clearances to accommodate occasional recreational boating and flooding, which may exist in the area. You should also contact the Federal Emergency Management Agency, as well as your local floodplain administrator, to obtain any permit that may require, and to formulate any mitigation measures that may be necessary.

Please notify this office at least 3 weeks prior to commencing any operations at this bridge site so that timely notice may be given to marine interests. After this bridge has been constructed, the maintenance will remain the responsibility of the owner. If this bridge falls into disrepair or is no longer used for its intended purposes, it will be removed by and at the expense of the owner in its entirety. Furthermore, the bridge should be maintained free and clear of all debris at all times.

Once the waterways have been dredged and the bridge has completed construction, you must submit a navigational lighting plan pursuant to Title 33 CFR Part 118.40 for each proposed bridge along with pictures. We appreciate the opportunity to comment on this project. If you have any questions, please contact this office.

Sincerely,

DAVID M. FRANK
Chief, Bridge Administration Branch
U.S. Coast Guard
By direction

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RABA-KISTNER
SAN ANTONIO

Standards of Uniformity for Historic Resources: Certification for PCE Projects

	SECTION 3: ENV HIST DETERMINATIONS ADDITIONAL ACTIONS REQUIRED BY THE DISTRICT. SOU TO BE RESUBMITTED WITH REQUESTED INFORMATION [DO NOT WRITE on this page; for ENV HIST STAFF ONLY]	Yes
1	Project information is **insufficient** to determine level of Historic Resource Review and Consultation (see attached comments indicating why information is insufficient).	☐
2	Project information is sufficient to recommend that a **Reconnaissance Survey** be performed.** ENV HIST staff will consult with the District to specify survey needs and to develop a scope of work and a timeline for receiving contract deliverables.	☐
3	Project information is sufficient to recommend that an **Intensive Survey** be performed.** ENV HIST staff will consult with the District to specify survey needs and develop a scope of work and a timeline for receiving contract deliverables.	☐
	ADDITIONAL COMMENTS:	

** All work must meet appropriate Standards of Uniformity. Please consult with ENV HIST if District requires assistance through an ENV Scientific Services Contract.

SECTION 4: ENV HIST CERTIFICATION [TO BE FILLED OUT BY ENV HIST STAFF. TO BE INCLUDED WITH DISTRICT'S SUBMISSION TO THE REC]
ENV HIST staff determined that the project information is sufficient to record Section 106 actions on HIST screen in ETS. The appropriate NEPA language was submitted to the District and recorded in ETS.
ENV HIST Reviewer Name: Shannon Mace Date: 4/4/12 CSJ 0617-02-064

Project No. ASF11-147-00
June 6, 2013

RECEIVED
JUN 06 2013
TEXAS HISTORICAL COMMISSION

RABA KISTNER ENVIRONMENTAL

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Environmental, Inc.
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San Antonio, TX 78249

P.O. Box 690287
San Antonio, TX 78269-0287

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F 210 :: 699 :: 6426
TBPE Firm F-3257

Mr. Mark Denton
Texas Historical Commission
Division of Archeology
P.O. Box 12276
Austin, Texas 78711-2276

RE: Project Review Request
Proposed Bridge and Canal Construction on Park Road (PR) 22 from Whitecap Boulevard to SH 361 (Commodores Dr.)
Corpus Christi, Nueces County, Texas
CSJ: 0617-02-064

Dear Mr. Denton:

Raba Kistner Environmental, Inc. (**RKEI**), under contract to Urban Engineering, Inc. (CLIENT), has completed a cultural resources desktop study of the above-referenced project. The project's sponsor, the City of Corpus Christi, proposes to construct two bridges (a northbound and a southbound bridge) and a canal on a Texas Department of Transportation (TxDOT)-owned roadway, Park Road (PR) 22, located on Padre Island in Corpus Christi, Nueces County, Texas.

Requirements for the contents of a background study derive from the First Amended Programmatic Agreement among the FHWA, TxDOT, the Texas State Historic Preservation Officer (SHPO), and the Advisory Council on Historic Preservation Regarding the Implementation of Transportation Undertakings (PA-TU), Stipulation VIII and 43 TAC 2.24 (j) (3).

Under the Antiquities Code of Texas, cities and other subdivisions of the state (e.g., counties, river authorities, school districts, and municipalities) are required to review for potential impacts to cultural resources prior to construction activities.

PR 22 is currently a four lane divided roadway with two 12-foot travel lanes in each direction with inside and outside shoulders and a depressed median within a 200-foot right-of-way (ROW). The proposed canal area within the PR 22 ROW is approximately 99 feet wide and the total acreage for the canal is approximately 0.28 acres.

The total project length is approximately 5,647 feet (1.07 miles) and the total project acreage of the existing ROW is 26.1 acres. The Area of Potential Effects (APE) for the archeological background study is defined as the footprint of the proposed roadway project to the maximum depth of impact to 14 feet. No new right-of-way or easements are proposed. Existing utilities are located within the ROW and several of these utilities will require adjustment as a result of the project. All utility adjustments will be contained within the existing ROW. The canal area is comprised of approximately 0.28 acres and is located within the project's APE.

Background research included accessing the Texas Historical Commission's (THC) *Archeological Sites Atlas* (2013) and consulting survey reports, site files, and maps on file at the Texas Archeological Research Laboratory (TARL) in Austin, TX. These resources were examined in order to identify any previously recorded sites and past investigations within the vicinity of the project area. Aerial photographs, as well as, geologic and United States Department of Agriculture (USDA) soil survey maps were also examined to gain a better understanding of the project area.

Results

The project is now located in a mixed-use setting consisting of residential, commercial, and recreational uses. The study of aerial photos indicates that large sections of the APE have been previously disturbed by utility installations, roadway construction, adjacent development, and soil survey maps indicate some naturally-occurring soil erosion and sedimentation.

Previously Recorded Archeological Sites and Surveys

The results of the background study determined that no previously recorded archeological sites are located within the APE. The portion of the APE along PR 22 roadway was previously surveyed for cultural resources in 1998, and no sites were recorded within the APE as a result of the investigation. The canal area has not been previously surveyed for cultural resources. No additional information was available on the Atlas or at TARL. No sites currently listed or eligible for listing in the NRHP or sites designated as SALs have been recorded within the APE (THC 2012).

Conclusions and Recommendations

Based on the results of the background study, there are no previously recorded archeological sites eligible for listing or potentially eligible for listing in the NRHP or designated SALs within or adjacent to the APE. No cemeteries are located in or within 75 feet of the archeological APE. The portion of the APE along PR 22 was previously surveyed for cultural resources in 1998, and no sites were recorded within this section of the APE as a result of the investigation (THC 2013).

The study of aerial photos revealed extensive disturbance to the APE along PR 22; there exists a low probability for intact, buried deposits along the PR 22 ROW. The proposed canal area within the PR 22 ROW has also been disturbed by previous roadway construction of PR 22. The potential to encounter significant cultural resources is low and no additional archeological work is recommended within the canal area portion of the APE. Based on the extent of existing disturbances within the APE, the APE possesses little potential for containing archeological deposits. No additional archeological work is recommended within the APE.

Please review the proposed project at your earliest convenience. Thank you for your assistance.

Very truly yours,

RABA KISTNER ENVIRONMENTAL, INC.

Pollyanna Clark

Pollyanna Clark, MA, RPA
Archaeologist

PAC/MTK/bg

Attachments

ANTIQUITIES CODE OF TEXAS REVIEW
NO SURVEY REQUIRED
PROJECT MAY PROCEED
by Mark Wolfe
for Mark Wolfe
Executive Director, THC
Date 7-1-13
Track#

Copies Submitted: Above (1 Electronic PDF Copy)
Chip Urban, PE, Urban Engineering (1 Electronic PDF Copy)
Natasha Fudge, PE, City of Corpus Christi (1 Electronic PDF Copy)

APPENDIX D

IMPACT ASSESSMENT FOR RARE, THREATENED AND ENDANGERED SPECIES

APPENDIX D
Impact Assessment for Rare, Threatened and Endangered Species of Potential Occurrence within Nueces County, Texas

Species	Species Habitat Description	Suitable Habitat in project area?	EO ID # from TXNDD Recorded Occurrences within 1.5 miles of project area	Effect on Species	Justification
Amphibians					
Black Spotted Newt *(Notophthalmus meridionalis)* ST; SGCN	This species can be found in wet or sometimes-wet areas, such as arroyos, canals, ditches, or even shallow depressions; aestivates in the ground during dry periods; Gulf Coast Plain south of the San Antonio River.	No	No	No Impact	No fresh water wet areas occur within the proposed project limits. Ditches along the ROW are heavily influenced with tidal surges during storm events.
Sheep Frog *(Hypopachus variolosus)* ST; SGCN	Predominantly grassland and savanna; moist sites in arid areas.	No	No	No Impact	No fresh water wet areas occur within the proposed project limits. Ditches along the ROW are heavily influenced with tidal surges during storm events.
Birds					
Eskimo Curlew (*Numenius borealis*) FE; SE	Historic; nonbreeding: grasslands, pastures, plowed fields, and less frequently, marshes and mudflats.	No	No	No Effect	The proposed project consists of a maintained roadway right-of-way.
Northern Aplomado Falcon *(Falco femoralis septentrionalis)* FE; SE; SGCN	Open country, especially savanna and open woodland, and sometimes in very barren areas; grassy plains and valleys with scattered mesquite, yucca, and cactus; nests in old stick nests of other bird species.	No	No	No Effect	The proposed project consists of a maintained roadway right-of-way. No suitable habitat as described for the Northern Aplomado Falcon is present in the project area.
Peregrine Falcon *(Falco peregrinus*) ST	Both subspecies migrate across the state from more northern breeding areas in U.S. and Canada to winter along coast and farther south; subspecies (F. p. anatum) is also a resident breeder in west Texas; the two subspecies' listing statuses differ, F.p. tundrius is no longer listed in Texas; but because the subspecies are not easily distinguishable at a distance, reference is generally made only to the species level; see subspecies for habitat.	No	Yes; EO ID# 2406;Last observed 1991.	No Impact	The Peregrine Falcon could migrate over the area, but would not likely occur in the areas where project activities are proposed.

Species	Species Habitat Description	Suitable Habitat in project area?	EO ID # from TXNDD Recorded Occurrences within 1.5 miles of project area	Effect on Species	Justification
Piping Plover (*Charadrius melodus*) FT; ST; SGCN	Wintering migrant along the Texas Gulf Coast; beaches and bayside mud or salt flats.	No	Yes; EO ID#s 1482, 3369, and 7324; Last observed 1991.	No Effect	The project consists of a maintained roadway right-of-way. No undisturbed beaches or bayside mud or salt flats are located within the existing ROW of the project. Several occurrences of Piping Plover were noted on the NDD; however, these occurrences were located to the west of the proposed project on the bayside flats.
Red Knot (*Calidris canutus rufa*) FT; SGCN	Breeds in drier tundra areas, such as sparsely vegetated hillsides. Outside of breeding season, it is found primarily in intertidal, marine habitats, especially near coastal inlets, estuaries, and bays. (Cornell 2015).	No	No	No Effect	No suitable habitat exists since the proposed project consists of a maintained roadway right-of-way.
Reddish Egret *(Egretta rufescens)* ST; SGCN	Resident of the Texas Gulf Coast; brackish marshes and shallow salt ponds and tidal flats; nests on ground or in trees or bushes, on dry coastal inlands in brushy thickets of yucca and prickly pear.	Yes, in the area adjacent to the PR 22 ROW	No	May impact, not likely to adversely impact the species	The project consists of a maintained roadway right-of-way. No undisturbed beaches or bayside mud or salt flats are located within the existing ROW of the project. However, their habitat could occur adjacent to the proposed project.
Sooty Tern (*Sterna fuscata*) ST; SGCN	It breeds on flat, open, sparsely or heavily vegetated, oceanic or barrier islands of sand, coral or rock in productive tropical and subtropical offshore waters rich in plankton, fish and squid. It is absent from cold current areas and generally avoids islands with terrestrial predators (del Hoyo et al. 1996). Breeds from April to July.	Yes, in the area adjacent to the PR 22 ROW	No	May impact, not likely to adversely impact the species	The Sooty Tern is a pelagic species, meaning that it lives or occurs in/near the open sea. The proposed project is inland and is not likely to impact affect this species. The species could occur adjacent to the proposed project to the east (on Gulf side).
Sprague's Pipit *(Anthus spragueii)* FC; SGCN	Only in Texas during migration and winter, mid-September to early April; short to medium distance, diurnal migrant; strongly tied to native upland prairie, can be locally common in coastal grasslands, uncommon to rare further west; sensitive to patch size and avoids edges.	No	No	No Effect	No suitable habitat is present that would support this species.

Species	Species Habitat Description	Suitable Habitat in project area?	EO ID # from TXNDD Recorded Occurrences within 1.5 miles of project area	Effect on Species	Justification
Texas Botteri's Sparrow *(Aimophila botterii texana)* ST; SGCN	Grassland and short grass plains with scattered bushes or shrubs, sagebrush, mesquite, or yucca; nests on ground of low clump of grasses.	No	No	No Impact	No suitable habitat exists since the proposed project consists of a maintained roadway right-of-way.
White-faced Ibis *(Plegadis chihi)* ST; SGCN	Prefers fresh water marshes, sloughs, and irrigated rice fields, but will attend brackish and saltwater habitats; nests in marshes, in low trees, on the ground in bulrushes or reeds, or on floating mats.	Yes, in the area adjacent to the PR 22 ROW	No	May impact, not likely to adversely impact the species	The project consists of a maintained roadway right-of-way. The habitat of the White-faced Ibis would not likely occur in the areas where project activities are proposed. However, potential habitat may occur on adjacent properties.
White-tailed Hawk *(Buteo albicaudatus)* ST; SGCN	Near coast, it is found on prairies, cord grass flats, and scrub-live oak; further inland on prairies, mesquite and oak savannas. And mixed savanna-chaparral; breeding March to May.	No	No	No Impact	No suitable habitat exists since the proposed project consists of a maintained roadway right-of-way.
Whooping Crane (*Grus Americana*) FE; SE; SGCN	Potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun, and Refugio counties.	No	No	No Effect	No suitable habitat for Whooping Crane exists since the project consists of a maintained roadway right-of-way.
Wood Stork *(Mycteria americana)* ST; SGCN	Forages in prairie ponds, flooded pastures or fields, ditches, and other shallow standing water, including salt-water; usually roosts communally in tall snags, sometimes in association with other wading birds (i.e. active heronries); breeds in Mexico and birds move into Gulf States in search of mud flats and other wetlands, even those associated with forested areas; formerly nested in Texas, but no breeding records since 1960.	Yes, in the area adjacent to the PR 22 ROW	No	May impact, not likely to adversely impact the species	No suitable habitat exists within the project area that consists of a maintained roadway right-of-way and roadside ditches. However, potential habitat may occur on adjacent properties.
Fish					
Opossum pipefish (*Microphis brachyurus*) ST; SGCN	Brooding adults found in fresh or low salinity waters and young move or are carried into more saline waters after birth; southern coastal areas.	No	No	No Impact	No suitable habitat exists since the proposed project consists of a maintained roadway right-of-way.

Species	Species Habitat Description	Suitable Habitat in project area?	EO ID # from TXNDD Recorded Occurrences within 1.5 miles of project area	Effect on Species	Justification
Smalltooth sawfish (*Pristis pectinata*) FE; SE; SGCN	Different life history stages have different patterns of habitat use; young found very close to shore in muddy and sandy bottoms, seldom descending to depths greater than 32 ft (10 m); in sheltered bays, on shallow banks, and in estuaries or river mouths; adult sawfish are encountered in various habitat types (mangrove, reef, seagrass, and coral), in varying salinity regimes and temperatures, and at various water depths, feed on a variety of fish species and crustaceans.	No	No	No Effect	No suitable habitat exists since the proposed project consists of a maintained roadway right-of-way.
Mammals					
Gulf Coast jaguarundi (*Herpailurus* (=*felis*) *yagouaroundi cacomitli*) FE; SGCN	Slightly larger than a domestic cat; looks more like a large weasel or otter; uniform in color with a dark gray-brown to chestnut brown coat; darker animals usually found in the dense forest while the lighter individuals are found in more arid and open areas; body is long and low with short legs; small, flattened head with weasel-like ears and narrow brown eyes; long, flattened tail	No	No	No Effect	No suitable habitat exists since the proposed project consists of a maintained roadway right-of-way.
Ocelot *(Leopardus pardalis)* FE; SE; SGCN	Dense chaparral thickets; mesquite-thorn shrub and live oak mottes; avoids open areas; breeds and raises young June-November.	No	No	No Effect	No suitable habitat exists since the proposed project consists of a maintained roadway right-of-way.
Red wolf (*Canis rufus*) FE; SE	Extirpated; formerly known throughout eastern half of Texas in brushy and forested areas, as well as coastal prairies.	No	No	No Effect	This species is extirpated.

Species	Species Habitat Description	Suitable Habitat in project area?	EO ID # from TXNDD Recorded Occurrences within 1.5 miles of project area	Effect on Species	Justification
Southern Yellow Bat *(Lasiurus ega)* ST; SGCN	Associated with trees, such as palm trees (*Sabal mexicana*) in Brownsville, which provide them with daytime roosts; insectivores; breeding in late winter.	No	No	No Impact	No suitable habitat exists since the proposed project consists of a maintained roadway right-of-way.
West Indian manatee (Trichechus manatus) FE; SE; SGCN	Gulf and bay system; opportunistic, aquatic herbivore.	No	No	No Effect	No suitable habitat exists since the proposed project consists of a maintained roadway right-of-way.
White-nosed Coati *(Nasua narica)* ST; SGCN	Woodlands, riparian corridors and canyons; most individuals in Texas probably transients from Mexico; diurnal and crepuscular; very sociable; forages on ground and in trees; omnivorous; may be susceptible to hunting, trapping and pet trade.	No	No	No Impact	No suitable habitat exists since the proposed project consists of a maintained roadway right-of-way.
Reptiles					
Atlantic hawksbill sea turtle (*Eretmochelys imbricate*) FE; SE; SGCN	Gulf and bay system, warm shallow waters especially in rocky marine environments, such as coral reefs and jetties, juveniles found in floating mats of sea plants; feed on sponges, jellyfish, sea urchins, mollusks, and crustaceans, nests April through November	No	No	No Effect	The proposed project is located inland where the proposed project consists of a maintained roadway right-of-way and would not affect the species.
Green sea turtle (*Chelonia mydas*) FT; ST; SGCN	Gulf and bay system; shallow water seagrass beds, open water between feeding and nesting areas, barrier island beaches; adults are herbivorous feeding on sea grass and seaweed; juveniles are omnivorous feeding initially on marine invertebrates, then increasingly on sea grasses and seaweeds; nesting behavior extends from March to October, with peak activity in May and June.	No	No	No Effect	The proposed project is located inland where it consists of a maintained roadway right-of-way and would not affect the species.

Species	Species Habitat Description	Suitable Habitat in project area?	EO ID # from TXNDD Recorded Occurrences within 1.5 miles of project area	Effect on Species	Justification
Kemp's Ridley sea turtle (*Lepidochelys kempii*) FE; SE; SGCN	Gulf and bay system, adults stay within the shallow waters of the Gulf of Mexico; feed primarily on crabs, but also snails, clams, other crustaceans and plants, juveniles feed on sargassum and its associated fauna; nests April through August.	No	No	No Effect	The proposed project is located inland where it consists of a maintained roadway right-of-way and would not affect the species.
Leatherback sea turtle (*Dermochelys coriacea*) FE; SE; SGCN	Gulf and bay systems, and widest ranging open water reptile; omnivorous, shows a preference for jellyfish; in the U.S. portion of their western Atlantic nesting territories, nesting season ranges from March to August.	No	No	No Effect	The proposed project is located inland where it consists of a maintained roadway right-of-way and would not affect the species.
Loggerhead sea turtle (*Caretta caretta*) FT; ST; SGCN	Gulf and bay system primarily for juveniles, adults are most pelagic of the sea turtles; omnivorous, shows a preference for mollusks, crustaceans, and coral; nests from April through November.	No	No	No Effect	The proposed project is located inland where it consists of a maintained roadway right-of-way and would not affect the species.
Texas Horned Lizard *(Phrynosoma cornutum)* ST; SGCN	Open arid or semi-arid regions with sparse vegetation; grass, cactus, scattered brush or scrubby trees; burrows into soil, uses rodent burrows, or hides under surface cover.	No	No	No Impact	No suitable habitat for the Texas horned Lizard exists since the proposed project consists of a maintained roadway right-of-way.
Texas indigo snake *(Drymarchon melanurus erebennus)* ST; SGCN	Texas south of the Guadalupe River and Balcones Escarpment; thornbush-chaparral woodlands of south Texas, in particular dense riparian corridors; can do well in suburban and irrigated croplands if not molested or indirectly poisoned; requires moist microhabitats, such as rodent burrows, for shelter.	No	No	No Impact	No suitable habitat for this species exists since the proposed project consists of a maintained roadway right-of-way.
Texas scarlet snake (*Cemophora coccinea lineri*) ST; SGCN	Mixed hardwood scrub on sandy soils; feeds on reptile eggs; semi-fossorial; active April-September.	No	No	No Impact	No suitable habitat for this species exists since the proposed project consists of a maintained roadway right-of-way.

Species	Species Habitat Description	Suitable Habitat in project area?	EO ID # from TXNDD Recorded Occurrences within 1.5 miles of project area	Effect on Species	Justification
Texas Tortoise *(Gopherus berlandieri)* ST; SGCN	Open scrub woods, arid brush, lomas, grass-cactus association; open brush with grass understory preferred; uses shallow depressions at base of bush or cactus or underground burrow or hides under surface cover.	No	No	No Impact	No suitable habitat for this species exists since the proposed project consists of a maintained roadway right-of-way.
Plants					
Slender rushpea (*Hoffmannseggia tenella*) FE; SE; SGCN	Texas endemic; coastal prairie grasslands on level uplands and on gentle slopes along drainages, usually in areas of shorter or sparse vegetation; soils often described as Blackland clay, but at some of these sites, soils are coarser textured and lighter in color than the typical heavy clay of the coastal prairies; flowering April-November.	No	No	No Effect	No suitable habitat for this species exists since the proposed project consists of a maintained roadway right-of-way with a sandy soil. Blackland Clay soil does not occur within the project area.
South Texas ambrosia (*Ambrosia cheiranthifolia*) FE; SE; SGCN	Open grasslands and mesquite-dominated shrublands on various soils ranging from heavy clays to lighter textured sandy loams. , Mostly over the Beaumont Formation on the Coastal Plain; in modified unplowed sites such as railroad and highway rights-of-way, cemeteries, mowed fields, erosional areas along small creeks; flowering July-November.	No	No	No Effect	No suitable habitat for this species exists since the proposed project consists of a maintained roadway right-of-way on a barrier island.

Source: TPWD NDD data received 02/18/15; TPWD County List (Last Revision 08/07/2012); USFWS Information, Planning, and Conservation (IPaC) system accessed 2/18/15
Red Knot habitat: http://www.allaboutbirds.org/guide/red_knot/lifehistory (accessed 2-24-15)
Listed within the Occurrence List for USGS Quadrangle Crane Island SW
FT = Federal Threatened FC = Candidate for federal listing
FE = Federal Endangered NL = Not Listed
ST = State Threatened FT/SA = Federal Threatened due to similarity in appearance
SGCN = Species of Greatest Conservation Need

APPENDIX E

EPIC SHEETS

During the planning phase of project development, the following Environmental Permits, Issues and Commitments have been developed during coordination with resource agencies, local governmental entities and the general public. Any change orders and/or deviations from the final design must be reported to the Engineer prior to the commencement of construction activities as additional environmental clearances may be required.

I. Clean Water Act, Section 402 National Pollutant Discharge Elimination System

Action Items Required : ☐ No Action Required

1. ☒ The contractor must implement the SW3P by installing Best Management Practices (BMPs) as indicated in the construction plans and maintained appropriately throughout construction. BMPs must be in place prior to the start of construction. The SW3P may need to be revised as necessary as construction progresses.
2. ☒ For all construction PSL's off the ROW, the contractor must certify compliance with all applicable laws, rules, and regulations pertaining to the preservation of cultural resources, natural resources and the environment.
3. ☒ Based on the acreage of impact, select the appropriate box below:
   - ☐ This project will disturb less than 1 acre of soil and is not part of a larger common plan of development; therefore, a NOI and TPDES Site Notice are not required for this project.

   or
   - ☐ This project will disturb equal to or more than 1 acre of soil but less than 5 acres; therefore a NOI is not required but a TPDES Site Notice is required. The Construction Site Notice (CSN) is required to be posted at the construction site in a publicly accessible location for review by the public, TCEQ, EPA and other Inspectors.

   or
   - ☒ This project will disturb equal to or more than 5 acres of soil and will require a NOI and TPDES Site Notice. The NOI and Site Notice are required to be posted at the construction site in a publicly accessible location.
4. ☒ Need to address MS4 requirements ☐ MS4 requirements not needed

II. Clean Water Act, Section 401 and 404 Compliance

Action Items Rquired : ☐ No Action Required

1. ☒ Filling, dredging or excavating in any water bodies, rivers, creeks, streams, wetlands or wet areas is prohibited unless specified in the USACE permit and approved by the Engineer. The contractor shall adhere to all agreements, mitigation plans, and BMPs required by the NWP as regulated by the USACE.

   The Contractor must adhere to all of the terms and conditions associated with the following permit(s):
   - ☐ No Permit Required
   - ☐ Nationwide Permit 14 – PCN not Required (less than 1/10th acre waters or wetlands affected)
   - ☐ Nationwide Permit 14 – PCN Required (1/10th to <1/2 acre, 1/3 in tidal waters)
   - ☒ Individual 404 Permit Required
   - ☐ Other Nationwide Permit Required: NWP# _____
2. ☒ The Contractor is responsible for obtaining new or revised Section 404 permit(s) for Contractor initiated changes in construction methods that changes Impacts To Waters Of The U.S., including wetlands. The Contractor will ensure that the water quality of the State will be maintained and not degraded.
3. ☒ Best Management Practices for applicable 401 General Conditions:

General Condition 12 – Categories I and II BMPs required

Category I (Erosion Control)	Category II (Sedimentation Control)
☐ Temporary Vegetation	☒ Silt Fence
☐ Blankets, Matting	☐ Rock Berm
☒ Mulch	☐ Triangular Filter Dike
☐ Sod	☐ Sand Bag Berm
☐ Interceptor Swale	☐ Hay (Straw) Bale Dike
☐ Diversion Dike	☐ Brush Berms
☐ Erosion Control Compost	☐ Erosion Control Compost
☐ Mulch Filter Berms and/or Socks	☐ Mulch Filter Berms and/or Socks
☐ Compost Filter Berms and/or Socks	☐ Compost Filter Berms and/or Socks
☐ Compost Blankets	☐ Stone Outlet Sediment Traps
	☐ Sediment Basins

General Condition 21 – Category III BMPs required

Category III (Post-Construction TSS Control)
☐ Vegetative Filter Strips
☐ Retention/Irrigation
☐ Extended Detention Basin
☐ Constructed Wetlands
☐ Wet Basins
☐ Erosion Control Compost
☐ Mulch Filter Berms and/or Socks
☐ Compost Filter Berms and/or Socks
☒ Vegetation-Lined Ditches
☐ Sand Filter Systems
☐ Grassy Swales
☐ Sedimentation Chambers

4. ☐ Other Project Specific Actions:
   1.
   2.
   3.

III. Cultural Resources

Action Items Required : ☐ No Action Required

1. ☒ Refer to the 2004 TxDOT Standard Specifications For Construction And Maintenance Of Highways, Streets, And Brides, Item 7.19.A, in the event historical issues or archeological artifacts are found during construction. Upon discovery of archeological artifacts (bones, burnt rock, flint, pottery, etc.) cease work in the immediate area and contact the Engineer immediately.
2. ☐ Other Project Specific Actions:
   1.
   2.

IV. Vegetation Resources

Action Items Required : ☐ No Action Required

1. ☒ In accordance with the 2004 TxDOT Standard Specifications; Item 164 – Seeding For Erosion Control; provide and install temporary or permanent seeding for erosion control as shown on the plans or as directed by the Engineer for all seeding and replanting of right of way where possible.
2. ☒ In accordance with Executive Order 13112 on invasive species and the Executive Memorandum on Beneficial Landscaping, native species of plants shall be used for all seeding and replanting of right of way where possibe.
3. ☒ Avoid or minimize the clearing of woody vegetation.
4. ☐ Other Project Specific Actions:
   1.
   2.

SHEET 1 OF 2

Texas Department of Transportation
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CORPUS CHRISTI DISTRICT

ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS (EPIC)

FED.RD. DIV.NO.	PROJECT NO.		HIGHWAY NO.
6			PR22
STATE	DISTRICT	COUNTY	
TEXAS	CC	NUECES	SHEET NO.
CONTROL	SECTION	JOB	XXX

V. Federal Listed, and Proposed Threatened and Endangered Species, Critical Habitat, State Listed Species, Candidate Species and Migratory Birds

Action Items Required : ☐ No Action Required

1. ☒ Under the Migratory Bird Treaty Act of 1918 (MBTA), codified at 16 U.S.C. 703–712 and as enforced by the USFWS, the proposed construction work will not remove active nests from bridges, trees, ground and other structures during migratory bird nesting season, (February 1st. through November 1st.). If the Contractor needs to perform work within right of way during nesting season, a qualified Biologist shall conduct a survey to determine if nests are present. If present, Contractor shall maintain a minimum 25 foot buffer zone of vegetation around the nest until the young have fledged or the nest is abandoned. A MBTA Nest Survey Form may be obtained from the Pharr District Office Environmental Section.

2. ☒ If caves or sinkholes are discovered, cease work in the immediate area and contact the Engineer immediately.

3. ☒ There is the potential presence of state–listed species & species of concern in the project area and state law prohibits the taking (incidental or otherwise) of state listed species. Taking is defined as the collection, hooking, hunting, netting, shooting, or share by any means or devices. If any listed species are observed, cease work in the immediate area, do not disturb species or habitat and contact the Engineer immediately.

   The adjacent areas to the existing ROW has potential habitat for the following four bird species:

   1. Reddish Egret *(Egretta rufescens)*, ST
   2. Sooty Tern *(Sterna fuscata)*, ST
   3. White–faced Ibis *(Plegadis chihi)*, ST
   4. Wood Stork *(Mycteria Americana)*, ST

VI. Hazardous Materials on Contamination Issues

Action Items Required : ☐ No Action Required

☒ General (applies to all projects):

Comply with the Hazard Communication Act (HCA) for personnel who will be working with hazardous materials by conducting safety meetings prior to beginning construction and making workers aware of potential hazards in the workplace. Ensure that all workers are provided with personal protective equipment appropriate for any hazardous materials used.

Obtain and keep on–site Material Safety Data Sheets (MSDS) for all hazardous products used on the project which may include, but are not limited to the following categories: Paints, acids, solvents, asphalt products, chemical additives, fuels and concrete curing compounds or additives. Provide protected storage, off bare ground and covered, for products which may be hazardous. Maintain product labelling as required by the HCA.

Maintain an adequate supply of on–site spill response materials as indicated in the MSDS. In the event of a spill, take immediate action to mitigate the spill as indicated in the MSDS and in accordance with safe work practices. Contact the TxDOT Pharr District Spill Coordinator immediately. The Contractor shall be responsible for the proper containment and cleanup of all product spills.

Contact the Engineer if any of the following are detected:

- Dead or distressed vegetation (not identified as normal)
- Trash piles, drums, canisters, barrels, etc.
- Undesirable smells or odors
- Evidence of leaching or seepage of contaminant substances

Any other evidence indicating possible hazardous materials or contamination discovered on site.

1. ☒ If potentially hazardous material and/or contaminated media (i.e.: soil, groundwater, surface water, sediment, building materials) are unexpectedly encountered during construction, assure that such materials and contamination are handled according to applicable federal and state regulations, cease work in the immediate area and contact the Engineer immediately.

2. Does the project involve any bridge class structure rehabilitation or replacements (bridge class structures not including box culverts)?

   ☐ Yes ☒ No

   If "No", then no further action required.
   If "Yes", then TxDOT is responsible for completing an asbestos assessment/inspection.

3. Are the results of the asbestos inspection positive (is asbestos present)?

   ☐ Yes ☐ No ☐ N/A

   If "Yes", then TxDOT must retain a Texas Department of State Health Services (DSHS) licensed asbestos consultant to assist with the notification, develop abatement/mitigation procedures, and perform management activities as necessary. The notification form to DSHS must be postmarked at least 15 working days prior to scheduled abatement activities and/or demolition.

   If "No", then TxDOT is still required to notify DSHS 15 working days prior to any scheduled demolition.

4. ☐ The Contractor is responsible for providing the date(s) for abatement activities and/or demolition with careful coordination between the Engineer and an Asbestos Consultant in order to minimize construction delays and subsequent claims.

VII. Other Environmental Issues

Action Items Required : ☐ No Action Required

1. ☒ Noise

   Contractor shall make every reasonable effort to minimize construction noise through abatement measures such as work hour controls and proper maintenance of equipment mufflers.

2. ☒ Air

   Contractor shall practice common dust control techniques such as surface chemical treatment or watering of unpaved road surfaces and vehicle speed reduction shall be implemented to minimize and prevent airborne dust during construction.

Pharr District Contact No. 956–702–6100

List of Abbreviations

BMP: Best Management Practice
CGP: Construction General Permit
FEMA: Federal Emergency Management Agency
FHWA: Federal Highway Administration
MOA: Memorandum of Agreement
MOU: Memorandum of Understanding
MS4: Municipal Separate Stormwater Sewer System
NOI: Notice of Intent
NOT: Notice of Termination
NWP: Nationwide Permit
PCN: Pre–Construction Notification
PSL: Project Specific Location
SW3P: Storm Water Pollution Prevention Plan
TCEQ: Texas Commission on Environmental Quality
THC: Texas Historical Commission
TPDES: Texas Pollutant Discharge Elimination System
TPWD: Texas Parks and Wildlife Department
TxDOT: Texas Department of Transportation
T&E: Threatened and Endangered Species
USACE: U.S. Army Corp of Engineers
USFWS: U.S. Fish and Wildlife Service

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CORPUS CHRISTI DISTRICT

ENVIRONMENTAL PERMITS, ISSUES AND COMMITMENTS (EPIC)

FED.RD. DIV.NO.	PROJECT NO.		HIGHWAY NO.
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STATE	DISTRICT	COUNTY	
TEXAS	CC	NUECES	SHEET NO.
CONTROL	SECTION	JOB	XXX

APPENDIX F

U.S. ARMY CORPS OF ENGINEERS SUMMARY OF FINDINGS AND EXECUTED PERMIT NO. SWG-2000-02743

CESWG-RD-E
Application: SWG-2000-02743

MEMORANDUM FOR THE RECORD

SUBJECT: Department of the Army Environmental Assessment and Statement of Findings for the Above – Numbered Permit Application

This document constitutes the Environmental Assessment, Section 404(b)(1) Guidelines Evaluation (attached), Public Interest Review, and Statement of Findings for the subject application.

1. Applicant.

Gulf Shores Joint Venture
14650 Compass Street, Suite 1
Corpus Christi, TX 78418

LATITUDE & LONGITUDE (NAD 83):
Latitude: 27.610113 North; Longitude: 97.215520 West

2. Corps Authority. The United States Army Corps of Engineers, Galveston District (Corps) will evaluate the proposed activity under Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act (33 USC 1344) and (33 USC 403).

3. Project and Site Description. The applicant proposes to redesign and complete the construction of the previously authorized, and partially completed, residential and commercial subdivision called the Lake Padre Subdivision. The project is located in wetlands, sand flats, and tidal waters, located southeast of the intersection of Park Road 22 and State Highway 361, on North Padre Island, in Corpus Christi, Nueces County, Texas. The USGS Quad reference map is: CRANE ISLANDS, SW.

Avoidance and Minimization Information: The proposed project elements to be redesigned will not result in additional impacts to aquatic resources. However, the proposed completion of previously authorized construction will result in impacts to 15 acres of freshwater wetlands in areas that were previously identified as uplands. The 15 acres of new wetlands that exist within the project footprint were identified during a wetland delineation that was performed in 2014. The subject area was depicted as uplands in the site map of the 1986 permit plans.

The culverts authorized by the permit which were designed to enhance water circulation within the canal system were never constructed; however, this water circulation feature was redesigned to be constructed as a canal, which would increase the circulation that would have been provided by the culverts. The improved circulation would minimize impacts to aquatic resources located within the project site. Additionally, the opening at the confluence of Lake Padre and Packery Channel will be widened from 50 feet to

85 feet, which would further enhance water circulation throughout the project site.

Regarding long-term impacts the proposed marina could potentially have on water quality within the immediate area of the marina and adjacent waters, there are many factors that can influence this. Siting and design are among the most important factors affecting a marina's potential for water quality impacts. The location of a marina whether it is open (located directly on a river, bay, or barrier island) or semi-enclosed (located on an embayment or other protected area) as well as the basin configuration and orientation to prevailing winds affects its circulation and flushing characteristics.

Maintaining water quality within a marina basin depends primarily on flushing as determined by water circulation within the basin. If a marina is not properly flushed, pollutants will concentrate to unacceptable levels in the water and/or sediments, resulting in impacts to biological resources. In tidal waters, flushing is primarily due to tidal advective mixing and is controlled by the movement of the tidal prism into and out of the marina waterbody. A large tidal prism relative to the mean total volume of the waterbody indicates a large potential for flushing because more of the "old" water has a chance to become mixed with the "new" water outside the boundary or opening to the waterbody.

The degree of flushing necessary to maintain water quality in a marina should be balanced with safety, vessel protection, and sedimentation. Wave energy should be dissipated adequately to ensure that boater safety and protection of vessels are not at risk. The term *flushing* or *residence time* is often misused in that a single number (e.g., 10 days) is sometimes given to describe the flushing time of an estuary or harbor. In actuality, the flushing time ranges from zero days at the boundary to possibly several weeks, depending on location within the marina waterbody.

In *Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters* (EPA 840-B-92-002 January 1993), the EPA identified design practices that can be applied to greatly reduce or eliminate the potential for stagnation of water in a marina and will help maintain biological productivity and aesthetics:

- Design the bottom of the marina and the entrance channel so they are not deeper than adjacent navigable water unless it can be demonstrated that the bottom will support a natural population of benthic organisms. The Packery Channel is at least 5 feet deeper than the marina, so this requirement will be met. Flushing rates in the marina will be maximized by designing the basin and channel depths to gradually increase towards the Packery Channel to promote flushing.

- Design marinas with as few segments as possible to promote circulation within the basin. The marina was designed to have an aspect ratio of approx 2.4. To properly flush, a marina should have an aspect ratio greater than 0.33 and less than 3.0, preferably between 0.5 and 2.0. This marina has an appropriate aspect ratio for flushing.

- Design and locate entrance channels to promote flushing The applicant has redesigned the marina's entrance to Packery Channel to be as wide as possible to promote flushing while still providing adequate protection. In addition to the increased tidal range this modification will allow, the location of the entrance is also associated with a jet entering the Packery Channel on the flood tide. Because of the design and location of the entrance, the jet may be able to circumnavigate a greater length of the marina basin perimeter and interact with the canals setting up multiple gyres in the circulation.

- Establish two openings, where appropriate, at opposite ends of the marina to promote flow-through currents. The applicant has redesigned the proposed culvert connected to the existing canal subdivision and located under Park Road 22 inside the basin to be a 44-foot-wide flushing channel. This opening will connect to an existing residential canal subdivision located bayside. This will allow wind-generated currents or tidal currents to move continuously through the marina.

Seagrass beds exist within areas that are proposed for dredging and will consequently be impacted. A portion of this seagrass loss is expected to be offset by the shallow shelves that are part of the overall project plans. Additionally, it is expected that seagrasses will naturally establish in some portions of the project area as a result of the enhanced water circulation that will occur throughout the project area. However, the Corps will request that the applicant conduct additional seagrass surveys and, dependent on the results of these surveys, will request that seagrasses be transplanted to those areas with potential to support seagrass, should seagrasses not establish naturally.

The applicant has avoided and minimized impacts to additional jurisdictional areas that have been identified to the extent practicable.

Compensatory Mitigation: Permit SWG-2000-02743 has a history dating back to 1973 (see background section, below). Prior mitigation included the creation of 16 acres of saltwater wetlands and 10 acres of freshwater wetlands to compensate for permitted impacts and it was determined that all required mitigation had been completed and in compliance with prior authorizations. The current mitigation plan

includes compensatory mitigation for the additional 15 acres of jurisdictional freshwater wetlands that have been identified, as well as the construction of a canal in place of the originally proposed culvert to further enhance water circulation. To compensate for impacts to 15 acres of freshwater wetlands, the applicant will preserve and enhance 15 acres of off-site freshwater wetlands. The mitigation site is located within Padre Balli Park, located approximately 1.5 miles south of the project area.

4. Purpose and Need.

Applicant's Stated Purpose and Need: The need for the project is to complete the construction of a partially-constructed residential and commercial development that was previously authorized by the Corps.

Basic Project Purpose and Water Dependency Determination: The basic purpose is the completion of construction of a mixed use development, including commercial and residential features and also a marina. The proposed project does not require access or proximity to or siting within a special aquatic site to fulfill its basic purpose; therefore, in accordance with 40 CFR Part 230, Section 404(b)(1) Guidelines the proposed project is not water dependent.

Overall Project Purpose: The overall project purpose is to complete the construction of a mixed use development on North Padre Island in accordance with planning decisions coordinated by the applicant and the City of Corpus Christi. The overall purpose is also to complete the redesign of the project site to better improve the circulation aspects of the project.

5. Existing Conditions. The subject property, which is approximately 500 acres, is a partially developed tract of land, with connections to the Gulf of Mexico through Packery Channel, which is north of the property. The undeveloped portions of the property exhibit conditions typical of central Texas coastal barrier islands. The property is abutted by substantial commercial and residential developments to the northwest, west, and southwest. Wetlands in the area are typically dominated by smooth cordgrass (*Spartina alterniflora*), black mangrove (*Avicennia germinans*), turtleweed (*Batis maritima*), Virginia saltwort (*Salicornia virginica*), saltgrass (*Distichilis spicata*), narrow leaf marshelder (*Iva angustiflolia*), sea ox-eye (*Borrichia frutescens*), and common threesquare (*Scirpus americana*). The uplands are typically dominated by seacoast bluestem (*Andropogon littoralis*), eastern baccharis (*Baccharis halimifolia*), western ragweed (*Ambrosia psilostachya*), bushy bluestem (*Andropogen glomeratus*) and gulf cordgrass (*Spartina spartinae*).

Much of the previously authorized work has been completed, such as the canal lots,

retaining walls, sea gate, and a portion of the authorized dredging. However, there is work remaining to complete the project, such as the completion of dredging of Lake Padre and construction of the canal feature.

6. Background. In 1973, the Corps issued Permit 9009 for the construction of the Padre Isles Project, which covered about 4,000 acres, including the project site but with the majority of the land west of Park Road 22. In April 1986, the permit was split, with approximately 500 acres (project site) being transferred to Lake Padre, and was given DA Permit 17760; the original permit had no mitigation requirements. Shortly after (August 1986) the permit was split, a permit amendment DA 17760(01) was granted that had the effect of changing the basic character of the development from a network of narrow canals and filling for finger islands to open water bodies and large land areas with vista and the creation of a site for a large marina. Additionally, mitigation was added including 16 acres of saltwater wetlands, 10 acres of freshwater wetlands, and shallow shelves and emergent islands.

In March 1987, amendment 17760(02) was approved authorizing additional alteration of the northern portion of Lake Padre and made adjustments to the mitigation. Amendment 17760(03) was approved in November 1987, and realigned the access roads to two finger islands and reconfigured the saltwater wetlands, resulting in an additional 0.8-acre of created wetlands for mitigation. In 1988, amendment 17760(04) authorized an extension of time until 31 December 1991 to complete work, and amendment 17760(05) authorized an extension of time until 31 December 1996. Amendment 17760(06), finalized in April 1997, authorized an extension of time until the end of 2000, and special conditions were written to clarify the mitigation requirement associated with the possible Packery Channel dredging. Amendment 17760(07) was withdrawn by the Corps due to inadequate plans. In June 2002, amendment 17760(08) was issued, authorizing an extension of time until 2007, and included modifications to the permit including deletion of a 22-acre wetland area, and the removal of maintenance dredging for Packery Channel. At that time, most of the requested compensatory mitigation had been completed. As a note, Nueces County has the responsibility of maintenance dredging of the Packery Channel. Amendment 17760(09), now numbered SWG-2000-02743, was issued in October 2008 and authorized an extension of time until 31 December 2013. Documentation related to the DA Permit SWG-2000-02743 showed impacts to approximately 45 acres of wetlands, and 52 acres of sandflats (open water not previously calculated). In December 2013, the Corps received a request for an amendment to the existing permit. The Corps determined that the applicant had not yet constructed the required water quality culverts. In February 2014, the Corps determined the permittee could apply for an amendment to complete construction of the water circulation feature and bring it into compliance with prior permit requirements.

The modifications contained in this proposed permit modification are the result of local planning efforts by the City of Corpus Christi (the City), and were coordinated not only with the City but also with the Texas Department of Transportation (TXDOT). When the City agreed that the combination of a canal and bridge span would be preferred over the culvert, it took a bond issue to the voters in 2004 to approve the money to construct the bridge crossing. The canal and bridge features will enable improved circulation and water quality in the canals on either side of Park Road 22. The City views the bridge and canal system as elements of the City's transportation plan for North Padre Island.

7. Scope of Analysis.

a. NEPA: The determination of what is the appropriate Scope of Analysis governing the Corps' permit review and decision is guided by the Corps' National Environmental Policy Act (NEPA) regulations for the regulatory program: 33 CFR 325, Appendix B. The Scope of Analysis should be limited to the specific activity requiring a Department of the Army (DA) permit and any additional portions of the entire project over which there is sufficient Federal control and responsibility to warrant NEPA review. Appendix B states that factors to consider in determining whether sufficient "control and responsibility" exist include: 1) whether or not the regulated activity comprises "merely a link" in a corridor type project; 2) whether there are aspects of the upland facility in the immediate vicinity of the regulated activity which affect the location and configuration of the regulated activity; 3) the extent to which the entire project will be within Corps jurisdiction; and 4) the extent of cumulative Federal control and responsibility. Generally, the Corps' area of responsibility includes all waters of the United States (U.S.) as well as any additional areas of non-jurisdictional waters or uplands where the district determines there is adequate Federal control and responsibility to justify including those areas within the Corps' NEPA scope of analysis. This normally includes upland areas in the immediate vicinity of the waters of the U.S. where the regulated activity occurs (Standard Operating Procedures for the U.S. Army Corps of Engineers Regulatory Program – July 2009).

(1) Factors.

(i) With regard to the first factor that must be considered in the determination of sufficient Federal control and responsibility, the regulated activities associated with this mixed use development do not comprise a link in a corridor type of project.

(ii) With regard to the second factor, the design of upland portions of the mixed use development occurring in the immediate vicinity of the regulated activities do affect the location and configuration of the regulated activities.

(iii) With regard to the third factor, the extent to which the entire project will be within Corps jurisdiction, the proposed mixed use development will impact approximately 15 acres of additional freshwater wetlands as compared to permitted plans from 1986. Today, there are 111 jurisdictional waters on-site, within the approximately 500 acre project (approximately 22% of the total acreage of the project site). These jurisdictional waters are scattered throughout the footprint of the project, and will be affected by dredge and fill activities associated with the completion of construction of the mixed use development.

(iv) With regard to the fourth factor that must be considered in the determination of sufficient Federal control and responsibility, during our consideration of the extent of cumulative Federal control and responsibility for this project, we appropriately relied on and fully considered, information and reports from Federal agencies pursuant to their responsibilities under the Fish and Wildlife Coordination Act, the Endangered Species Act (ESA), and Essential Fish Habitat (EFH) regulations (National Marine Fisheries Service – NMFS). ESA threatened or endangered species consultation with the U.S. Fish and Wildlife Service (FWS) was required for this permit action. The FWS provided comments which are discussed in detail, in Section 9 and Section 10 of this document. Our staff archeologist reviewed the project site and determined that there are no properties listed in the National Register of Historic Places for the permit area. NMFS responded to the public notice to state that, because of their current workload, their biologists are unable to adequately investigate this permit modification and are therefore taking no action. No further coordination was required pursuant to our responsibilities under 33 CFR 325, Appendix C.

The project has not yet received Section 401 Clean Water Act water quality certification from the Texas Commission on Environmental Quality, or a determination of consistency with the State of Texas Coastal Zone Management Plan from the Texas General Land Office. Both of these items are pending and will be required before construction is initiated. No other requests for approval were denied by Federal and state land use planning authorities.

(2) Determined Scope. In conclusion, based on our examination of NEPA (33 CFR 325, Appendix B) and applicable program guidance (e.g. CEQ's Considering Cumulative Effects Under the National Environmental Policy Act and the Standard Operating Procedures for the U.S. Army Corps of Engineers Regulatory Program – July 2009), we have determined that the appropriate scope for this project is over the entire property.

b. National Historic Properties Act (NHPA) "Permit Area". The determination of

what is the appropriate Scope of Analysis governing the Corps' permit review and decision is guided by the Corps' NHPA regulations for the regulatory program: 33 CFR 325, Appendix C.

(1) Tests. Activities outside waters of the U.S. are included because of all of the following tests are satisfied: Such activity would not occur but for the authorization of the work or structures within the waters of the U.S.; Such activity is integrally related to the work or structures to be authorized within waters of the U.S. (or, conversely, the work or structures to be authorized must be essential to the completeness of the overall project or program); and such activity is directly associated (first order impact) with the work or structures to be authorized.

(2) Determined Scope. We have determined that the appropriate scope for this project is over the entire property.

c. Endangered Species Act (ESA) "Action Area." The determination of what is the appropriate Scope of Analysis governing the Corps' permit review and decision is guided by the Endangered Species Act of 1973.

(1) Action area means all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action.

(2) Determined Scope. We have determined that the appropriate ESA action area for this project is over the entire property. The activities occurring in uplands would not occur but for the impacts within waters of the U.S.

8. Environmental Assessment.

a. Alternatives.

A key provision of the 404(b)(1) guidelines is the "practicable alternative test" which requires that "no discharge of fill material shall be permitted if there is a practicable alternative to the proposed fill which would have a less adverse impact on the aquatic ecosystem." This is especially true when the proposed project is not water dependent. The applicant must demonstrate that there are no less damaging sites available and that all on-site impacts to waters of the United States have been avoided to the maximum practicable extent possible. For an alternative to be considered "practicable", it must be available and capable of being done after taking into consideration cost, existing technology, and logistics in light of the overall project purpose.

(1) No Action Alternative. This alternative involves denial of this permit

modification and the applicant would not be able to complete the project. This alternative is not practicable as the applicant has already begun work. The no action alternative would require restoration of the entire project site and would not result in increases in water quality. This is not the least damaging practicable environmental alternative (LEDPA).

(2) Off-site Alternatives. No off-site alternatives were considered as the applicant has already begun work. This permit modification is for an extension of time to complete the authorized work, with minor modifications to the design of some project features.

(3) On-site Alternative 1. This alternative would be the project as it stood at the last extension of time that was granted in October 2008. While this was the least environmentally damaging practicable alternative, the applicant has been able to redesign elements of the project that would further reduce environmental impacts (see On-site Alternative 2, below). Therefore, this is not the LEDPA.

(4) On-site Alternative 2 (Applicant's Preferred Alternative). This alternative would extend the time for the applicant to complete the project, and would include a canal-type connection between Lake Padre and the existing canal system west of Cruiser Street, as well as the construction of two bridges (one northbound, one southbound) over the proposed canal. The construction of a canal would replace the culverts that are proposed for On-site Alternative 1. The construction of a canal in place of culverts would significantly improve water quality by increasing circulation to the existing canal on the west side of Park Road 22. Additionally, the surge gate at the confluence of Lake Padre and Packery Channel would be removed and the opening would be widened from 50 feet to 85 feet, which would enhance water circulation throughout the project site. Therefore, On-site Alternative 2 is the LEDPA.

b. Environmental Setting. The project is located at the north end of Padre Island, a sand barrier island which extends approximately 130 miles along the coast of south Texas. North Padre Island is part of the barrier island geologic system formed by offshore Pleistocene deposits and maintained by sediments deposited as a result of longshore drift. The island is composed of sand, mud, and shell.

The project site is located immediately south of the Packery Channel and west of the Gulf of Mexico. An existing residential area lies between the project site and the Gulf of Mexico. South of the project site is a residential development and County Park. To the west of the project site is a highly developed residential area containing numerous canals. The project site is a partially developed residential area similar to those that exist in adjacent areas.

c. Environmental Impacts. The possible consequences of this proposed work were studied for environmental concerns, social well-being, and the public interest, in accordance with regulations published in 33 CFR 320-332. All factors, which may be relevant to the proposal, must be considered. The following factors were determined to be particularly relevant to this application and were evaluated appropriately, as they relate to the least environmentally damaging practicable alternative described in the alternative analysis section.

(1) Historic and Cultural Resources. The National Register of Historic Places has been consulted and no properties are listed in the permit area. In addition, the permit area has been so extensively modified that the proposed project has no potential to affect a Historic Property.

(2) Water Quality. Temporary turbidity is probable during construction but will resolve after dredging is ceased. In general, the construction of a canal feature instead of a culvert, and expanding the width of the opening at the Packery Channel, would be expected to improve water quality in the surrounding canal areas. The project provides water quality benefits to the surrounding canal system on either side of Park Road 22. Stormwater runoff from construction sites will result in a minimal adverse impact to surface water quality, as long as best management practices (BMPs) are implemented.

(3) Endangered Species. In response to the public notice, the FWS recommended an assessment of sand and tidal flats in the project area for the federally listed, threatened piping plover, to include the red knot. The red knot was listed as a candidate species for federal listing at the time the comment was received; the red knot was listed as a threatened species in January 2015. The applicant had a survey for piping plover performed 16 December 2014. The applicant responded to the FWS that no piping plover were observed during the survey; however, potential areas for piping plover usage were reported to be present on, and adjacent to, the project site. The FWS replied that the survey that was performed was limited to a single day and stated that that this is not sufficient. Texas Parks and Wildlife responded similarly, recommending that the applicant should conduct an official survey for a minimum of nine months, beginning in October and ending in June, to adequately evaluate the presence of piping plover. Piping plover is known to exist within the project area. The proposed work will have No **Affect** on piping plover or their critical habitat, as a special condition will be added to this permit authorization requiring that on-site monitors to be present during the wintering months while construction is occurring. Similarly, while the red knot may potentially utilize the project site, the proposed work will have No **Affect** on red knot or their critical habitat, as a special condition will be added to this permit authorization requiring that on-site monitors to be present during the wintering months

while construction is occurring.

In response to the public notice, Texas Parks and Wildlife (TPWD) recommended that BMPs be used during dredging activities in order to protect the West Indian manatee, currently listed as endangered, as well as sea turtle species. TPWD went on to state that sea turtles are common inhabitants of Packery Channel and have been observed in Lake Padre. The applicant stated that they are open to using such BMPs. Therefore, a special condition requiring BMPs be followed to protect manatees and sea turtles during dredging activities will be added to this permit authorization. Therefore, the proposed work will have No **Affect** on West Indian manatees or sea turtle species, or their critical habitat.

(4) Fish and Wildlife Values. During construction activities, there would be short-term adverse impacts to wildlife species in the project vicinity associated with increased noise and the presence of construction equipment. The majority of the proposed work would occur in an existing area of construction and development. Compensatory mitigation is being proposed for newly identified wetland areas that would be permanently impacted by the construction. In all, the proposed work would temporarily, though not adversely, impact wildlife habitat.

(5) Essential Fish Habitat (EFH). Impacts to EFH will occur as a result of the construction activities associated with dredging and construction of the canal feature as well as the remaining areas to be filled. However, we have determined, through our coordination with the National Marine Fisheries Service, that the adverse effects to EFH are minimal.

(6) Wetlands/Special Aquatic Sites. The proposed project will impact 15 acres of newly identified wetlands located within the footprint of the previously authorized work. To mitigate for the loss of functions and values of the 15 acres of freshwater wetlands, the applicant will preserve and enhance 15 acres of off-site freshwater wetlands. The mitigation site is located within Padre Balli Park, located to the south of the project area. The proposed mitigation plan will offset the loss of functions and values of the proposed project impacts.

(7) Shoreline Erosion and Accretion. The project has been designed to prevent issues related to shoreline erosion and accretion. The construction of bulkheads within the project area would be expected to prevent erosion to the shoreline. The sea gate feature would protect the interior of the project area from storm surges and would be expected to prevent issues related to shoreline accretion.

(8) Recreation. The recreational value of the area will be enhanced as a result

of the proposed project. In addition, fully dredged canals would result in a safer area for recreation activities to occur.

(9) Aesthetics. The proposed work is located within an existing work site. The proposed project is similar to other projects in the surrounding area. The proposed work will have a temporary adverse impact upon the aesthetic value of the site caused by the presence of construction equipment and machinery. During the construction activity, there would be a generation of noise. However, it is expected that the activities would be performed during daylight hours, be temporary, and be within normal ranges for construction equipment.

(10) Land Use. There are no known land use classifications or coastal zone management plans that would adversely affect the project.

(11) Navigation. Navigation occurring in the area will not be adversely affected by this project. Additionally, fully dredged canals would result in increased navigational safety.

(12) Federal Projects. The project is not located along a Federal Navigation/Flood Control Project and has been coordinated with the Operations Division/Navigation Branch/Programs and Project Management Division/Real Estate Division. Through this coordination, it has been determined that no federal project would be affected by the proposed project.

(13) Conservation. Compensatory mitigation previously constructed has been determined to be in compliance with the conditions of the previous authorization. The additional mitigation will include the conservation and enhancement of 15 acres of off-site freshwater wetlands. The mitigation site is located within Padre Balli Park, located to the south of the project area.

(14) Floodplain Hazards. The applicant will have received all required permits and authorization required for construction within the flood zone.

(15) Other Federal, State, or Local Requirements. All required Federal, State, and/or local authorization or certifications necessary to complete processing of this application have been obtained except for water quality certification and coastal zone consistency certification.

This project is considered a Tier II project. The Texas Commission on Environmental Quality (TCEQ) has not yet acted on the applicant's request for water quality certification under Section 401 of the Clean Water Act. The Corps will provide the

TCEQ with a copy of this permit decision document when finalized. The final permit decision document will contain the environmental assessment and mitigation and §404(b)(1) analysis. The TCEQ will then make its determination whether the project will comply with state surface water quality standards in accordance with Section 401 of the Clean Water Act. The Corps will provide a permit decision to the applicant when the following procedures have been completed. The TCEQ will either provide its certification decision (issuance or denial) to the Corps, or request an extension from the Corps within 10 working days from receipt of the Corps decision document. If the TCEQ does not provide a certification decision or request an extension within the 10 day period, the Corps will presume waiver of certification in accordance with 33 CFR 325.2(b) and proceed with the issuance or denial of the permit. If TCEQ requests an extension of time, the Corps will determine the merit of the time extension request and the length of the extension based on 33 CFR 325.2(b) and notify TCEQ of its intended decision. If the Corps decides to deny or modify a request for extension, TCEQ will have 10 working days from the date it is notified of the intended action of the Corps on the request for extension in which to either certify or deny certification.

(16) Other Factors Considered. The following factors were considered during the evaluation process but were determined to not be particularly relevant to this application: general environmental concerns, floodplain values, safety, energy needs, economics, water supply and conservation, air pollution, food and fiber production, and mineral needs.

d. Cumulative and Secondary Impacts. An assessment of cumulative impacts takes into consideration the consequences that past, present, and reasonably foreseeable future projects had, have, or will have on an ecosystem. Every permit application must be considered on its own merits. Its impacts on the environment must be assessed in light of historical permitting activity, along with anticipated future activities in the area. Although a particular project may constitute a minor impact in itself, the cumulative impacts that result from a large number of such projects could cause a significant impairment of water resources and interfere with the productivity and water quality of existing aquatic ecosystems.

Cumulative impacts can result from many different activities including the addition of materials to the environment from multiple sources, repeated removal of materials or organisms from the environment, and repeated environmental changes over large areas and long periods. More complicated cumulative effects occur when stresses of different types combine to produce a single effect or suite of effects. Large, contiguous habitats can be fragmented, making it difficult for organisms to locate and maintain populations between disjunctive habitat fragments. Cumulative impacts may also occur when the timings of perturbations are so close in space that their effects overlap.

The area in which impacts will be felt will be on north Padre Island. As a general statement, the completion of the March 2003 North Padre Island Storm Damage Reduction and Environmental Restoration Project EIS included all of the impacts from this proposed development in the land use section and conducted a further analysis of cumulative impacts that remains pertinent and valid at this time. That EIS vetted the impacts that include this project. For example, the EIS identified that the North Padre Island area has a moderate to high potential for future development (Section 3.11.3.2). The demand for new development is driven by the demand for housing and an increase in tourism demand. The demand is spurred by baby boomers, primarily from metropolitan areas of Texas, looking for desirable and affordable locations for retirement housing, time-share units, and second homes (Section 3.11.3.2). As the local population and tourism drives demand, more commercial development is expected to follow. The EIS identified that prime locations, adjacent to the beaches, are likely to develop more quickly.

The EIS also identified that private development was likely to happen more quickly with the opening of Packery Channel (Section 4.11.1). Most of the related population increase would happen in the North Padre Island area. The EIS discussed that the opening of the Packery Channel and related private development would attract more tourism and more boaters and anglers in the North Padre area over time (Section 4.11.3). Thus, the EIS observed that the opening of Packery Channel would result in a change in land use within the area (Section 4.11.4.1) and in secondary development impacts (Section 4.11.4.3). According to the EIS, the projected private development would occur on areas of vacant land in North Padre Island (Section 4.11.4.3).

When considering the overall impacts that will result from this project, in relation to the overall impacts from similar past, present, and reasonably foreseeable future projects, their cumulative impacts are not considered to be significantly adverse. Associated compensatory mitigation requirements for projects requiring a DA permit will help offset such losses. It is likely we will receive similar projects in the future, which will go through a comparable review process. Overall, the project will result in minimal environmental impacts and minimal impacts on fish and wildlife values.

9. General Evaluation Criteria Under the Public Interest Review.

a. The relative extent of the public and private need for the proposed work: Public benefits include employment opportunities and a potential increase in the local tax base. The project will create a mixed use development that will directly benefit the local and state economy and provide for the development consistent with Corpus Christi planning for the area. Furthermore, the project will implement water quality and water circulation

measures that will be environmentally beneficial to the immediate community on either side of Park Road 22. Private benefits include land use and economic return on the property.

b. The practicability of using reasonable alternative locations and/or methods to accomplish the objective of the proposed structure or work: The applicant's preferred alternative has been found to be the least environmentally damaging practical alternative.

c. The extent and permanence of the beneficial and/or detrimental effects, which the proposed work is likely to have on the public and private uses which the area is suited: The project site will be permanently converted to a mixed use complex with a marina. During the construction of the facility, there is a potential for a temporary turbidity and reduced water quality, but overall the result of the project will be improved water quality upon project completion. The impacts to fish and wildlife values and wetlands/special aquatic sites on the project site will be permanent; however, the compensatory mitigation plan serves to mitigate the value and functional losses. The project will result in positive effects on recreation and aesthetics and economic impacts.

10. Coordination and Resolution of Comments.

a. Corps Internal Review Concerns. The proposed action was coordinated with Programs and Project Management Division, Real Estate (RE) Division, Operations Division (OD-Navigation and OD-Operations), Engineering and Construction Division (including area offices), Planning and Environmental Compliance Branch, Project Management Office, and Regulatory Division (RD) Corps offices by Internal Review notice dated 24 September 2014.

OD-Navigation commented by electronic mail, dated 24 September 2014, stating that they had no comment. Our RD Staff Archeologist responded by electronic mail, dated 24 September 2014, stating that coordination with the SHPO is not required. RE Division commented by electronic mail, dated 31 August 2015, stating that there are no Corps RE tracts or placement areas within the review area. OD-Operations initially did not provide comments to the internal review request. On 29 July 2015, a request for a response was sent to OD-Operations by electronic mail. OD-Operations responded by electronic mail, dated 30 July 2015, stating that they were uncertain if the project would affect the operation and/or maintenance of any federal project. In a meeting with OD-Operations that occurred on 28 August 2015, they again stated that they were uncertain if the project would affect the operation and/or maintenance of any federal project. No comments were received from any other office.

b. Public Notice Coordination. The formal evaluation process began with publication of a 30-day public notice on 7 October 2014. The comment period for the public notice closed on 7 November 2014. Copies of the public notice were forwarded to concerned Federal, State, and local agencies, organized groups, individuals and navigation districts. The applicant provided responses to comments received during the public notice period. In order to determine if the comments provided by the agencies were adequately addressed by the applicant, the Corps transmitted the applicant's responses to the commenting agencies on 9 January 2015. Additional comments were received from the agencies, and these were transmitted to the applicant. The applicant provided responses to the additional comments received on 27 February 2015. The original public notice was coordinated with, but not limited to, the following entities:

U.S. Fish and Wildlife Service (FWS)
National Marine Fisheries Service (NMFS)
Environmental Protection Agency (EPA)
U.S. Coast Guard (USCG)
Texas Commission on Environmental Quality (TCEQ)
Texas Parks and Wildlife Department (TPWD)
Texas Historical Commission (THC)
Texas Coastal Coordination Council (CCC)
General Land Office (GLO)
National Ocean Survey, Atlantic Marine Center (NOS)
Galveston Bay Foundation (GBF)
Railroad Commission of Texas (RRC)
American Waterways Operators (AWO)
Adjacent Property Owners

c. Response to the Public Notice and Subsequent Coordination.

(1) Federal Agencies.

The FWS responded by letter, dated 3 November 2014, and also in an email dated 26 January 2015. The FWS provided the following comments:

- Over the life of the project, laws governing the protection of wetlands and water resources have changed, and that the value of remaining wetlands on site has greatly increased.
- With regard to the Lake Padre project, their files indicate that when it was severed from the Padre Isles development, there was no accounting of the project's impacts to jurisdictional wetlands.
- In the early 1970s, the resources agencies including the Service were more

focused on water quality issues that developed in canal subdivisions, such as this, not on the losses of and impacts to wetlands that were proposed to be converted to navigable water or filled for development.

- Does not agree that the applicant has avoided and minimized the environmental impacts to the immediate area and recommend that an alternatives analysis be undertaken that addresses the impacts of the project.
- Past mitigation work was for the portion of the project in the area roughly south of Whitecap Boulevard, and not for the entire Lake Padre area.
- Recommends that the area left to be developed should receive a full analysis of the existing resources, the applicant be required to account for impacts to those resources, avoid impacts where possible, mitigate for unavoidable impacts, and a plan be developed by the applicant for addressing future changes in the project area should they need years to complete work on Lake Padre.
- Recommends that existing open water areas be surveyed for the presence of seagrass beds, and locations of seagrass beds mapped be included in the analysis described in the previous comment.
- Requests an explanation of how construction of the canal would result in an increased water exchange efficiency of 3.5. Recommends that a hydrologic analysis is needed to address water quality within the project area and identify structural options which could help maintain acceptable water quality in Lake Padre.
- Recommends against co-mingling the two project areas (Padre Isles and Lake Padre), particularly with a resource swap.
- Comments that the proposed project plans do not contain a cross section for the proposed bridge under Park Road 22. Recommends that a cross section and information regarding vessel size which the bridge would accommodate be provided.
- Recommends that if a project is authorized under SWG-2000- 02743, then the canal and bridge features should be required to be constructed first.
- Recommends that the applicant address the possible elimination of the proposed 10-foot-wide shelves along the bulkheaded areas within the site.
- Recommends an assessment of sand and tidal flats in the project area for the federally listed, threatened piping plover that includes the candidate red knot and the other members of the shorebird guild.
- ---------Below this line are comments from 26 January 2015 ------
- Mitigation is insufficient and is glad that the applicant is considering additional off-site mitigation. The FWS requests to review the final mitigation plan.
- Comments that the FWS maintains that the wetlands on-site are of greater value and importance than they were in years past.
- Requests that the Corps assessment of the hydrologic analysis, particularly,

whether the Corps concurs that the hydrology of the proposed bridge would provide 3.7 times the effective flow capacity compared to the culverts previously proposed.

- Concerned that the construction of the water quality exchange structure.
- Believes there is a fourth alternative for the project, which is to construct the water exchange component and to develop a mitigation plan for impacts to waters of the U.S.
- Requests to see a schedule for construction of the water exchange feature and mitigation.
- Comments that past mitigation was only for a portion of the project.
- Comments that, because this project is entering its third decade, the Corps and the applicant, in coordination with the agencies, settle on an acceptable project design.
- Questions that if the proposed water exchange feature would provide 3.7 times greater flow capacity than the previous plan, would this be enough to bring about the water exchange and water quality improvement to the development areas on both sides of Park Road 22.
- Recommends that seagrass surveys be conducted during warm months when ground biomass is the greatest.
- The drawings of the proposed bridge need to be expanded to include construction corridors, staging, and laydown areas. State that these areas and associated impacts (both temporary and permanent) should be assessed as part of the mitigation plan.
- Requests revised project plans which illustrate the location and configuration of the shallow shelves to be completed.
- Requests that the circulation canal be constructed first.
- States that the piping plover/shorebird survey that was performed was limited to a single day and that this is not sufficient.

The NMFS responded by letter, dated 3 November 2014, stating that because of the current workload, their biologists are unable to adequately investigate this application; therefore, they can take no action on this permit at this time.

The EPA responded by letter, dated 13 November 2014, and also in an email dated 26 January 2015. EPA provided the following comments:

- Comments that the exchange of land between this permit and permit 9009 is not an even exchange.
- Comments that aquatic resources on the site have not remained static and requests an evaluation of impacts and their functions.

- Comments that it is likely that the applicant can further reduce impacts by reconfiguring the project and identifying a LEDPA based on site conditions.
- Comments that while mitigation was required in the early versions of the permit, additional mitigation was not required in subsequent amendments and the majority of jurisdictional resources currently on site would remain unmitigated.
- Comments that the applicant should provide additional information about the higher exchange factor (an increased circulation potential factor by 3.5) provided by the canal.
- Recommends an analysis of various types of possible water exchange features.
- Comments that the project may have substantial and unacceptable impacts to aquatic resources of national importance (ARNI), pursuant to Part IV.3(a) of the 1992 404(q) Memorandum of Agreement.
- ---------Below this line are comments from 26 January 2015 ------
- States that the EPA disagrees that past mitigation compensated for the entirety of the impacts of the project.
- Recommends that the Corps and the applicant pursue a mitigation plan that results in no net loss of wetlands as they currently exist on the site.
- States that they are not opposed to the applicant's proposed mitigation measures, although they note that some of the proposed features only address water quality concerns and not necessarily compensate for habitat and the full suite of wetland functions. Recommend that the applicant continue to explore additional mitigation options, which may include off-site mitigation, and also evaluate ways to avoid and minimize jurisdictional resources on the project site.

(2) Federally Recognized Native American Tribes and Affiliated Groups.

No response was received from any federally recognized Native American Tribes and/or affiliated groups.

(3) State and Local Agencies. TPWD responded by letter, dated 6 November 2014, and also in a letter dated 23 January 2015. TPWD provided the following comments:

- Comments that the water exchange element should be completed prior to any further construction or development of the proposed project.
- Comments that applicant should provide information on the design of the bridges, identified staging and laydown areas for the bridge construction, and timeline for the completion of the project for the resource agencies to review.
- Comments that applicant should remove the surge gate at the confluence of Lake Padre and Packery Channel to widen the entrance canal to its fullest extent

to improve water circulation.

- Comments that the habitats are essentially pristine and unfragmented within the project site area and consist of a mosaic of tidally influenced and adjacent wetlands and native barrier island grassland habitats.
- Comments that the sand flats provide critical habitat for the state and federally listed piping plovers.
- Comments that the applicant should conduct a seagrass survey to determine if seagrasses are present within the proposed dredging areas. If seagrasses are confirmed within the dredging areas, then best management practices including timing of the dredge activities should be considered and impacts should be included in the mitigation plan.
- Comments that the applicant stated the project will impact 122.63 acres of wetlands in the table presented in the public notice, which does not match the information provided in the tables on the overall preliminary survey map.
- Comments that it is unclear as to what mitigation has been completed and was successful.
- Comments that the applicant should revise the total impacts and avoidance table to represent the correct acreage of each habitat.
- Comments that the applicant should provide a detailed mitigation plan to compensate for the losses of above mentioned habitats, wetlands, sand flats and open water habitats for the proposed impacts of 122.63 acres.
- Comments that the applicant should consider using a portion of the project property for in-kind mitigation. TPWD concurs with FWS request that future mitigation sites should be in-kind and as close as possible, geographically, to the impacted area.
- Requests the past monitoring reports for the completed mitigation verifying that the mitigation met the success criteria and the water circulation modeling report for Lake Padre.
- Comments that project plans refer to a marina but do not supply information as to what commercial activities (fueling stations, repair services) would be included that could have an adverse impact on water quality.
- Comments that project plans do not provide details of stormwater runoff and drainage into Lake Padre that could have adverse effects on water quality.
- Requests information related to the connection of Lake Padre to the proposed canal on the west of Park Road 22, and whether storm water runoff into the canal will affect water quality within Lake Padre.
- Recommends that best management practices for both sea turtles and manatees should be used during dredging activities and incorporated into the plan as sea turtles are common inhabitants of Packery Channel and have been observed within Lake Padre.

- ---------Below this line are comments from 23 January 2015 ------
- With regard to the hydrologic analysis, requests an explanation of how the n-value for each of the water exchange feature options was determined.
- States that they agree with the applicant that the bridge and canal are separate entities and that the applicant should construct the canal independent of the City of Corpus Christi's bridge construction timeframe. Also state that they agree with FWS in that the canal should be constructed first.
- States that mitigation should follow the stepwise approach of the 2008 mitigation rule and that there are existing in-kind habitats on-site that can be used for mitigation of the impacted habitats.
- Recommends that the applicant should conduct an official survey for a minimum of nine months, beginning in October and ending in June, to adequately evaluate the presence of piping plover.
- Recommends a seagrass survey be performed during July or August for a more accurate evaluation of seagrass beds within the project site. Also recommends that impacts to seagrass be mitigated at a 3:1 ratio.
- Requests that the Corps confirm that prior mitigation was completed.
- Requests clarification as to why the third shallow shelf was not created.
- Requests to review the design of the fueling station and accompanying amenities (boat ramp, unloading dock, etc.), as well as the plans for the piers and boat slips.
- Requests that they be provided all plans for a complete project, including stormwater management information to assess impacts due to water runoff which would impact water quality in the project site.
- Requests that BMPs for manatees and sea turtles be included.
- States that the mitigation plan should be developed from the 2008 mitigation rule. States that they support the FWS request that future mitigation sites should be in-kind and as close as possible, geographically, to the impacted area, and that the applicant should consider using a portion of the property for in-kind mitigation.

The THC responded to the public notice on 22 October 2014, stating concurrence with the Corps' determination that the permit areas has been so extensively modified that little likelihood exists for the proposed project to impinge on a historic property, even if present within the affected area.

The applicant has stated that the proposed activity complies with Texas' approved Coastal Management Program (CMP) and will be conducted in a manner consistent with such program. The TCEQ will be solely responsible for determining the project's consistency with the goals and policies of the CMP. This determination will accompany

TCEQ's Section 401 certification.

The TCEQ responded by letter, dated 4 November 2014, which contained the following comments:

- If the aquatic resources cannot be avoided, appropriate and practicable steps should be taken to minimize potential adverse impacts. Please provide more information on what options were considered to minimize impacts and why they were eliminated. TCEQ recommends the applicant demonstrate further avoidance and minimization of impacts. If these are or other options are not feasible, please have the applicant explain why.
- Mitigation of impacts is considered for "...all unavoidable adverse impacts that remain after all practicable avoidance and minimization has been completed..." The public notice states that 16 acres of saltwater wetlands and 10 acres of freshwater wetlands have been created. Additional mitigation (shallow water shelves) will be completed along the finger canals once completed. The prior mitigation is insufficient compensation for impacts to 122.632 acres of waters of the U.S. The applicant should perform a functional assessment to determine the appropriate mitigation. Alternatively, the TCEQ recommends that mitigation be provided at a minimum ratio of 1:1 or greater. The applicant should submit a complete Compensatory Mitigation Plan containing all components as set forth in the 2008 Mitigation Rule.
- Please have the applicant provide a copy of the wetland delineation, data sheets and associated photos, and any other ecological details for the proposed impact site that would aid in assessing baseline conditions.
- The public notice states that black mangrove wetlands are found on the property to be developed. Mangrove marshes are considered rare and ecologically significant wetlands. The TCEQ recommends that any impacts to black mangroves be replaced with in-kind mitigation.
- The public notice states that 90.572 acres of wetlands will be impacted by this project. The July 28, 2014 Tier II 401 Questionnaire states that 112.9 acres of wetlands will be impacted by this project. Please have the applicant clarify this discrepancy.
- Please have the applicant demonstrate how on-site water quality will be maintained and protected pre- and post-construction of the project. Please have the applicant review and incorporate the enclosed list of BMPs for canal subdivisions. If these BMPs are not feasible, please have the applicant explain why.
- The public notice contains language that the applicant must obtain a certification from the TCEQ for the effluent or return water from the upland contained dredge

material placement area (DMPA). The public notice does not describe an existing or proposed upland contained DMPA. The July 28, 2014 Tier II 401 Questionnaire states that there will be no spoil areas. In the event that there is an existing or proposed upland contained DMPA, please have the applicant identify its location. The TCEQ requires that the effluent from an upland contained disposal area not exceed a total suspended solids (TSS) concentration of 300 milligrams per liter (mg/l).

(4) Individual and Organized Groups.

Todd Hunter, Texas House of Representatives District 32 State Representative, responded by letter, dated 29 October 2014, stating that approval of this permit is essential to the development and economic growth of the community. The letter stated that the water exchange that would be provided is critical to development of the ecosystem. The letter also stated that the project fits into the city's plans for future growth as well as the needs to further develop the tourism industry. The letter further stated that the community has looked forward to the effective development of these properties as they are essential building blocks for the city's development moving forward. The letter asked that the approval of this permit is considered so that the community can realize the potential benefits that should come from the proposed development.

The Saltwater-fisheries Enhancement Association (SEA) responded by letter, dated 31 October 2014, stating that they are very much in favor of approving this permit. The letter stated that the water exchange the development would provide would be very beneficial to the entire aquatic ecosystem of Padre Island. The letter also stated that the project would improve water quality, improve boater's safety, improve the overall estuary, and improve tourism for the City of Corpus Christi.

The Padre Isles Property Owners Association responded by letter, dated 31 October 2014, stating that they urge approval of this permit application. The letter stated that the canal would improve water quality within the canals in the Padre Isles subdivisions and would improve property owner's access to the Gulf of Mexico. The letter also stated that the new canal and accompanying development which would occur due to the proposed dredging is a part of the city's long-range plan, and that the additional development that would occur would improve the quality of life on Upper Padre Island as well as that for Corpus Christi.

David T. Burkett of the Burkett Law Firm responded by letter, dated 6 November 2014, on behalf of undersigned citizens, stating that they object to proposed project as a whole because the project scope is large and contains many project components which

require different objections to different aspects of the proposed development. The letter included the following comments/concerns:

- The change from the previously permitted culverts to a canal will dramatically increase the water volume and flow from a system of canals that are over 40 years old. The canal will cause a flow of water encompassing all the components of the canals that have been semi-stagnant for 40 years. This means that 40 years of pet waste, human waste, garbage, insecticides, pesticides, and other organic material will flow directly into Lake Padre at a location near existing wetlands and seagrass, which will adversely affect a fertile area for nesting birds as well as excellent habitat for fish.
- The permit asks for permission to expand the existing seawall and fill delicate wetlands and tidal areas. The application does not accurately represent the wetlands and it seeks permission to fill wetlands and the existing edges of the shoreline and seagrass beds of approximately 300 feet. The consideration needs to be made for the destruction of these vital areas.
- No evidence of mitigation has been shown.
- The applicant's claim that a canal will enhance water quality in Lake Padre is false.
- The applicant has not completed the shallow water shelves.

Johnny French responded in an email, dated 3 November 2014, which contained the following comments/concerns:

- Calls for an Environmental Impact Statement (EIS), for public meetings to determine the scope, and to review the draft EIS.
- Large cumulative impact from the proposed action and from nearby projects that are connected to it, including the private Schlitterbahn water park development, the Padre Isles Development, and the Corps' own North Padre Island Storm Damage Remediation and Environmental Restoration Project.
- Piping plover habitat remains within the development proposed in the public notice.
- The public notice does not show the design of the twin span bridge in Park Road 22, nor of the three other bridges proposed for vehicles, pedestrians, and golf carts across the canal to be dredge west of Park Road 22. The bridge would pose a significant hindrance to the safe passage of vehicles using what is North Padre Island's major thoroughfare.
- The public notice does not provide the details of the proposed docks and mooring areas.
- The habitats that would be impacted west of Park Road 22 by canal construction

are not discussed, and the purposes of the fills shown throughout the public notice are not identified in sufficient detail to consider whether all wetland losses would be from water dependent activities.

- It has been so many years since the Lake Padre mitigation plan was approved that changes have occurred to wetland and aquatic habitats, such as the growth of seagrass, and does not believe the flats in the Lake Padre area were ever subjected to a piping plover survey

d. Applicant's Response to Comments. The comment letters received during the public notice comment period were forwarded to the applicant by letter dated 10 November 2014, and by upload using the U. S. Army Aviation and Missile Research Development and Engineering Center's (AMRDEC) file transfer website on 9 January 2015. Comments from the EPA were forwarded to the applicant by email on 14 November 2014 and by upload using AMRDEC's file transfer website on 9 January 2015. The applicant responded to EPA's comments by letter, dated 5 December 2014, and by letter dated 27 February 2015. The applicant responded to all other comments by letter dated 17 December 2014, and by letter dated 27 February 2015. The applicant prepared the following responses raised in comment letters. The responses are arranged by topic:

Aquatic Resources Impacts, Avoidance and Minimization, and Mitigation:

In response to comments received from the FWS and EPA that wetland values and functions have greatly increased over time, the applicant responded stating that the wetlands on the project site have long been scheduled for conversion to uplands, and that the wetlands that exist on-site could have been converted to uplands many years past. The applicant went on to state that the wetlands that still exist on the project site are the result of multiple prior conversations between the applicant and the Corps, during which it was agreed that the wetlands would be left undisturbed until the time that the water exchange feature (now proposed as a canal) could be delivered and project construction resumed. The applicant stated that they have adhered to these prior communications with the Corps, following the direction to only fill wetlands as necessary, in order to leave wetlands in their natural state and available to the environment for longer periods of time. The applicant stated that had they known that additional demands would be placed on the project as a result of leaving these wetlands undisturbed, they would have long ago converted the wetlands to uplands. The applicant stated that they respectfully disagree that the value of the remaining wetlands has greatly increased as there are large numbers of this type of wetland in the region. Additionally, they stated that mitigation over the years has increased and many wetlands have been protected.

In response to a comment received from the FWS stating that their files indicate that, when the project was severed from the Padre Isles development, there was no accounting of the project's impacts to jurisdictional wetlands, the applicant stated that it is unclear if the FWS is talking solely about the numerical acreage of wetlands that ended up on each project area. The applicant notes that in the Statement of Findings for 17760(01) in 1986, when the Lake Padre project was severed from the Padre Isles development, there was a statement discussing the existence of 36 acres fresh/brackish marsh and 35.1 acres salt marsh.

In response to the comment received from the FWS stating that, in earlier decades, the resource agencies, including the FWS, were more focused on water quality issues that developed in canal subdivisions, and not on the losses of and impacts to wetlands, the applicant stated that they agree water quality has been a pivotal feature of the mitigation for this permit, and that the reason for the requested amendment is to create a canal as the water exchange feature which would improve circulation by 3.7 times, as compared to the previously authorized culvert. The applicant stated that they have adhered to the agencies' requests to focus on the water quality component of the mitigation, and have been working with multiple agencies to develop this canal feature for many years. The applicant also stated that, at the same time, they and the previous permit holder have proposed mitigation of wetland impacts since the Lake Padre project was severed from the Padre Isles development in 1986. The applicant stated that permit 17760(01) proposed wetland mitigation and that both water quality issues and wetland mitigation have been important aspects of the permit's history. The applicant stated that they are currently working on alternate mitigation options for further supplemental mitigation.

In response to comments received from EPA recommending a new jurisdictional determination, the applicant stated that a new jurisdictional determination had been completed. In response to EPA's comment that the project may have impacts to ARNI, the applicant stated that they do not believe aquatic resources in the project area constitute an ARNI under existing guidance.

In response to TCEQ's request for a copy of the wetland delineation, the applicant provided the delineation data sheets.

In response to an FWS comment stating that past mitigation work was not for the entire Lake Padre area, the applicant stated that they disagree, and that past mitigation work was for the entirety of the project area. The applicant provided the history of the project which included mitigation aspects.

In response to EPA's comment that additional mitigation was not required in permit amendments that occurred after earlier versions of the permit, and that the majority of

jurisdictional resources currently on site would remain unmitigated, the applicant responded that the permit history demonstrates substantial work has been completed on this project, and that prior mitigation work has been completed. The applicant went on to state that additional mitigation is being proposed.

A comment was received from FWS stating that the area left to be developed should receive a full analysis of existing resources, and that the applicant be required to account for impacts to those resources, avoid impacts where possible, mitigate for unavoidable impacts, and develop a plan for addressing future changes in the project area should they need years to complete work on Lake Padre. Similar comments were received from TPWD, EPA, and TCEQ regarding the need for accounting of existing aquatic resources and that impacts to aquatic resources are mitigated appropriately. It was also recommended that the applicant explore options of minimizing impacts at the project site and that an in-kind mitigation be developed, either on-site or off-site. The applicant responded to these recommendations by stating that they had their consultants undertake an analysis of the incremental increase in acreage of jurisdictional wetlands currently on-site (2014) as compared to the wetlands that existed on-site in 2002. The applicant went on to state that the analysis showed that there has been an increase of approximately 33 acres of jurisdictional wetlands on the project site since the 2002 wetlands assessment. The applicant stated that they would work with the Corps to discuss supplemental mitigation options, and would explore on-site and off-site options.

In response to TPWD's request for copies of monitoring reports for past mitigation and that the Corps confirm that prior mitigation was completed, the applicant responded to state that past mitigation was completed by the prior permit holder and that they are not aware of such reports. The applicant stated that prior mitigation had been determined by the Corps to have been completed. A related comment was received from the Burkett Law Firm, stating that no evidence of mitigation has been shown. The applicant responded to state that completion of past mitigation has been documented in the permit's history and the related Corps' Statement of Findings.

Comments regarding the shallow water shelves were received from FWS, TPWD, and the Burkett Law Firm. FWS requested revised project plans so show the location and configuration of the shallow water shelves. The applicant responded to state that nothing concerning the shallow water shelves has been eliminated and that revised plans would be submitted. The Burkett Law Firm and TPWD commented that the shallow water shelves had not been completed; the applicant responded to state that the shelves are to be completed with the project's completion.

Requests for Alternatives Analysis: In response to the comment received from FWS

recommending an alternatives analysis be undertaken, the applicant stated that there are three alternatives: 1) to grant the request for extension and also the amendment as proposed; 2) to grant the extension of time without the amendment; or 3) to not grant the extension. The applicant stated that the first alternative is their preferred alternative and that it is not economically feasible to abandon this project and explore alternative locations because the project is partially completed. The applicant went on to state that the preferred alternative will significantly improve water quality by increasing circulation to the canals both within Lake Padre Subdivision and to the west side of Park Road 22.

In response to the FWS stating that they still believe there is a fourth alternative, which would be to construct the water exchange feature and develop a mitigation plan, the applicant stated that they do not view this concept as being in conflict with the three alternatives previously discussed. The applicant stated that work on a mitigation plan is ongoing, and the construction of the water exchange feature will take place after the permit is renewed.

In response to EPA's comment that the applicant can further reduce impacts by reconfiguring the project and identify a LEDPA based on project site conditions, the applicant stated that the footprint of the project has long been established and they have chosen the LEDPA based on the permit history and viable alternatives.

Seagrasses: In response to recommendations from TPWD and FWS, the applicant retained consultants to conduct a seagrass survey. The applicant stated that they would adhere to BMPs for dredging to the extent practicable, per TPWD's request. As the seagrass surveys were conducted during the winter (December), FWS and TPWD recommended that this survey be conducted during the warmer summer months. The applicant stated that they hope to be undertaking project construction during the warm months of the year and would have seagrass surveys performed during that time, if possible.

Regarding TPWD's comment that impacts to seagrass should be mitigated at a 3:1 ratio, the applicant stated that they are seeking to establish seagrass in the area. They expect that seagrasses would propagate naturally; if they do not, then they will have seagrasses planted.

Proposed Canal, Water Exchange, and Water Quality: In response to comments requesting additional information about the higher water exchange the proposed canal would provide as compared to the previously proposed culvert feature, the applicant stated that they retained a civil engineer with a specialty in hydraulics and hydrology to conduct an analysis for comparison of the two features. The engineer concluded the canal would provide approximately 3.7 times the effective flow capacity than the

culverts. The applicant stated that the proposed canal feature is an improvement for water circulation within the project area and for the canals on the west side of Park Road 22, and would promote the movement of water and minimize stagnant pooling.

In response to comments regarding the timing of canal construction, the applicant responded that they are ready to initiate its construction as soon as the permit amendment is granted and that it is among the first items to be constructed. The applicant stated that they would like the canal constructed as reasonably soon as possible as they realize the important role it will play for water quality.

In response to TPWD's comment that the applicant should remove the surge gate at the confluence of Lake Padre and Packery Channel and widen the opening to its fullest extent in order to improve water circulation, the applicant stated that they agree this would enhance water circulation. The applicant stated that they would widen the opening from 50 feet to 85 feet and would coordinate this with the Corps.

In response to TPWD's comment that no information was included regarding fueling stations or repair services that would be associated with the proposed marina and could potentially have an adverse impact on water quality, the applicant stated that there will be fueling stations associated with the marina which will employ BMPs to avoid adverse impacts on water quality.

In response to comments from TPWD regarding adverse effects to water quality that could occur from stormwater runoff, the applicant responded that stormwater management will be undertaken consistent with the requirements of the City of Corpus Christi.

In response to a comment received from TPWD stating that they want to see all plans for the completed project, including stormwater plans, so that they may be assessed for impacts to water quality, the applicant responded that this information will be provided to the Corps when it is available and ready for submission.

TCEQ provided a list of BMPs for canal subdivisions that are designed to protect and maintain water quality. TCEQ asked that the applicant review the list, and provide an explanation if the applicant found any of the listed BMPs to not be feasible. The applicant responded that the BMP of using a centralized storm water treatment feature because it would require the City of Corpus Christi to install a new public utility. The applicant also responded that the BMP regarding canal widths being a minimum of 100 feet is not feasible. The applicant responded that all other listed BMPs are feasible and, if the TCEQ wants a site for the monitoring of dissolved oxygen, the applicant would add this to the existing plans.

Regarding the comment from TCEQ that the applicant identify the location of any existing or proposed upland DMPAs, and stated that TCEQ requires that effluent from such areas not exceed a TSS concentration of 300 mg/l, the applicant responded that all dredged material will remain on site and will be placed in areas to be filled in order to achieve base flood elevation. The applicant went on to state that it is possible that a small amount of hydraulic excavation may be required, and at that time, the applicant would identify the material placement area and would design it to meet BMPs.

Threatened and Endangered Species: In response to comments received that the survey conducted for the federally listed piping plover and red knot were not sufficient as the survey was limited to a single day, the applicant stated that they would discuss the need for future surveys with the Corps. The applicant stated that the project area is not designated critical habitat and suitable piping plover habitat exists in many surrounding areas of the coast.

In response to comments received stating that BMPs be included for manatees and sea turtles, the applicant stated that they agree that BMPs are important during dredging and construction activities to protect sea turtles, and that they are open to the concept of BMPs being included in the permit to protect sea turtles and manatees.

e. Corps's Consideration of Substantive Comments.

Aquatic Resources Impacts, Avoidance and Minimization, and Mitigation: The Corps believes that the applicant has adequately addressed comments that were received regarding these topics. The applicant has demonstrated that they have avoided and minimized impacts to aquatic resources to the extent practicable. The applicant has demonstrated that the changes in the design of water circulation features (i.e., construction of a canal instead of culverts, and widening the entrance at Packery Channel) would improve water circulation within the project area, thus minimizing impacts to aquatic resources. The Corps also believes that the applicant's current mitigation plan, developed to compensate for impacts to the additional 15 acres of jurisdictional freshwater wetlands that have established naturally within the project site since 1986, is adequate. Regarding comments received that impacts to black mangroves should be compensated for with in-kind mitigation, the Corps has determined that there will be no new impacts to black mangroves and, therefore, no mitigation is required.

The public notice contained an error which overestimated the impacts to aquatic resources. There are only 15 acres of new wetlands that exist within the project footprint which will be impacted. The 2014 wetland delineation should have been

compared against the 1986 site map and permitted plans.

Requests for Alternatives Analysis: The Corps believes the applicant has adequately addressed the comments received regarding this topic. The Corps believes that a new alternatives analysis is unwarranted and that the preferred alternative is the LEDPA.

Seagrasses: The Corps believes that the applicant responded adequately to the comments received regarding the need for seagrass surveys to be performed during the warmer months as the applicant stated that they would be willing to have surveys conducted during that time of year, if possible. The Corps will request that the applicant conduct additional seagrass surveys during the growing season.

The Corps believes that the applicant responded adequately to TPWD's comment stating that impacts to seagrass should be mitigated at a 3:1 ratio. The applicant stated that they are seeking to establish seagrass in the area and that they expect that seagrasses will propagate naturally, and if they do not, then they will have it planted. The Corps will request that the applicant transplant seagrasses from areas to be dredged to areas with potential to support seagrasses, should seagrasses not establish naturally within these areas.

Proposed Canal, Water Exchange, and Water Quality: The Corps believes the applicant has responded adequately to comments received requesting information on the proposed canal providing a higher water exchange rate as compared to the previously proposed culvert feature. The Corps agrees that the proposed canal will result in improved circulation and would thus result in higher water quality within the project site than the previously authorized culvert would have provided.

The Corps believes the applicant responded adequately to comments regarding the need for the canal to be constructed prior to the commencement of other project work, in order to provide water exchange between the east and west sides of Park Road 22. The applicant stated that they are ready to initiate construction of the canal as soon as the permit amendment is granted, and that it is among the first items to be constructed. The Corps will add a special condition to the permit authorization requiring that construction of the canal feature be a priority.

The Corps believes that that the applicant responded adequately to the recommendation that that the surge gate at the confluence of Lake Padre and Packery Channel be removed, and the opening be widened to its fullest extent in order to improve water circulation. The applicant agreed to widen the opening from 50 feet to 85 feet.

The Corps believes that that the applicant responded adequately to comments regarding potential adverse effects to water quality that could occur from stormwater runoff, as stormwater management will be undertaken by the applicant to be consistent with the requirements of the City of Corpus Christi.

The Corps believes that that the applicant responded adequately to TCEQ's request that recommended BMPs for canal subdivisions be followed. While the applicant explained that it would not be feasible to follow two of the listed BMPs, the Corps does not believe that these are requirements but are rather recommendations.

The Corps believes that the applicant responded adequately to TCEQ's request that the applicant identify the location of any existing or proposed upland DMPAs, and that effluent from such areas not exceed a TSS concentration of 300 mg/l. The Corps also believes that the applicant has adequately addressed TCEQ's concerns regarding water quality as the applicant has included dissolved oxygen monitoring in the project plans. The applicant coordinated the proposed monitoring plan with the TCEQ. Water quality monitoring is outside of the Corps's control and responsibility; therefore, the applicant has stated that results of monitoring will be coordinated with the TCEQ.

Threatened and Endangered Species: The Corps believes the survey conducted to assess sand and tidal flats in the project area for the federally listed, threatened piping plover and red knot was a good faith effort. However, the applicant did not mention in their response that red knot presence was assessed during the survey. At the time the survey was conducted in December 2014, the red knot was listed as a candidate species. It was expected that it was to be listed as a threatened species in 2015. The red knot was listed as a threatened species in January 2015. The Corps does not believe that impacts to these species will occur. A special condition will be added to the permit authorization requiring that on-site monitors be present during the wintering months of both species while construction activities are occurring.

Regarding comments recommending that BMPs be used to protect the West Indian manatee and sea turtles during dredging activities, the Corps believes that the applicant's response is adequate in that they agreed to the use of such BMPs. A special condition requiring the use of these BMPs will be added to the permit authorization.

Non-substantive Comments: Other comments were received that the Corps believes to be non-substantive.

Regarding TPWD's comment that no information was included regarding fueling stations or repair services that would be associated with the proposed marina, the

Corps believes these items are outside of the Corps's jurisdictional authority. However, the Corps believes applicant's response was adequate.

Regarding a comment received from Johnny French requesting an EIS be prepared for this project, the Corps does not agree the project impacts warrant preparation of an EIS.

Regarding a comment received from Johnny French stating that there is a cumulative impact from the proposed project and from nearby projects, the Corps has addressed the cumulative impacts of this project in prior decision documents, as well as in the March 2003 North Padre Island Storm Damage Reduction and Environmental Restoration Project EIS.

Only comments stating support for the project were received from Texas House of Representatives District 32 State Representative, Todd Hunter, as well as SEA and the Padre Isle Property Association. The applicant responded to each comment stating that they appreciate the positive comments received.

11. Compensation and Other Mitigation Actions.

a. Compensatory Mitigation.

(1) Is compensatory mitigation required? ☒ Yes ☐ No

(2) Is the impact in the service area of an approved mitigation bank?
☐ Yes ☒ No

(i) Does the mitigation bank have appropriate number and resource type of credits available? ☐ Yes ☒ No

(3) Is the impact in the service area of an approved in-lieu fee program?
☐ Yes ☒No

(i) Does the in-lieu fee program have appropriate number and resource type of credits available? ☐ Yes ☒ No

(4) Check the selected compensatory mitigation option(s):
☐ mitigation bank credits
☐ in-lieu fee program credits
☒ permittee-responsible mitigation under a watershed approach
☐ permittee-responsible mitigation, on-site and in-kind
☐ permittee-responsible mitigation, off-site and out-of-kind

(5) If a selected compensatory mitigation option deviates from the order of the options presented in 33 CFR 332.3(b)(2)-(6), explain why the selected compensatory mitigation option is environmentally preferable. Address the criteria provided in 33 CFR 332.3(a)(1) (i.e., the likelihood for ecological success and sustainability, the location of the compensation site relative to the impact site and their significance within the watershed, and the costs of the compensatory mitigation project):

(6) Other Mitigation Actions. N/A

12. Determinations.

a. Public Hearing. During the public interest review, we received two requests to hold a public hearing for the proposed project. The intent of a public hearing is to solicit information or evidence that might assist us in the evaluation of this permit action. Based on our review of all the information submitted during the public notice comment period, and subsequent evaluation process, we have determined that there is sufficient information to render a decision on this permit request. It is unlikely that any new information would be gained by holding a public hearing. Therefore, a public hearing will not be held.

b. Section 176(c) of the Clean Air Act General Conformity Rule Review: The proposed project has been analyzed for conformity applicability pursuant to regulations implementing Section 176(c) of the Clean Air Act. It has been determined the activities proposed under this permit will not exceed *de minimis* levels of direct emissions of a criteria pollutant or its precursors and are exempted by 40 CFR PART 93.153. Any later indirect emissions are generally not within the Corps continuing program responsibility and generally cannot be practicably controlled by the Corps. For these reasons, a conformity determination is not required for this individual permit.

c. Relevant Presidential Executive Orders.

(1) EO 13175, Consultation with Indian Tribes, Alaska Natives, and Native Hawaiians. Through our coordination with the federally recognized Native American Tribes, affiliated groups, and Corps staff archaeologist we have determined that this action has no substantial direct effect on one or more Indian Tribes.

(2) EO 11988, Floodplain Management. The proposed project is minor and will not have long and/or short-term adverse impacts associated with the occupancy and modification of floodplains.

(3) EO 12898, Environmental Justice. In accordance with Title III of the Civil Right Act of 1964 and EO 12898, it has been determined that the project would not directly or through contractual or other arrangements, use criteria, methods, or practices that discriminate on the basis of race, color, or national origin nor would it have a disproportionate effect on minority or low-income communities.

(4) EO 13112, Invasive Species. There were no invasive species issues involved.

(5) EO 13212 and 13302, Energy Supply and Availability. The proposed project is not one that will increase the production, transmission, or conservation of energy, or strengthen pipeline safety.

d. The following Special Conditions will be added to the Authorization:

1. The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. When structures or work authorized by this permit are determined by the District Engineer to have become abandoned, obstructive to navigation, or cease to be used for the purpose for which they were permitted, such structures or other work must be removed, the area cleared of all obstructions, and written notice given to the Corps of Engineers, Galveston District, Regulatory Division, within 30 days of completion.

3. The permittee must install and maintain, at the permittee's expense, any safety lights, signs and signals required by U.S. Coast Guard, through regulations or otherwise, on the permittee's fixed structures. To receive a U.S. Coast Guard Private Aids to Navigation marking determination, at no later than 30 days prior to installation of any fixed structures in navigable waters and/or prior to installation of any floating private aids to navigation, you are required to contact the Eight Coast Guard District (dpw), 500 Poydras St. Suite 1230, New Orleans, LA 70130, (504) 671-2328 or via email to: D8oanPATON@uscg.mil. For general information related to Private Aids to Navigation please visit the Eight

Coast Guard District web site at:
http://www.uscg.mil/d8/waterways/PATON.Home.asp

4. The permittee will notify the U.S. Army Corps of Engineers, Galveston District, Chief, Compliance Section, Galveston Regulatory Branch **OR** Corpus Christi Regulatory Field Office, in writing, the date in which construction (i.e. fill or structures) is to begin in the jurisdictional areas. The Corps must receive this notification prior to start of construction in jurisdictional areas. The start of construction within jurisdictional areas will trigger the mitigation requirements.

5. All construction (site preparation, planting, etc.) of the Mitigation Site must be complete within 12 months after the start of construction within jurisdictional areas. Monitoring and maintenance of the Mitigation Site will proceed according to the mitigation plan and monitoring parameters.

6. To compensate for the loss of wetland functions and values, the permittee is required to enhance and preserve 15 acres of wetlands.

7. For the mitigation to be considered complete, all mitigation success criteria, as indicated in the Mitigation Plan included in Attachment A must be achieved.

8. It is the permittee's responsibly to complete the required compensatory mitigation, as set forth in the permit conditions. The mitigation requirement will not be considered fulfilled until the permittee has demonstrated compensatory mitigation project success and has received written verification of that success form the Corps.

9. Prior to the performance of hydraulic dredging, the permittee will obtain a Section 401-water quality certification from the TCEQ for the effluent or return water from the upland dredge material placement areas to be used. The permittee will submit a copy of the Section 401-certification to the Corps of Engineers Chief of Evaluation Section, Regulatory Branch, Galveston, Texas, prior to performing hydraulic dredging.

10. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing threatened and endangered species protected under the Endangered Species Act of 1973.

11. The permittee shall instruct all personnel associated with the project of the potential presence of threatened or endangered species and the need to avoid collisions with sea turtles and manatees. All construction personnel are

responsible for observing water-related activities for the presence of these species.

12. The permittee shall instruct all personnel associated with the project of the potential presence of threatened or endangered species and the need to avoid piping plovers and red knots. All construction personnel are responsible for observing land-related activities for the presence of these species.

13. If threatened or endangered species are observed within 100 yards of the active daily construction activities, all appropriate precautions shall be implemented to ensure their protection. These precautions shall include, but are not limited to, cessation of operation of any moving equipment closer than 50 feet of the species. Operation of any mechanical construction equipment shall cease immediately if a protected species is seen within a 50 foot radius of the equipment. Activities may not resume until the protected species has departed the project area of its own volition.

14. The permittee will finish all construction associated with the marina's entrance to Packery Channel and the canal opening under Park Road 22 prior to the expiration of this extension of time.

Rationale: In accordance with 33 CFR 325.4 Conditioning of permits, the district engineer will add special conditions to Department of Army permits when such conditions are necessary to satisfy legal requirements or to otherwise satisfy the public interest requirements.

The above special conditions are required for fulfillment of the public interest requirements specified according to 33 CFR 320.4(o)(3) Navigation, 33 CFR 332 Compensatory Mitigation for Losses of Aquatic Recourses, 404(b)(1) Guidelines, and Endangered Species Act.

e. Findings of No Significant Impact. There have been no significant environmental effects identified resulting from the proposed work. The impact of this proposed activity on aspects affecting the quality of the human environment has been evaluated and it is determined that this action does not require an EIS.

f. Compliance with 404(b)(1) guidelines. We have reviewed and evaluated, in light of the overall public interest, the documents and factors concerning this permit application, as well as the stated views of other interested Federal and non-Federal agencies and the concerned public, relative to the proposed work in navigable waters of the United States. This evaluation is in accordance with the guidelines contained in 40

PERMIT APPLICATION – SWG-2000-02743
SUBJECT: Department of the Army Environmental Assessment and Statement of Findings for the Above – Numbered Permit Application

C.F.R. 230 pursuant to Section 404(b)(1) of the Clean Water Act. We have determined that the proposed discharge complies with the 404(b)(1) guidelines.

g. Public Interest. We find that issuance of a Department of the Army permit is not contrary to the public interest.

FOR THE COMMANDER:

PREPARED BY:

Date: 6 October 2015

Mark Garza
Regulatory Specialist

REVIEWED BY:

Date: 7 Oct 15

Kristi N. McMillan
Leader, Central Evaluation Unit
Regulatory Division, Galveston District

APPROVED BY:

Date: 7 Oct 15

FOR Robert W. Heinly
Chief, Policy Analysis Branch
Regulatory Division, Galveston District

DEPARTMENT OF THE ARMY PERMIT

Permittee Gulf Shores Joint Venture

Permit No. SWG-2000-02743

Issuing Office Galveston District

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description: To retain and complete construction of the previously authorized, and partially completed, residential and commercial Lake Padre Subdivision. The project will be conducted in accordance with the attached plans, in 15 sheets. Mitigation will be conducted in accordance with the Mitigation Plan, attached as Attachment A, in 16 sheets.

Project Location: The project site is located in wetlands, sand flats, and tidal waters, located southeast of the intersection of Park Road 22 and State Highway 361, on North Padre Island, in Corpus Christi, Nueces County, Texas.

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on 31 December 2020. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.

2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

1. The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. When structures or work authorized by this permit are determined by the District Engineer to have become abandoned, obstructive to navigation, or cease to be used for the purpose for which they were permitted, such structures or other work must be removed, the area cleared of all obstructions, and written notice given to the Corps of Engineers, Galveston District, Regulatory Division, within 30 days of completion.

3. The permittee must install and maintain, at the permittee's expense, any safety lights, signs and signals required by U.S. Coast Guard, through regulations or otherwise, on the permittee's fixed structures. To receive a U.S. Coast Guard Private Aids to Navigation marking determination, at no later than 30 days prior to installation of any fixed structures in navigable waters and/or prior to installation of any floating private aids to navigation, you are required to contact the Eighth Coast Guard District (dpw), 500 Poydras St., Suite 1230, New Orleans, LA 70130, (504) 671-2328 or via email to: D8oanPATON@uscg.mil. For general information related to Private Aids to Navigation please visit the Eighth Coast Guard District web site at: http://www.uscg.mil/d8/waterways/PATON.Home.asp

4. The permittee will notify the U.S. Army Corps of Engineers, Galveston District, Chief, Compliance Branch, Galveston Regulatory Division **OR** Corpus Christi Regulatory Field Office, in writing, the date in which construction (i.e. fill or structures) is to begin in the jurisdictional areas. The Corps must receive this notification prior to start of construction in jurisdictional areas. The start of construction within jurisdictional areas will trigger the mitigation requirements.

5. All construction (site preparation, planting, etc.) of the Mitigation Site must be complete within 12 months after the start of construction within jurisdictional areas. Monitoring and maintenance of the Mitigation Site will proceed according to the Mitigation Plan and monitoring parameters.

6. To compensate for the loss of wetland functions and values, the permittee is required to enhance and preserve 15 acres of wetlands.

7. For the mitigation to be considered complete, all mitigation success criteria, as indicated in the Mitigation Plan included in Attachment A must be achieved.

8. It is the permittee's responsibility to complete the required compensatory mitigation, as set forth in the permit conditions. The mitigation requirement will not be considered fulfilled until the permittee has demonstrated compensatory mitigation project success and has received written verification of that success from the Corps.

9. Prior to the performance of hydraulic dredging, the permittee will obtain a Section 401 water quality certification from the TCEQ for the effluent or return water from the upland dredge material placement areas to be used. The permittee will submit a copy of the Section 401 certification to the Corps of Engineers, Chief of Evaluation Branch, Regulatory Division, Galveston, Texas, prior to performing hydraulic dredging.

10. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing threatened and endangered species protected under the Endangered Species Act of 1973.

11. The permittee shall instruct all personnel associated with the project of the potential presence of threatened or endangered species and the need to avoid collisions with sea turtles and manatees. All construction personnel are responsible for observing water-related activities for the presence of these species.

12. The permittee shall instruct all personnel associated with the project of the potential presence of threatened or endangered species and the need to avoid piping plovers and red knots. All construction personnel are responsible for observing land-related activities for the presence of these species.

13. If threatened or endangered species are observed within 100 yards of the active daily construction activities, all appropriate precautions shall be implemented to ensure their protection. These precautions shall include, but are not limited to, cessation of operation of any moving equipment closer than 50 feet of the species. Operation of any mechanical construction equipment shall cease immediately if a protected species is seen within a 50-foot radius of the equipment. Activities may not resume until the protected species has departed the project area of its own volition.

14. The permittee will finish all construction associated with the marina's entrance to Packery Channel and the canal opening under Park Road 22 prior to the expiration of this extension of time.

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

(X) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).

(X) Section 404 of the Clean Water Act (33 U.S.C. 1344).

( ) Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General Condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

Mary S. Conner — Oct. 29, 2015

(PERMITTEE) — *(DATE)*

GULF SHORES JOINT VENTURE

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

10/29/15

(DISTRICT ENGINEER) — *(DATE)*

ROBERT W. HEINLY
CHIEF, POLICY ANALYSIS BRANCH
REGULATORY DIVISION, GALVESTON DISTRICT
FOR COLONEL RICHARD P. PANNELL

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

(TRANSFEREE – Typed/Printed Name) — *(DATE)*

(TRANSFEREE - Signature) — *(Mailing Address)*