

DRAFT ENVIRONMENTAL ASSESSMENT

MISSISSIPPI RIVER AND TRIBUTARIES, MISSISSIPPI RIVER LEVEES

Pointe Coupee Relief Wells

EA #522

POINTE COUPEE PARISH, LOUISIANA



**U.S. Army Corps of Engineers
Mississippi Valley Division
Regional Planning and Environment Division South
New Orleans District**

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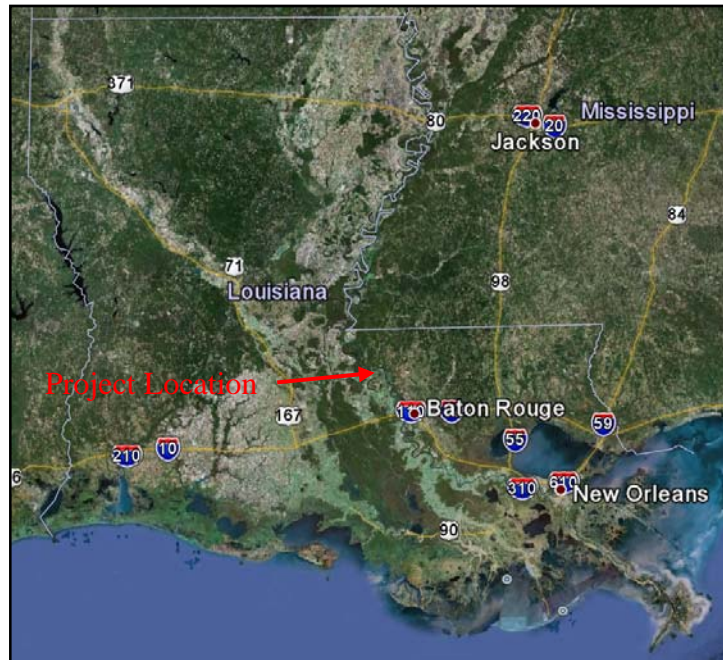
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1. INTRODUCTION.

1.0. The U.S. Army Corps of Engineers (USACE), Mississippi Valley Division, Regional Planning and Environmental Division South, has prepared this Environmental Assessment (EA) for the New Orleans District (MVN) to evaluate the potential impacts of installing approximately 59 passive relief wells and pumps on the east bank of the Mississippi River mainline levee in Pointe Coupee Parish, Louisiana (Figure 1). This EA has been prepared in accordance with the National Environmental Policy Act of 1969 and the Council on Environmental Quality's Regulations (40 CFR 1500-1508), as reflected in the USACE Engineering Regulation ER 200-2-2. This EA provides sufficient information on the potential adverse and beneficial environmental effects to allow the District Commander, USACE, MVN to make an informed decision on the appropriateness of an Environmental Impact Statement or a Finding of No Significant Impact.

Figure 1: Vicinity Map



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1.1. PROPOSED ACTION.

1.1.1. The proposed action consists of placement of fifty nine (59) passive relief wells along the existing levee near Pointe Coupee. Specifically, the project area was broken down into 8 reaches for testing and design. Upon geotechnical analysis it was determined that only 4 of the 8 reaches required remedial action (3, 4, 5, & 7a). Each of these 4 reaches are functionally different than the rest.

The first reach requiring action is reach 3. This reach is designed with seven (7) relief wells placed between the road and the levee with a spacing of 150 feet between each well. The expected flow in this reach is 5.7 cubic feet per second (cfs) with the combined flow of the 7 wells. A temporary pump will be installed during high water events to pump the well discharge over the levee and back into the river. This proposed action will not require any additional right-of-way.

In reach 4, thirty three (33) wells will be placed land side of the road with a spacing of 75 feet between each well. The expected flow in this reach is 8.1 cfs with the combined flow of the 33 wells. An above ground drainage system will be constructed to convey the discharge from the wells to the low lying area to the east of the reach. This action will require relocation of two public utilities adjacent to the road. A 40 foot utility corridor has been identified land side of the drainage ditches for relocation of the utilities. Dikes will be placed around the low area (fresh marsh) to increase capacity and guide water toward the lateral parish drainage ditch (ditch 1). The existing ditch will be improved to convey the water away from the existing levee. The ditch will be fenced off to prevent cattle from entering and degrading the banks. A new crossing will be provided to allow access for vehicles and cattle to both side of the ditch. Existing crossings will be improved. Channel modification and improvements will continue approximately 7,600 feet at which point the flow will split and drain into a large parish drainage ditch (Bayou Pond). The flow will split approximately 70% heading westward with clearing and snagging of approximately 3,900 feet being the main element of work with replacement of culverts at two crossing locations. The remaining 30% will head eastward with the main element of work being clearing and snagging of approximately 2,700 feet with replacement of culverts at 3 crossings. Also, the ditch bottom will be graded to eliminate any high spots. Reach 4 will require a total of 30.23 acres of real estate acquisition (4.4 acres permanent R/W, 23.43 acres drainage easement, and a 2.4 acre utility corridor.

Reach 5 is similar to reach 3. This reach is designed with four (4) relief wells placed between the road and the levee with a spacing of 150 feet between each well. The expected flow in this reach is 3.8 cfs with the combined flow of the 4 wells. A temporary pump will be installed during high water events to pump the well discharge over the levee and back into the river. This proposed action will not require any additional right-of-way.

Reach 7a requires fifteen (15) wells be placed between the road and the levee with a spacing of 150' between each well. The expected flow in this reach is 9.6 cfs with the combined flow of the 15 wells. Two temporary pumps will be installed during high water events to pump the well

discharge over the levee and back into the river. The existing ditches will be improved to convey discharge to the temporary pump locations. This will not impact the normal function of existing drainage. This proposed action will not require any additional right-of-way.



Figure 2: Typical Relief Well - The typical relief well has a diameter of 8 inches and stands approximately 20 inches above ground. A concrete pad may or may not be present to direct flow from the well.

1.2. PURPOSE AND NEED FOR THE PROPOSED ACTION.

1.2.1. The purpose of the proposed action is to continue providing flood risk reduction resulting from Mississippi River high water events to valuable urban land uses including, but not limited to, residential, commercial, and agricultural resources located on the right descending bank of river mile 276 in Pointe Coupee Parish, Louisiana. The proposed project would manage seepage flow to improve levee stability by designing seepage control measures for four project reaches between stations 2027+50 and 2103+00.

1.2.2. The Mississippi River Levee (MRL) continues to serve as an integral part of reducing the risk to communities from Mississippi River high water events.

1.3. AUTHORITY.

1.3.1. The Congressional authority for the construction of the “Mississippi River and Tributaries (MR&T)” project is contained in the Flood Control Acts of 1928, as amended, 1936, 1938, 1941, 1946, 1950, 1954, 1962, 1965 and 1968 and the Water Resources Development Act (WRDA) of 1986. The Flood Control Act of 1928 committed the Federal government to a definite program of flood control and authorized general and progressive channel stabilization and river regulation from Cairo, Illinois to Head of Passes, Louisiana.

1.4. PRIOR REPORTS.

1.4.1. Operation and maintenance of the Mississippi River levees, including repairs, is covered by the “*Mississippi River and Tributaries, Mississippi River Levees and Channel Improvement*” Final Environmental Impact Statement (FEIS) 1976. The Statement of Findings was signed on April 4, 1976.

1.4.2. “*Flood Control, Mississippi River and Tributaries, Mississippi River Mainline Levees, Enlargement and Seepage Control, Cape Girardeau, Missouri to Head of Passes, Louisiana*” Final Supplemental Environmental Impact Statement (SEIS) 1998. This SEIS was prepared to report the findings of studies conducted for the MR&T project in the alluvial valley between Cape Girardeau, Missouri and Head of Passes, Louisiana based on environmental laws and regulations passed since 1976 to cover construction of all remaining Mississippi River mainline levees and seepage control. A Record of Decision was signed on October 5, 1998.

1.5. NEPA SCOPING.

1.5.1. The comprehensive MR&T project has four major elements: levees and floodwalls to contain flood flows; floodways to pass excess flows past critical Mississippi River reaches; channel improvement and stabilization to provide efficient navigation alignment, increased flood-carrying capacity and protection of the levee system; and tributary basin improvements. The MR&T project in the alluvial valley between Cape Girardeau, Missouri, and Head of Passes, Louisiana, provides protection from floods by means of levees, floodwalls, floodways, reservoirs (in Yazoo and St. Francis basins), bank stabilization and channel improvements in and along the river and its tributaries and outlets insofar as affected by backwater of the Mississippi River.

1.5.2. Historically, the Mississippi River Levees feature has been under construction since 1928 and the engineering and construction capability exists to complete the project in the year 2020. When completed, approximately 35,000 square miles will be protected from the Mississippi River Project Design Flood (PDF). The Mississippi River mainline levees were first constructed by settlers at New Orleans in the early 1700’s. Federal construction of the Mississippi River mainline levees began shortly after the passage of the Flood Control Act of 1928 and has continued ever since. The Mississippi River mainline levees protect the lower Mississippi River valley against the PDF by confining flow to the leveed channel, except where it enters backwater areas, allowing the overflow of several levees designed to overtop and fill tributary basins, or diverting flow into four project floodway areas. The mainline levee system, comprised of levees, floodwalls, and various control structures, is approximately 1,610 miles long.

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1.5.3. Widespread public support exists for the protection of environmental resources and for flood control along the Mississippi River. Throughout history, special emphasis has been placed on the construction and maintenance of channel training devices such as levees. The flood control plan of the MR&T project is designed to control the Mississippi River PDF, which is a theoretical flood greater than the great flood of 1927. The comprehensive flood control plan includes several features that protect a large part of the alluvial valley from the Project Design Flood, with a major element of this plan being levees for the containment of flood flows.

2. ALTERNATIVES TO THE PROPOSED ACTION.

2.1. ALTERNATIVE 1 – FUTURE WITHOUT PROJECT CONDITION (NO ACTION).

2.1.1. Without the proposed improvements to the designated levee reaches there exists an increased risk of possible damage to the east bank Mississippi River mainline levees during high river periods typically ranging from early March to June as well as during hurricane season beginning in June and lasting until mid-November. Failure of the levee system in this area would be catastrophic to the local populace and ecosystem.

2.2 ALTERNATIVE 2 – RELIEF WELLS WITH LOCAL DRAINAGE IMPROVEMENTS FOR REACHES 3, 4, 5 AND 7A.

2.2.1 This alternative is similar to the proposed action, but in reaches 3, 5 and 7a drainage would be routed to local drainage ditches instead of pumping the drainage back over the levee. The existing drainage would not support the additional flow without channel improvements. These improvements would involve impacts to private property as well as Waters of the U.S. (including wetlands). The wetlands that would be impacted are typically high quality bottomland hardwoods (BLH). A wetland delineation was accomplished in these local drainages, but the exact acreage of wetland impact was not calculated as a design alternative was not finalized once a less environmentally damaging practicable alternative (i.e. pump over the levee) was deemed feasible. Therefore, this alternative it is removed from further consideration because it impacted a substantial amount of wetlands and there is a practicable alternative with less environmental impact.

2.2.2 Reach 4 requires local drainage improvements because pumping the water from the passive relief wells back over the levee for this reach was not practicable. In reach 4, the pump over the levee option was not a viable solution due to geotechnical limitations. Since there is a stability berm on the protected side of the levee in reach four, the well heads could not be placed at a low enough elevation between the road and the levee. Therefore, the wells were moved to the land side of the road. The existing ground elevation in reach four has a factor of safety that is below the required value as set forth in EM 1110-2-1901 and subsequent DIVR 1110-1-400. Because of the existing conditions, excavation is prohibited near the well locations in reach four. Therefore to make a pump alternative work a containment area would have to be located a significant distance from the levee. This would require the water be channeled to the containment area then

pumped back over the levee traversing the road (under or over the road). This would greatly increase risk of project failure and create maintenance issues for the local sponsor. Therefore, this alternative for reach 4 was not further evaluated.

3. AFFECTED ENVIRONMENT.

3.1. GENERAL DESCRIPTION.

3.1.1. ENVIRONMENTAL SETTING.

3.1.1.1. Pointe Coupee Parish is located within the Central Gulf Coastal Plain in coastal southeastern Louisiana.

3.1.1.2. The project area is located within the Mississippi River deltaic plain, with the Mississippi River acting as the primary influence on geomorphic processes in the delta region. The Mississippi River levees are designed to protect the alluvial valley against the project flood by confining flow between the levees with the exception of areas where it enters the natural backwater areas of is diverted purposely into floodway areas. The Mississippi River Mainline Levee System consists of levees and floodwalls along the river, floodways and control structures. The levee line on the west bank begins just south of Cape Girardeau, Missouri, and extends to Venice, Louisiana. On the east bank of the river, levees alternate with high bluffs to give protection from floods.

3.1.1.3. Floral communities in the project area consist primarily of hardwood forest. There are existing borrow pits in this area along with old crevasse scars that hold permanent water. Trees along the flood side portion of the MRL typically includes sweetgum, green ash, cottonwood, American elm, water oak, hackberry, sycamore, black willow and Chinese tallow. The dominant tree species located throughout the proposed sites are black willow, sugarberry and sycamore. Additionally, the project area has been documented to support numerous faunal species including swamp rabbit, raccoon, opossum, gray squirrel, fox squirrel and numerous species of birds, reptiles and fish.

3.1.2. DESCRIPTION OF THE WATERSHED.

3.1.2.1. A watershed is an area of land drained by a particular set of streams and rivers. There are 12 major watersheds within Louisiana (Figure 6). On a national scale, the Mississippi River has the third largest drainage basin in the world, exceeded in size only by the watersheds of the Amazon and Congo rivers. The entire Mississippi River basin covers more than 1,245,000 square miles and includes all or parts of 31 states and two Canadian provinces. Waters from as far east as New York and as far west as Montanan contribute to flows in the Lower Mississippi River Valley, which extends from Cairo, Illinois to Venice, Louisiana, and is where the proposed project is located.

3.1.2.2. The Lower Mississippi River Valley has approximately 35,000 square miles which are susceptible to river floodwater if not protected by levees. The Mississippi River divides the floodplain into large flood basins which are generally bounded by the bluffs of the valley wall on one side and the ridges of the river on the other. The western side of the river is comprised of the Arkansas/White, Atchafalaya, Red and St. Francis River basins. The eastern river basins include the Obion, Forked Deer, Big Black and Yazoo River basins. The Mississippi River mainline levee system within the New Orleans District boundaries in Louisiana extend along the Mississippi River west bank from the vicinity of Black Hawk, Louisiana, generally southward to the vicinity of Venice, Louisiana, and on the east bank from Baton Rouge, Louisiana to Bohemia, Louisiana encompassing over 500 miles of levee and associated infrastructure.

3.1.3. CLIMATE.

3.1.3.1. The climate of Pointe Coupee Parish is humid subtropical. Warm, moist southeasterly winds from the Gulf of Mexico prevail throughout most of the year, with occasional cool, dry fronts dominated by northeast high pressure systems. The influx of cold air occurs less frequently in autumn and only rarely in summer. Tropical storms and hurricanes are likely to affect the parish three out of every ten years, with severe storm damage approximately once every two or three decades. The majority of these occur between early June and November. Summer thunderstorms are common, and tornadoes strike occasionally. Average annual temperature in the area is 67° (F), with monthly temperatures varying from the mid-90°'s (F) in July and August, to the mid-30°'s (F) in January and February. Average annual precipitation is 57.0 inches, varying from a monthly average of 7.5 inches in July, to an average of 3.5 inches in October.

3.1.4. GEOLOGY.

3.1.4.1. The project area is located along the Mississippi River levee at approximately Mississippi River Mile 268, near Point Coupee, La. Natural ground elevation is approximately +35 feet and dominant physiographic features include the Mississippi River and its associated natural levee. The surface is composed of natural levee deposits that consist of fat and lean clays and are located between +45 and +13 feet in elevation. Beneath the natural levee deposits lie point bar deposits that are composed of lean clay, silt, silty sand, and sand and are found between +26 and -42 feet in elevation. Within the point bar deposit is a swale that consists of clays and silts, is located at station 2065+00, and is between +21 and -42 feet in elevation. A backswamp deposit consisting of fat and lean clay is located between +22 and 0 feet in elevation and between station 2050+00 and 2090+00. Below the point bar and backswamp deposits lie substratum deposits that are composed of massive homogenous silty sand, sand, and gravel and are found between -10 and -175 feet in elevation. Tertiary deposits are found beneath the substratum deposits and extend to an unknown depth. Tertiary deposits are composed of very stiff to hard oxidized clay and silt. The silts, silty sands, and sands in the point bar and substratum deposits are hydraulically connected to the Mississippi River. All elevations are in NAVD 88.

3.2. RELEVANT RESOURCES.

3.2.1. This section contains a description of relevant resources that could be impacted by the project. The important resources described in this section are those recognized by laws, executive orders, regulations, and other standards of National, state, or regional agencies and organizations; technical or scientific agencies, groups, or individuals; and the general public. Table 1 provides summary information of the institutional, technical, and public importance of these resources.

A wide selection of resources were initially considered and determined not to be affected by the project. Socioeconomic resources, including land use, population, transportation, oil and gas, environmental justice, community cohesion, desirable community growth, tax revenues, property values, public facilities and services, business activity and employment, and displacement of people, would not be affected by the proposed project. These resources would not be affected due to the location of the project and the minor nature of the proposed action. The project is located in a rural area with little development surrounding the project area. The proposed action would be consistent with existing land uses which are predominantly flood protection (existing levee), transportation, and cattle farming. The purpose of the proposed action is to increase the safety factor of the existing levee. Transportation would not be significantly affected by the proposed action as no effects to the existing public road are anticipated beyond normal usage. The proposed action would be constructed to minimize impacts to the existing cattle farm within the project area. The fences proposed to protect the proposed drainage in Reach 4 would also benefit the cattle farm by improving range control options. As the proposed action would primarily occur on existing levee and drainage ways, no prime or unique farmlands, as defined and protected by the Farmland Protection Policy Act, would be affected by the proposed project. The objectives of Executive Order 11988 (Floodplain Management) were considered; however, MVN has determined that floodplain impacts, if any, from the proposed action would be mainly positive due to local drainage improvements. Additionally, there is no practicable alternative for project construction outside the 100-year floodplain. No disproportionate impacts to children and or minority communities were identified as the proposed action is located in a rural setting with little development in the immediate project vicinity.

The following relevant resources are discussed in this EA: wetlands, wildlife, aquatic resources/fisheries, threatened and endangered species, water quality, air quality, historic and cultural resources, recreational resources, and visual resources (aesthetics).

Resource	Institutionally Important	Technically Important	Publicly Important
Wetlands	Clean Water Act of 1977, as amended; Executive Order 11990 of 1977, Protection of Wetlands; Coastal Zone Management Act of 1972, as amended; and the Estuary Protection Act of 1968., EO 11988, and Fish and Wildlife Coordination Act.	They provide necessary habitat for various species of plants, fish, and wildlife; they serve as ground water recharge areas; they provide storage areas for storm and flood waters; they serve as natural water filtration areas; they provide protection from wave action, erosion, and storm damage; and they provide various consumptive and non-consumptive recreational opportunities.	The high value the public places on the functions and values that wetlands provide. Environmental organizations and the public support the preservation of marshes.
Aquatic Resources/ Fisheries	Fish and Wildlife Coordination Act of 1958, as amended.	They are a critical element of many valuable freshwater and marine habitats; they are an indicator of the health of the various freshwater and marine habitats; and many species are important commercial resources.	The high priority that the public places on their esthetic, recreational, and commercial value.
Wildlife	Fish and Wildlife Coordination Act of 1958, as amended and the Migratory Bird Treaty Act of 1918	They are a critical element of many valuable aquatic and terrestrial habitats; they are an indicator of the health of various aquatic and terrestrial habitats; and many species are important commercial resources.	The high priority that the public places on their esthetic, recreational, and commercial value.
Threatened and Endangered Species	The Endangered Species Act of 1973, as amended; the Marine Mammal Protection Act of 1972; and the Bald Eagle Protection Act of 1940.	USACE, USFWS, NMFS, NRCS, USEPA, LDWF, and LADNR cooperate to protect these species. The status of such species provides an indication of the overall health of an ecosystem.	The public supports the preservation of rare or declining species and their habitats.

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Table 1: Relevant Resources			
Resource	Institutionally Important	Technically Important	Publicly Important
Historic and Cultural Resources	National Historic Preservation Act of 1966, as amended; the Native American Graves Protection and Repatriation Act of 1990; and the Archeological Resources Protection Act of 1979, as well as federal implementing regulations; additional statutory and regulatory requirements; other applicable cultural resource-related laws; and USACE policies and procedures	Cultural resources are finite and non-renewable resources that include, but are not limited to both prehistoric and historic archaeological sites, historic standing structures, landscapes, and other culturally valued aspects of the environment, as well as sociocultural attributes, such as social cohesion, social institutions, lifeways, religious practices, and other cultural institutions. Historic properties include districts, sites, buildings, structures, and objects included in or eligible for the National Register of Historic Places, and federal agencies are required to consider the effects of their actions on such properties.	Humans relate to their environment through their culture, and historic and cultural resources provide insights into ways of life, both past and present. The protection and enhancement of historic and cultural resources is in the best interest of the public, and federal agencies also have trust and treaty responsibilities to Tribes, which are partially fulfilled through the preservation and protection of trust resources and the consideration of potential effects on natural and cultural resources.
Recreation Resources	Federal Water Project Recreation Act of 1965 as amended and Land and Water Conservation Fund Act of 1965 as amended	Provide high economic value of to local, state, and national economies.	Public makes high demands on recreational areas. There is a high value that the public places on fishing, hunting, and boating, as measured by the large number of fishing and hunting licenses sold in Louisiana; and the large per-capita number of recreational boat registrations in Louisiana.
Aesthetics	USACE ER 1105-2-100, and National Environmental Policy Act of 1969, the Coastal Barrier Resources Act of 1990, Louisiana's National and Scenic Rivers Act of 1988, and the National and Local Scenic Byway Program.	Visual accessibility to unique combinations of geological, botanical, and cultural features that may be an asset to a study area. State and Federal agencies recognize the value of beaches and shore dunes.	Environmental organizations and the public support the preservation of natural pleasing vistas.
Air Quality	Clean Air Act of 1963, Louisiana Environmental Quality Act of 1983.	State and Federal agencies recognize the status of ambient air quality in relation to the NAAQS.	Virtually all citizens express a desire for clean air.
Water Quality	Clean Water Act of 1977, Fish and Wildlife Coordination Act, Coastal Zone Mgt Act of 1972, and La State & Local Coastal Resources Act of 1978.	USACE, USFWS, NMFS, NRCS, USEPA, and State DNR and wildlife/fishery offices recognize value of fisheries and good water quality. the national and state standards established to assess water quality	Environmental organizations and the public support the preservation of water quality and fishery resources and the desire for clean drinking water.

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3.2.3. WETLANDS.

3.2.3.1. General Existing Conditions. The project area contains bottomland hardwoods (BLH) and fresh water marsh. The BLH forests found in the project area occur primarily on the natural levees of the Mississippi River and along drainage ditches. Dominant vegetation may include sugarberry, live oak, Nuttall oak, several pecan species, black willow, American elm, Drummond red maple, Chinese tallow-tree, boxelder, green ash and elderberry. Minor amounts of fresh water marsh may occur along the fringes of ponds, lakes, sloughs, and drainage ditches. Due to agriculture and urban development and construction of the MRT system, the hydrology of most of the area has been altered with varying degrees of loss to wetland functions and values. Agriculture and urban development have resulted in the construction of a drainage system that has been in operation for many years.

Wetlands (i.e., bottomland hardwoods and fresh marsh) within the study area provide plant detritus to adjacent waters and thereby contribute to the production of commercially and recreationally important fishes. Wetlands in the project area also provide valuable water quality functions such as reduction of excessive dissolved nutrient levels, filtering of waterborne contaminants, and removal of suspended sediment.

Wetlands within the project area are generally composed of BLH and fresh marsh. The BLH areas comprise 3.6 acres of riparian habitat found along degraded ditches traversing a cow pasture. The cattle have free access to these riparian areas and have significantly altered the natural characteristics of the BLH. A wetlands value assessment was conducted for these riparian areas with the findings presented in Section 6 below. The 4.9 acres of fresh marsh are found primarily at two locations within the project area. The first is a natural drain near River Road at the northern end of the project site (1.81 ac). The second is found along the ditch traversing the cow pasture toward the middle of the project area (3.09 ac). Both areas are functional fresh marshes; however, both are open to grazing by cattle at the existing farm.

Other waters of the U.S. present consist of three ditches. Ditch one is presently an intermittent drainage ditch 0.81 miles in length that traverses roughly north – south across the existing cattle pasture. Ditch one joins into a larger ditch and travels 0.14 miles before reaching Bayou Pond. Bayou Pond forms the 1.24 mile southern boundary of the proposed project area. Bayou Pond is technically a natural drainage feature, but over the years extensive drainage improvements have resulted in a feature that more closely resembles a drainage ditch than a natural bayou. The “bayou” is severely incised and has a very small riparian zone in this reach. The cattle currently have unrestricted access to Bayou Pond. Due to these factors this environmental assessment will evaluate it as a drainage ditch because it has little resemblance to a natural feature at this point. A total of 2.19 miles of jurisdictional waters are present within the project area including Bayou Pond.

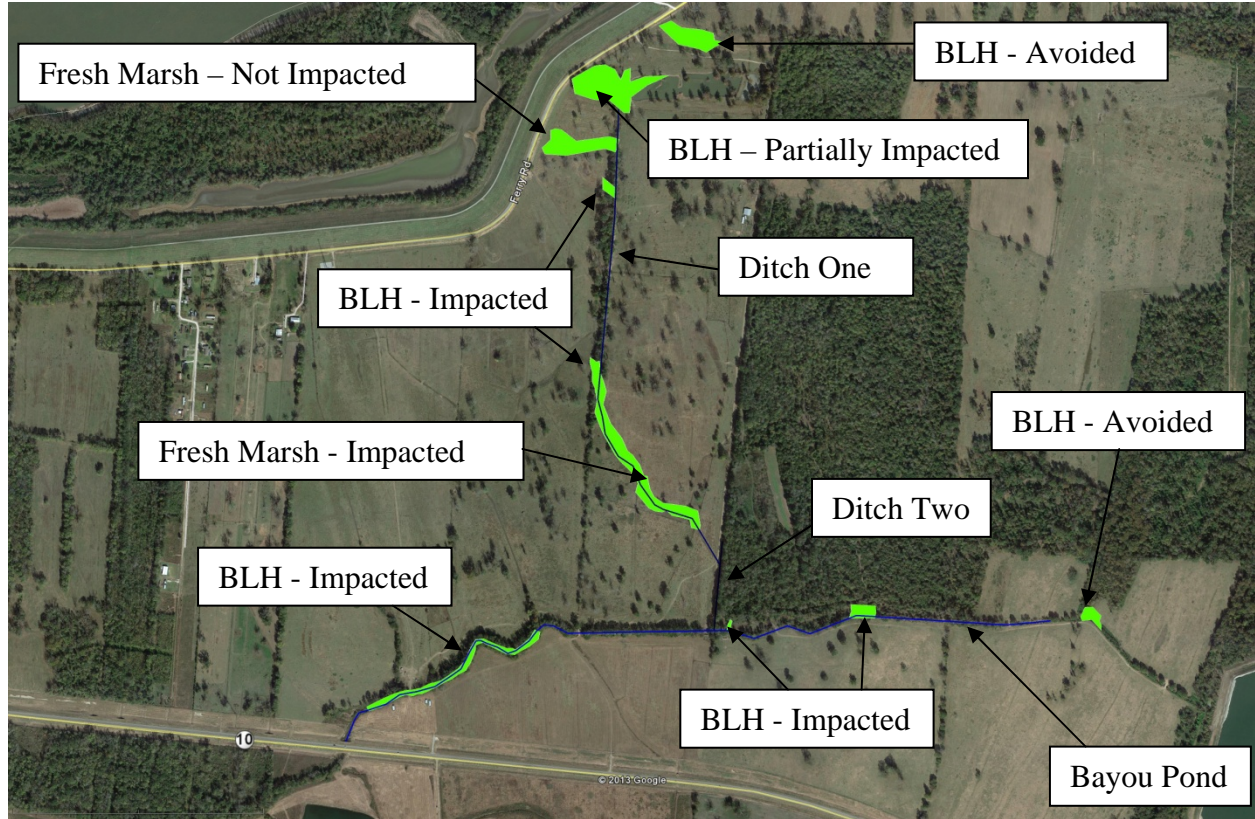


Figure 3: Waters of the U.S.

3.2.4. AQUATIC RESOURCES/FISHERIES.

3.2.4.1. General Existing Conditions. Aquatic habitat in the project vicinity is provided by the Mississippi River, adjacent borrow areas, and associated wetlands. The largest aquatic resource in proximity to project area is that portion of the main stem of the Mississippi River. This vast area is inherently low in primary productivity on a per acre basis because of high turbidity and has relatively poor benthic productivity because of shifting substrates and high current velocities in the area. The deep main river channel is the habitat of large predaceous fishes, some plankton feeders and a group of omnivorous species. The proposed action is located on the levee adjacent to the river.

Open-water habitat within the project area consists of the Mississippi River, previously excavated borrow pits, drainage canals, roadside ditches and False River, and an ox-bow lake. Most local drainage canals flow into False River. Drainage canals within the project area can become stagnant during low rainfall and low river periods. Runoff from developed areas has likely reduced the habitat value of that aquatic habitat by introducing various urban pollutants, such as oil, grease, and excessive nutrients. Agricultural clearing and development has

eliminated much of the riparian habitat that would normally provide shade and structure for many aquatic species.

Drainage ditches in the study area do not support significant fishery resources because of dense vegetation, poor water quality, and inadequate depth. Bayou Pond forms the southern boundary of the proposed project area. As mentioned above, the bayou is severely incised and has a very small riparian zone as it runs through the project area which happens to be a cattle pasture. The cattle currently have unrestricted access to Bayou Pond likely resulting in a degradation of water quality. No significant aquatic species were observed in the bayou during an onsite inspection. However, it is still possible that some freshwater sport fishes may potentially present in the project area. They could include largemouth bass, crappie, bluegill, redear sunfish, warmouth, channel catfish, and blue catfish. Other fishes potentially present include yellow bullhead, freshwater drum, bowfin, carp, buffalo, and gar.

False River is located downstream of the project area and is not located within the direct project area. It was designated a largemouth bass trophy lake in 1991 by the LDWF, however, in 1998 this status was rescinded because of poor bass production as a result of declining water quality.

3.2.4.2. Previously excavated borrow pits and overbank areas on the flood side of the existing MRL provide additional complexity of aquatic habitat for various species of wildlife, finfish, and shellfish. On the flood side, the higher plants around these water bodies are important primary producers in that a significant amount of leaf litter, branches, and other organic matter may wash into these lakes and borrow pits during high water conditions becoming a source of detritus. During annual high river season, typically from March – May, riverine aquatic resources (primarily fish) move onto the flooded river bank to take forage on detritus (rotting vegetation), insects, insect larvae, worms and various other food items. Some species use this high water period to spawn in the flooding areas. These are reasons why overbank areas are so important to riverine fisheries resources. These excavated pits and overbank areas are located on the flood side of the levee and are therefore not within the construction limits of the proposed action. However, they are included in this evaluation as they would receive water from the passive relief wells in Reaches 3, 5 and 7a. This would occur as the drainage from the wells in these reaches was pumped to the flood side of the levee.

3.2.4.4. Several man-made, roadside ditches are found within the project area. These ditches do not seasonally hold water and would therefore not be considered aquatic resources. These ditches do drain into the larger drainage canals traversing across an agricultural field.

3.2.5. WILDLIFE.

3.2.5.1. General Existing Conditions. Developed habitats in the study area include residential and commercial areas, as well as roads and existing levees. Those habitats do not support significant wildlife use. Agricultural lands occur throughout the area; agriculture includes sugarcane farming, cattle production, and haying. Some development in wetlands is also occurring as a result of permitted fill activities. Mammals that adapt in varying degrees to

periodically wet riparian or early successional hardwood habitat are likely to inhabit or frequent the project area. Beaver, raccoon, swamp rabbit, nutria, muskrat, gray squirrel, fox squirrel, opossum and white-tailed deer are likely present in the project vicinity. Forested habitats within the study area also provide habitat for many resident passerine birds and essential resting areas for many migratory songbirds including warblers, orioles, thrushes, vireos, tanagers, grosbeaks, buntings, flycatchers, and cuckoos. Many of these and other passerine birds have undergone a decline in population primarily due to habitat loss. The study area also supports resident hawks and owls including the red-shouldered hawk, barn owl, common screech owl, great horned owl, and barred owl. The red-tailed hawk, marsh hawk, and American kestrel are seasonal residents which utilize habitats within the study area. Amphibians such as the pig frog, bullfrog, leopard frog, cricket frog, and Gulf coast toad are expected to occur in the fresh and low salinity wetlands of the project area. Reptiles such as the American alligator, snapping turtle, softshell turtle, and red-eared turtle are also expected to occur in the project-area wetlands and waterbodies.

3.2.6. THREATENED AND ENDANGERED SPECIES.

3.2.6.1. General Existing Conditions. The U.S. Fish and Wildlife Service (USFWS) lists two threatened or endangered species that may occur in Pointe Coupee Parish and include, Louisiana Black bear and Pallid sturgeon.

3.2.6.2. The pallid sturgeon only occurs in large rivers within the Mississippi and Missouri River Basins from Montana to Louisiana. This includes the Mississippi River and Atchafalaya River in south Louisiana. Pallid sturgeon tend to select main channel habitats in the Mississippi River. Additional habitat descriptions state that the pallid sturgeon generally inhabits large, turbid, free-flowing riverine type environments with swift moving waters and rocky or sandy substrates (USFWS, 1990). The species is long-lived and spawning is believed to occur between June and August. Larval fish drift downstream from the hatching site and settle in the lower portion of the water column 11 to 17 days after hatching. Anthropogenic alterations to the Mississippi River such as bendway cutoffs, tributary impoundments and channel erosion have led to changes in deposition and erosion patterns potentially affecting pallid sturgeon populations. Pallid sturgeon are more frequently encountered in the Missouri and Atchafalaya rivers than in the Mississippi River, but are “nowhere common” (USACE, 1998). Habitat decline for this species has been attributed to channelization of rivers and construction of reservoirs that ultimately reduce the amount of turbidity in the water, which is vital for the pallid sturgeon not only for feeding areas but also spawning habitat. As stated in the 1998 biological assessment included in the 1998 FSEIS, pallid sturgeon generally avoid shallow water and inhabit thalwegs with hard-packed, sandy substrate, and channels of relatively low slope. In the spring of 2008, during extreme high water on the Mississippi River, pallid sturgeon were captured in the flooded bank of the Mississippi River upstream from the project area near river mile 128. Prior to this time, it was not well documented that pallid sturgeon utilized flooded riverbank areas. Whether the sturgeon were feeding, spawning or both in this flooded river bank was not determined. In 2007, researchers from the USACE Engineer Research and Development Center captured pallid sturgeon in the Mississippi River as far downstream as the Gramercy

Bridge at river mile 145. In December 2008, the same researchers captured a single pallid sturgeon next to the Mississippi River Bridge in New Orleans. Prior efforts to collect pallid sturgeon below New Orleans were unsuccessful, but the possibility exists that pallid sturgeon occur in the Mississippi River adjacent to the proposed levee work.

The Louisiana black bear prefers large expanses of forested wetlands where it can forage on soft and hard mast. Black bears occur in the Tensas River Basin, the Upper Atchafalaya River Basin, and coastal St. Mary and Iberia Parishes. Black bears could be found within BLH forests near the project. However, the proposed construction area was not designated as part of Unit-2 of Louisiana black bear critical habitat by the USFWS in 2009. Field investigations by a USACE biologist in March 2012 determined the project area to be poorly suited for the Louisiana black bear. During the investigation, no candidate or actual den trees were observed, few hard mast trees were observed, and ground denning was found to be unlikely due to the lack of understory. Reaches 3, 5 and 7 of the project are located on an existing levee which is routinely mowed; therefore, there is a very low likelihood of use by black bear. Reach 4 does contain bottomland hardwoods, but the habitat is a primarily a very small riparian area along an existing ditches. This area is traversing an existing cow pasture. It is very unlikely that a bear would utilize this area. The cattle would perceive the bear as a threat and harass the bear until it left the area. This area is located outside critical habitat unit 2 (Figure 4).

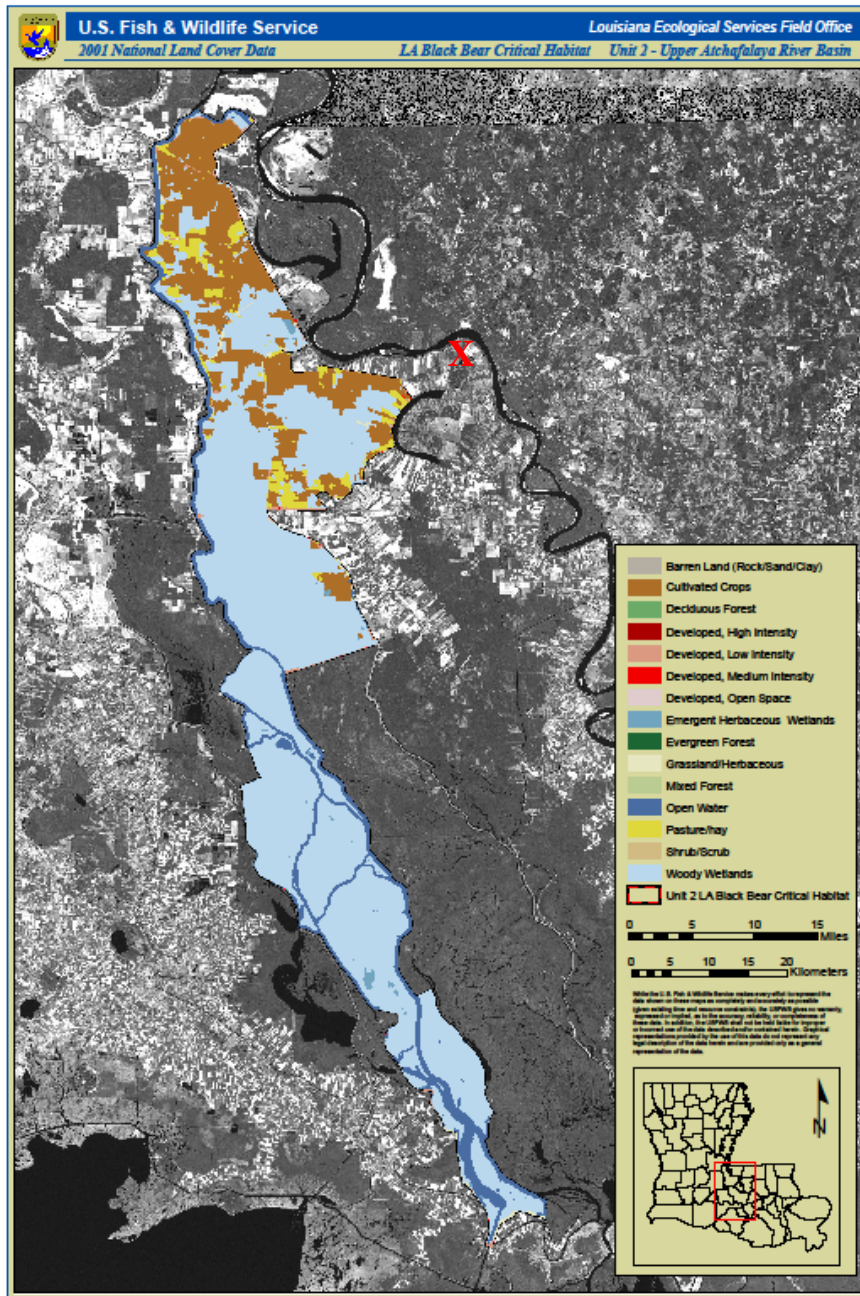


Figure 4: Unit 2 Black Bear Critical Habitat

3.2.6.3. Bald eagles are no longer protected under the Endangered Species Act, but are protected by the Bald and Golden Eagle Protection Act. Therefore, they will be given specific consideration in this EA. Bald eagles are common in Louisiana throughout the fall and winter months. The bald eagle is primarily riparian, associated with coasts, rivers, and lakes, usually nesting near bodies of water where it feeds. Selection of nesting sites varies depending on the species of trees growing in a particular area. In Louisiana, nests are usually constructed in living

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bald cypress trees, but bald eagles will occasionally use dead ones. There are certain general elements which seem to be consistent among nest site selection. These include (1) the proximity of water (usually within one-half mile) and a clear flight path to a close point on the water; (2) the largest living tree in a span; and, (3) an open view of the surrounding area. The proximity of good perching trees may also be a factor in site selection. An otherwise suitable site may not be used if there is excessive human activity in the area. Bald eagle wintering areas possess many of the same characteristics as nest sites. The birds, however, are not as closely limited to shores at this time, with both adults and immature gathering food where it is most easily available. No bald eagle nests are known to exist near the project area.

3.2.7. HISTORIC AND CULTURAL RESOURCES.

3.2.7.1. General Existing Conditions. The area of potential effects (APE) is located on the right descending bank of the Mississippi River from approximate river mile 268 to 267 above head of passes, just downriver from the community of Pointe Coupee, in Pointe Coupee Parish, Louisiana, and includes both natural levee and backswamp deposits. The APE for the proposed undertaking is located in Sections 21, 22, 23, 24, 25, 81, 82, 83, 84 and 85 Township 4 South, Range 10. The APE for Reaches 3, 5, and 7a is located within the existing right-of-way of the Mississippi River levee. The APE for Reach 4 includes 28.91 acres outside of the existing levee right-of-way.

A Phase I cultural resources investigation was completed for the proposed undertaking, and approximately 539.5 acres were surveyed for archaeological sites and standing structures. The results of the Phase I cultural resources investigation was provided to CEMVN in a management summary titled, "Management Summary: Phase I Cultural Resources Survey of the Pointe Coupee Seepage Project, Pointe Coupee Parish, Louisiana" (Wells 2013).

Seven archaeological sites (16PC110, 16PC111, 16PC112, 16PC113, 16PC114, 16PC115, 16PC116) were recorded during the survey. Six of the sites were early twentieth century tenant scatters with little to no integrity or research value, and they are not considered eligible for the National Register of Historic Places (NRHP). Site 16PC110, the early to mid-nineteenth century Bouvard Sugar Mill yielded intact masonry features and is considered potentially eligible for the NRHP. Site 16PC110 is not located within the APE, and the proposed undertaking will have no impact on this site, and no further work is recommended. Site 16PC115 falls within the boundaries of the previously recorded site 16PC54, as recorded in the SHPO GIS database. The location of site 16PC54 was recorded in 1983 by John Paige of the National Park Service, based on what he thought to be the location of the early eighteenth-century French settlement of Pointe Coupee. No fieldwork had been conducted at the site within its state-recorded boundaries, and the UTM coordinates of the center of site 16PC54 lay approximately 400 m southwest of site 16PC115; however, map overlaps made by Coastal Environments, Inc. for the Phase I investigation show that this settlement was much closer to the center of the modern Mississippi River channel than to the APE. Furthermore, artifacts recovered from 16PC115 in no way resemble an eighteenth century colonial French assemblage.

Three standing structures were recorded during the survey, including a circa 1920 double shotgun (39-00837), a set of machinery bases that may represent a second sugar mill dating from the early twentieth century (39-00838), and a dilapidated wood-framed agricultural shed (39-00839). None of these buildings are considered eligible for the NRHP, and no further work is necessary for these structures. Further examination of the property surrounding the machinery bases (39-00838) may yield an unrecorded sugar mill; however, the proposed undertaking will have no impact on this property.

No further cultural resources investigations are recommended for the proposed undertaking, and by letters dated July 1, 2013, CEMVN provided the Louisiana State Historic Preservation Officer (SHPO) and federally recognized Tribes with documentation of the finding of “no historic properties affected” for review and comment.

3.2.8. RECREATIONAL RESOURCES.

3.2.8.1. The Mississippi River is adjacent to the project area. Although used primarily by commercial vessels, there is the potential for recreational boats to use the waterway. People may also bank fish along the river edge. Residents living near the levee may walk on top of the levee. Otherwise, there are no recreation sites or facilities within the project area.

3.2.9. AESTHETICS (VISUAL RESOURCES).

3.2.9.1. General Existing Conditions. The dominant eco-region is the “Holocene Meander Belts” which is part of the Mississippi Alluvial Plain. The immediate study area is characteristic of the Holocene Meander Belts with relatively flat terrain mixed with a variety of water resources. The meander belt follows the Mississippi River all the way to the Gulf of Mexico. Relatively, higher elevations do occur near the Mississippi River where natural levee building is present. The other major water resource in the area is False Lake, a large oxbow lake, which lies well to the southwest of the project area. Vegetation in the study area is a mixture of native and non-native grasses, and dense hardwoods. Stands of forest work to frame large fields used for agriculture and hunting. Land use in the area is an even mix of undeveloped and rural lands, with a small pocket of residential development in the community of New Roads, located adjacent to False Lake. Overall access to the site is relatively limited, but does include State Highways 1, 10 and 415. User activity is relatively low in this region, and primarily relegated to agricultural, residential, tourism and recreational uses.

Scenic Byways in the area include the Louisiana Great River Road which traverses State Highways 1 and 10 and the Louisiana Scenic Bayou Byway which traverses State Highway 1. The Louisiana Great River Road enjoys both Federal and State Scenic Byway designations, as well as “All American Road” status. The Louisiana Scenic Bayou Byway has only the State designation. These byways are both publically and institutionally significant to the region and the nation. In order to achieve Scenic Byway status, these Scenic Byways must show significance in culture, history, recreation, archeology, aesthetics and tourism, which is found in abundance throughout the region. There are no major State or Federally protected lands in the

vicinity of the project area. Cat Island National Wildlife Refuge is located to the north of and across the Mississippi River from the area of work; but is well away from any potential impacts. There are no state recognized scenic streams in the vicinity of the project area.

3.2.10. AIR QUALITY.

3.2.10.1. General Existing Conditions. The U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, sets National Ambient Air Quality Standards (NAAQS) for six principal pollutants, called "criteria" pollutants. They are carbon monoxide, nitrogen dioxide, ozone, lead, particulates of 10 microns or less in size (Particulate Matter (PM)-10 and PM-2.5), and sulfur dioxide. Ozone, the only parameter not directly emitted into the air, forms in the atmosphere when three atoms of oxygen (O₃) are combined by a chemical reaction between oxides of nitrogen (NO_x) and volatile organic compounds (VOC) in the presence of sunlight. Motor vehicle exhaust and industrial emissions, gasoline vapors, and chemical solvents are some of the major sources of NO_x and VOC, also known as ozone precursors. Strong sunlight and hot weather can cause ground-level ozone to form in harmful concentrations in the air.

For Pointe Coupee Parish, all six parameters are currently in attainment of all NAAQS in accordance with 40 CFR 81.320 (1999 edition). No conformity review (under the Clean Air Act General Conformity Rule) is required for the proposed action because the project area is in attainment for ozone."

3.2.11. WATER QUALITY.

3.2.11.1. General Existing Conditions. Water quality in the project area is affected by both point source and non-point source discharges. Point sources include mainly industrial, municipal, and sewer discharges. Non-point sources include storm water runoff, industrial discharges, landscape maintenance activities, forestry, agriculture, and natural sources.

3.2.11.2. Section 303(d) of the Clean Water Act (CWA) requires states to identify waterbodies that are not meeting water quality standards and to develop total maximum daily loads (TMDLs) for those pollutants suspected of preventing the waterbodies from meeting their standards. TMDLs are the maximum amount of a given pollutant that can be discharged into a water body from all natural and anthropogenic sources including both point and non-point source discharges. In Louisiana, the Department of Environmental Quality (LDEQ) oversees the program.

3.2.11.3. The LDEQ surface water monitoring program is designed to measure progress towards achieving water quality goals at state and national levels, to gather baseline data used in establishing and reviewing the state water quality standards, and to provide a data base for use in determining the assimilative capacity of the waters of the state. Information is also used to establish permit limits for wastewater discharges. The program provides baseline data on a water body to monitor long-term trends in water quality.

3.2.11.4. The LDEQ Section 305(b) and 303(d) Reports for 2010, included in the Water Quality Inventory Integrated Report, lists one waterbody adjacent to the project area. The waterbody is in Sub-segment Code LA070301 and is described as Mississippi River – from Monte Sano Bayou to Head of Passes. Available LDEQ records indicate that prior to the 2004 Water Quality Inventory Report, suspected causes of impairment to the listed waterbody consisted of: mercury; nitrate/nitrite (nitrite + nitrate as N); pesticides; phosphorous; priority organics (including dioxin); and total fecal coliform.

3.2.11.5. In the 2004 report, testing of the aforementioned impairments indicated a status of attainment had been achieved for the listed waterbody. The status of attainment for the subject waterbody was reported to be the same following the completion of the 2010 report. The current water quality concerns associated with Sub segment Code LA070301 is “fully supporting all standards”. The 2006 US Environmental Protection Agency integrated report methodology guidance categories--which are used to categorize a water body / pollutant combinations--listed the LA070301 segment as an Integrated Report Category (IRC) 1. The IRC 1 description is listed as any water body impairment that was cited on a previous §303(d) list that is now in attainment of all uses and standards and fully support all designated uses.

3.2.11.6 Section 401 Water Quality Certification: The proposed action would impact Waters of the U.S. thus requiring a Section 401 Water Quality Certification from the State of Louisiana. An application has been prepared for submission to the Louisiana Department of Environmental Quality. This assessment would not be concluded until coordination has been completed.

3.2.11.7 Section 404 (b) (1): The proposed action would impact Waters of the U.S. thus requiring preparation of a 404(b)(1) report as specified in Section 404 of the Clean Water Act. A draft 404(b)(1) report has been prepared.

4. ENVIRONMENTAL CONSEQUENCES

4.1 WETLANDS

Future Conditions with No Action

Without implementation of the proposed action, no change to wetlands or other waters of the U.S. are anticipated.

Future Conditions with the Proposed Action

Executive Orders 11988 (Floodplain Management) and 11990 (Protection of Wetlands) were considered during the planning and evaluation of this project. In order to provide the necessary improvements to the flood damage reduction system, the project features must be sited in the flood plain. The proposed action would impact 3.6 acres of BLH and 3.09 acres of fresh water marsh. The project would impact 2.19 miles of other waters of the U.S. The impacts will be mitigated as specified in Section 6.0 below. Considering the impacts of the proposed action and

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the mitigation proposed, no significant direct, indirect or cumulative impacts to the local ecosystem are anticipated. Efforts were made to avoid and minimize impacts to waters of the U.S. to the maximum extent practicable.

These impacts will consist primarily of excavation except for a few culvert crossings. It is anticipated that the majority of the area will eventually revegetate resulting in short-term temporal impacts. All trees and large vegetation found within the right of way shown on the accompanying drawings (including BLH wetlands) will be mechanically removed to an approved disposal site or an upland portion of the project area. The drainage ways will be excavated to improve flow throughout the construction limits. All excavated material will be removed to an approved disposal area or utilized as fill for other project features. Excavated material will not be side cast into adjacent wetlands during construction. All work will be conducted from one side of the ditch when practicable to reduce impacts.

A newly proposed 60-foot wide culvert crossing would permanently impact 0.2 acres of the fresh marsh in the existing cow pasture. The remainder of the fresh marsh will be allowed to naturally revegetate. The large fresh marsh at the north end of the project area in Reach 4 will not be directly impacted. Drainage from the passive relief wells will be allowed to sheet flow across the wetland likely resulting in improvements to wetland hydrology.

Seven existing culverts will be replaced with minimal to no impact to waters of the U.S. The replaced crossing would be approximately twenty feet wide.

4.2 AQUATIC RESOURCES /FISHERIES

Future Conditions with No Action

Without implementation of the proposed action, no change to the aquatic resources in the project vicinity is expected to occur barring failure of the Mississippi River Levee.

Future Conditions with the Proposed Action

With implementation of the proposed action, no significant effects to aquatic or fishery resources are anticipated because no significant fishery resources are present within the project area. In any event, improvements to the existing drainage will increase water depths and flows which would benefit aquatic resources. Removing the riparian tree canopy would likely increase water temperatures during summer months. This may affect some species in the larger ditches on the southern portion of the Reach 4 project area. Those species would likely move down stream (immediately outside the project area) where temperatures would moderate rapidly once the riparian canopy returned. This insignificant affect would be mitigated by the improvement to water quality generated by fencing the cattle out of the drainage ditches.

4.3 WILDLIFE

Future Conditions with No Action

Without implementation of the proposed action, no change to the wildlife resources in the project vicinity is expected to occur.

Future Conditions with the Proposed Action

With implementation of the proposed action, no significant effects to wildlife would occur as the project is located in a previously developed area and will be designed and constructed to avoid impacts to wildlife. Any wildlife that may be present in the mowed and maintained levee right of way and adjacent cattle field is highly mobile and would simply utilize an adjacent stretch of levee or field during construction activities. The installation of the relief wells would have no long term effect on the utilization of the levee by the limited wildlife present within the existing right of way. Given the ditch marsh areas in Reach 4 will be allowed to revegetate, no long term effects to wildlife utilizing that area are anticipated. It is likely that the area will see increased utilization by wildlife once the existing livestock (cattle) are excluded from the drainage ditches. Accomplishment of mitigation for wetland impacts will result in a net increase for wildlife resources.

4.4 THREATENED AND ENDANGERED SPECIES

Future Conditions with No Action

Without implementation of the proposed action, no change to threatened or endangered species in the project vicinity is expected to occur.

Future Conditions with the Proposed Action

The USACE has determined that the proposed action would have no effect to listed threatened or endangered species or their critical habitat as the project area does not contain suitable habitat for listed species. Coordination under Section 7 of the Endangered Species Act has been initiated with the USFWS. This assessment would not be concluded until coordination has been completed.

4.5 HISTORIC AND CULTURAL RESOURCES

Future Conditions with No Action

Without implementation of the proposed action, no change to the historic or cultural resources in the project vicinity is expected to occur.

Future Conditions with the Proposed Action

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With implementation of the proposed action, no historic or cultural resources will be affected. A determination of “no historic properties affected” is currently being coordinated with the Louisiana SHPO and federally recognized Tribes with an interest in the MVN.

4.6 RECREATION RESOURCES

Future with No Action

Without implementation of the proposed action, the conditions within the recreational environment would continue as they have in the past and would be dictated by the natural land use patterns and processes that have dominated the area in the past.

Future with Proposed Action

Recreational uses such as walking on top of the levee or to the river for scenic views or bank fishing will be temporarily displaced during construction.

4.7 AESTHETICS

Future Conditions with No Action

Under the no action alternative, there would no impacts to visual resources within the study area. Visual resources would most likely evolve from existing conditions in a natural process, or change as dictated by future land use maintenance practices and policies. With this alternative, there are no foreseen cumulative impacts to visual resources in the study area. Any future changes or alterations to the study area would evolve in a natural process over the course of time, or by local land use patterns and maintenance practices. These incremental direct and indirect impacts would be in addition to the direct and indirect impacts of visual resources in the region, Louisiana and the Nation.

Future Conditions with the Proposed Action

In terms of public and institutional significance, the direct impacts to visual resources will be minimal throughout the study area. The study area is rural with limited access. Impacts to the Scenic Byways of the region will be minimal. Levees and the associated equipment, structures and other facilities that accompany them, are already a part of the landscape of South Louisiana.

In terms of technical significance, the introduction of manmade features will detract from the natural aesthetics of the area. The relief wells will be a stark contrast to the natural surroundings made up of grass covered levees and trees. The structures will be somewhat out of place and out of balance with their surroundings in terms of the design elements of form, line and texture. This should be taken in context with the existing, surrounding environment. However, it is important to note that the proposed features will work to save lives and property. Cumulative impacts would be the incremental direct and indirect impacts of implementing and operating the

proposed alternative on visual resources in addition to the direct and indirect impacts to visual resources by other previous, existing and authorized for restoration projects in the region, Louisiana, and the Nation. In this case, cumulative impacts would be minimal to negligible.

4.8 AIR QUALITY

Future Conditions with No Action

Without implementation of the proposed project, the status of attainment of air quality for Pointe Coupee Parish would not change from current conditions.

Future Conditions with the Proposed Action

With implementation of the proposed action, the ambient air quality in Pointe Coupee Parish would not noticeably change from current conditions, and the status of attainment for the parish would not be altered.

4.9 WATER QUALITY

Future Conditions with No Action

Without implementation of the proposed action, no change to water quality is anticipated.

Future Conditions with the Proposed Action

With implementation of the proposed action, impacts to water quality are expected to be minimal and limited to slight increase in turbidity during construction. A stormwater pollution prevention plan will be developed to minimize any potential effects to water quality during construction.

Impacts to wetlands and other waters of the U.S. will occur from implementation of the proposed action. Therefore a CWA, Section 404 evaluation has been prepared. The proposed action would impact Waters of the U.S. thus requiring a Section 401 Water Quality Certification from the State of Louisiana. An application has been prepared for submission to the Louisiana Department of Environmental Quality. Specifically the project will impact 6.69 acres of wetlands (3.6 acres of degraded bottomland hardwoods and 3.09 acres of fresh marsh). Additionally, 2.19 miles of jurisdictional ditches (including the degraded Bayou Pond) will be impacted. Impacts to linear features such as bottoms of drainage ditches will be mitigated through creation of aquatic habitat during the proposed construction. The proposed ditch will be fenced to prevent existing livestock (cattle) from entering and degrading the drainage ditches. The ditch bottoms will be allowed to naturally revegetate. Mitigation for impacts to bottomland hardwood wetlands and fresh marsh will accomplished by purchase of appropriate mitigation credits from an approved wetlands mitigation bank. Mitigation details are discussed further below in section 6.0.

4.10 HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE

The USACE is obligated under Engineer Regulation (ER) 1165-2-132 to assume responsibility for the reasonable identification and evaluation of all Hazardous, Toxic, and Radioactive Waste (HTRW) contamination within the vicinity of proposed actions. ER 1165-2-132 identifies that HTRW policy is to avoid the use of project funds for HTRW removal and remediation activities. An ASTM E 1527-05 Phase 1 Environmental Site Assessment (ESA), HTRW 13-07 dated June, 5 2013, has been completed for the project area. Two natural-gas pipelines were noted to be within the southern portion of the project area, and extreme caution shall be taken to prevent damage to or breakage of the pipelines during construction of the project. A copy of Phase 1 ESA will be maintained on file at the U.S. Army Corps of Engineers, New Orleans District Headquarters. The probability of encountering unknown HTRW for the proposed action is low based on the initial site assessment. If no recognized environmental conditions are identified in relation to the project site, the probability of encountering HTRW for this project will be considered low. If a recognized environmental condition is identified in relation to the project site, the U.S. Army Corps of Engineers, New Orleans District will take the necessary measures to avoid the recognized environmental condition so that the probability of encountering or disturbing HTRW would continue to be low.

4.11 CUMULATIVE IMPACTS

4.11.1. The Council on Environmental Quality's (CEQ) regulations (40 CFR 1500-1508) implementing the procedural provisions of the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.) define cumulative effects as "the impact on the environment which results from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions (40 CFR 1508.7)". Cumulative Effects can result from individually minor but collectively significant actions taking place over a period of time."

4.11.2. While the proposed action would result in minor impacts as previously noted, it is expected that no significant adverse cumulative impacts would occur as a result of implementation of the project. The direct, indirect, and cumulative impacts from associated projects listed in the Prior Reports Section were previously addressed. The discussions of potential cumulative impacts contained in the cited documents address projects similar to the proposed action and are consistent with the cumulative and indirect impacts anticipated from the proposed action.

4.11.3. Overall, the proposed action, in comparison to past, present, and reasonably foreseeable future actions, would not incrementally contribute adversely to the general project area. This

flood risk reduction feature is part of an overall comprehensive plan for the Mississippi River and Tributaries project. The preferred alternative would accomplish flood risk reduction objectives, which are of great importance in the Lower Mississippi Valley, and provide for the preservation and enhancement of the very significant fish, wildlife, and other natural resources of the basin. Installation of the relief wells in Pointe Coupee Parish would ensure the ability of the levee to prevent flood damage to the natural and human environment on the protected side of the levee. No significant secondary or indirect impacts were identified in association with the proposed action. The cumulative impacts of the proposed action are not expected to result in long-term adverse impacts.

5.0 COORDINATION

Preparation of this EA and draft Finding of No Significant Impact (FONSI) is being coordinated with appropriate Congressional, Federal, state, and local interests, as well as federally recognized Tribes, environmental groups and other interested parties.

U.S. Department of Interior, Fish and Wildlife Service
U.S. Environmental Protection Agency, Region VI
Natural Resources Conservation Service, State Conservationist
Advisory Council on Historic Preservation
Louisiana Department of Wildlife and Fisheries
Louisiana Department of Environmental Quality
Louisiana Historic Preservation Officer
Louisiana Department of Natural Resources

The USFWS provided the USACE a Fish and Wildlife Coordination Act Report dated May 30, 2013. Coordination under Section 7 of the Endangered Species Act has been initiated with the USFWS.

6.0 MITIGATION

The appropriate application of mitigation is to formulate an alternative that first avoids adverse impacts, then minimizes adverse impacts, and lastly, compensates for unavoidable impacts. After investigating all practicable alternatives for avoiding and reducing impacts from the proposed action, the following compensable mitigation would be conducted prior to or concurrently with the proposed action.

6.1 Construction activities (i.e., future with-project) in the cleared rights-of-way may displace wildlife (e.g., cattle egrets, killdeer, eastern cottontail) that use those areas. Those impacts, however, are not considered significant because they would be temporary during construction and other alternative open, grassy areas are abundant. The actual wells would be permanent in nature, but are consistent with the currently designated use for the area and would comprise a minimal amount of surface area verses the overall levee. Therefore, mitigation is not proposed

for impacts to this habitat type. Reaches 3, 5 and 7a will only be impacting this habitat type. Therefore no compensable mitigation is proposed in association with these reaches.

6.2 Reach 4 would impact approximately 26.6 acres of bottomland hardwoods. Of that acreage, approximately 23 acres are non-wet bottomland hardwoods and 3.6 acres are wet bottomland hardwoods . Approximately 3.09 acres of fresh marsh will be impacted in the existing cow pasture including a 60-foot wide culvert crossing resulting in a 0.2 acre permanent impact. The remaining 2.89 acres would be allowed to naturally revegetate. Allowing the fresh marsh and drainage ditches to naturally revegetate while precluding impacts from cattle, will result net gain of wetland functions and values and offset the impacts from the 0.2 acre marsh loss associated with the culvert crossing. The ditches located within the pasture will be fenced to prevent cattle from entering and degrading the banks. Crossing would be provided to allow access for vehicles and cattle to both side of the ditch. Impacts to the existing ditch bottoms (including Bayou Pond) and the fresh marsh would be mitigated by allowing the bottom of the new ditch to naturally revegetate and installation of fences along those ditches to exclude entry by existing livestock. In addition, where feasible, construction activities will be conducted from only one side of the ditch to minimize impacts. The temporal loss from the proposed action would be minimal as the fresh marsh would begin to immediately revegetate upon completion of construction. Impacts to BLH are discussed in greater detail below.

To quantify anticipated project impacts resulting from impacts to BLH, the Wetland Value Assessment (WVA) methodology was utilized to assess impacts the habitat quality and quantity. The site is measured for baseline conditions, and is projected for future without-project and future with-project conditions. The WVA utilizes a community-level evaluation that allows for a numeric comparison of each future condition, and provides an estimate of project-related effects on fish and wildlife resources.

The habitat unit is the basic unit of the WVA for measuring project effects on fish and wildlife. Habitat units are the product of a habitat suitability index (HSI) and the acreage of available habitat at a given target year. The HSI is derived from a mathematical model developed specifically for each wetland type; that model incorporates habitat variables important in characterizing fish and wildlife habitat

Habitat units fluctuate in response to changes in habitat quality (HSI) or quantity (acres); those changes are predicted for various target years over the period of analysis (i.e., 50 years), for future without-project and future with-project scenarios. Target years selected for this analysis were 0 (baseline), 1, 30, and 50. The products of the resulting HSI values and acreage estimates were then summed and annualized to determine the average annual habitat units (AAHUs) available for each habitat type. The net change (increase or decrease) in AAHUs under future with-project conditions, compared to future without-project conditions, provides a quantitative comparison of project impact/benefits that are expected to occur. An explanation of the assumptions affecting HSI values for each target year is available for review at this office.

Our analyses indicate that the loss of approximately 23 acres of non-wet bottomland hardwoods would result in the loss of 18.28 AAHUs and the loss of 3.6 acres of wet bottomland hardwood would result in the loss of 2.43 AHHUs.

All compensatory mitigation will be accomplished through purchase of credits from a Corps approved mitigation bank and will comply with the legal requirements laid out in the Mitigation Banking Instrument, Mitigation Work Plan, and other associated documents. The project is located within Hydrologic Unit Code (HUC) 08070300. Currently three mitigation banks have been established to service this HUC. Of those three banks, one currently has a 68 BLH credits available while the other two lack sufficient credits to service the proposed action at this time. Should mitigation credits be unavailable at time of construction, an alternative mitigation plan will be developed and coordinated with the relevant resource agencies prior to or concurrent with construction activities.

7.0 COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS

Environmental compliance for the proposed action would be achieved upon: coordination of this EA and draft FONSI with appropriate agencies, organizations, and individuals for their review and comments; USFWS confirmation that the proposed action would not be likely to adversely affect any endangered or threatened species; receipt of the SHPO concurrence with the USACE determination of “no historic properties affected;” and acceptance or resolution of all LDEQ comments on the air quality impact analysis documented in the EA. The draft FONSI will not be signed until the proposed action achieves environmental compliance with applicable laws and regulations, as described above.

8.0 CONCLUSION

This office has assessed the environmental impacts of the proposed action and has determined that the proposed action would have no adverse or beneficial impact upon historic or cultural resources, air quality, wetlands threatened or endangered species or any other identified resource once appropriate mitigation is implemented. There are no cumulative impacts, adverse or beneficial, associated with the proposed action.

9.0 PREPARED BY

EA # 522 and the associated draft FONSI were prepared by Howard Ladner, Biologist, with relevant sections prepared by: Joseph Musso - HTRW; Rebecca Hill- Cultural Resources; and Debbie Wright - Recreational Resources. The address of the preparers is: U.S. Army Corps of Engineers, Mississippi River Valley Regional Planning and Environment Division South, 7400 Leake Ave., New Orleans LA, 70118.

10.0 REFERENCES

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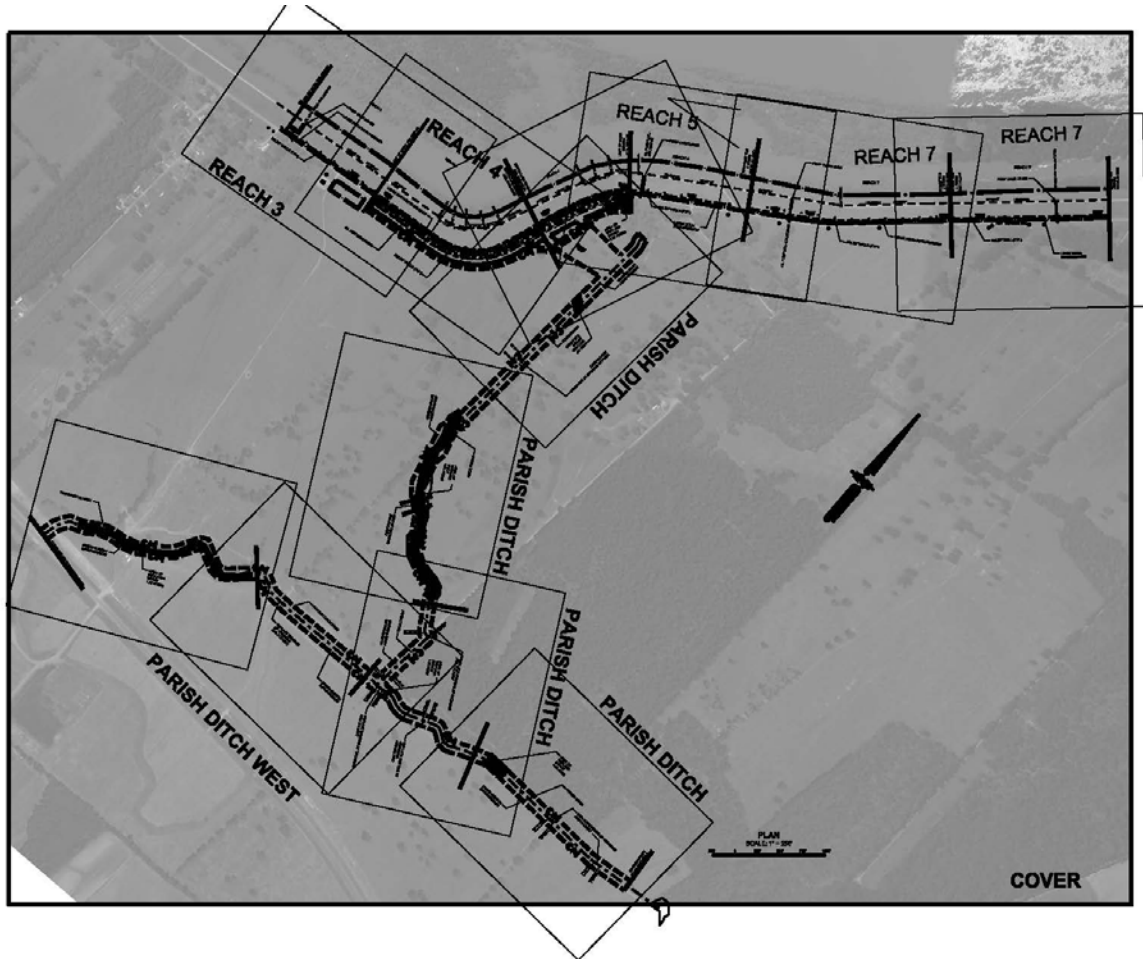
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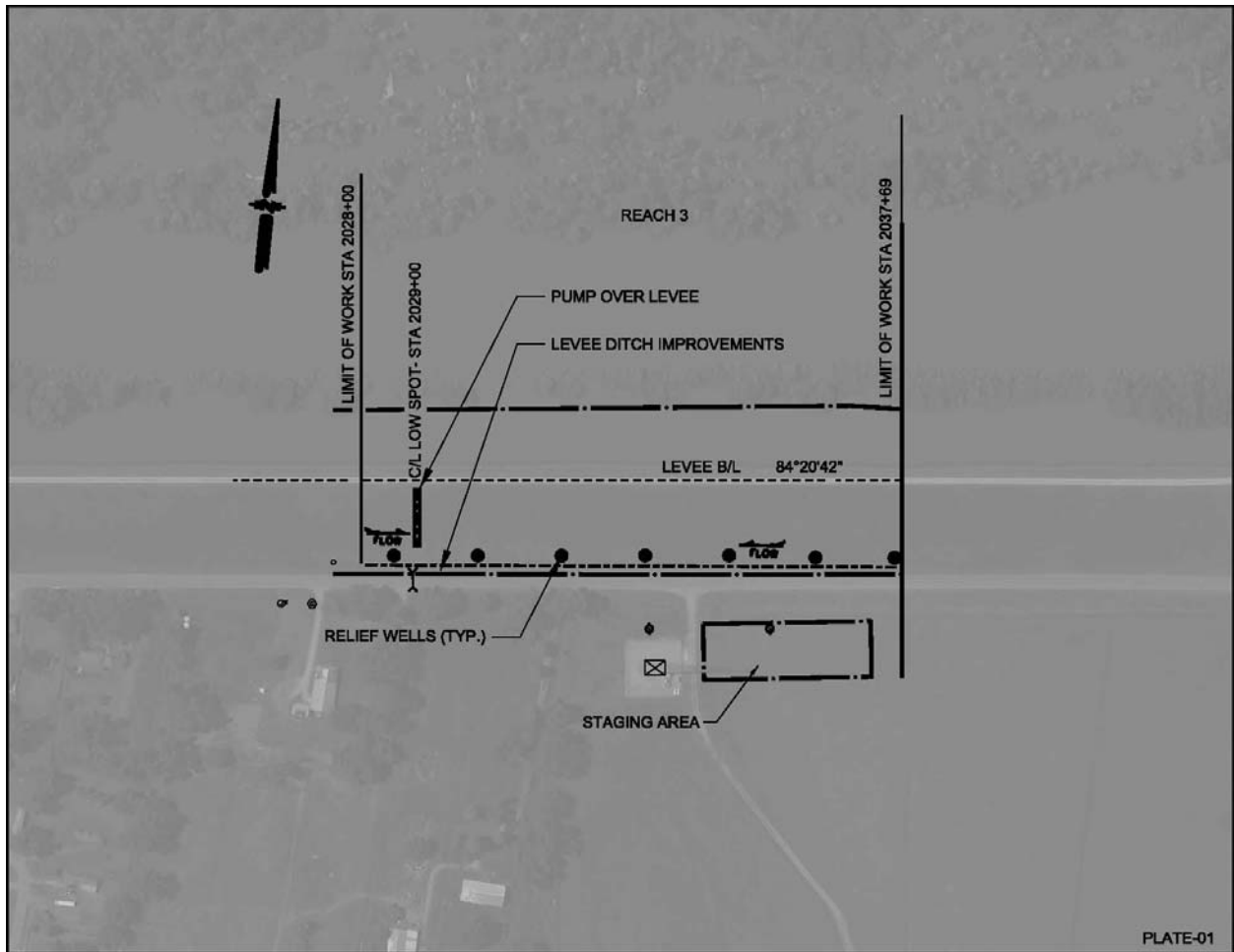
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Plates

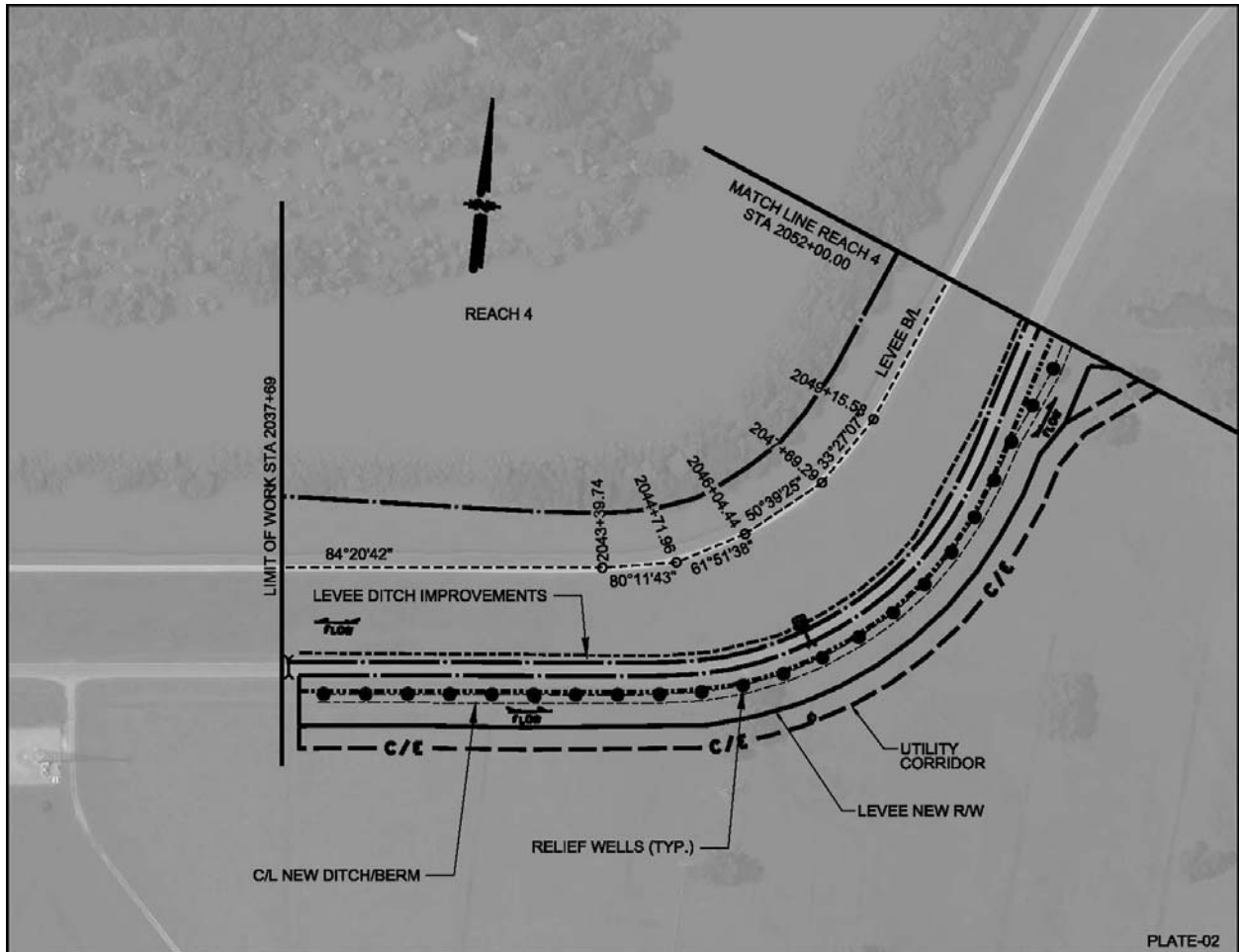
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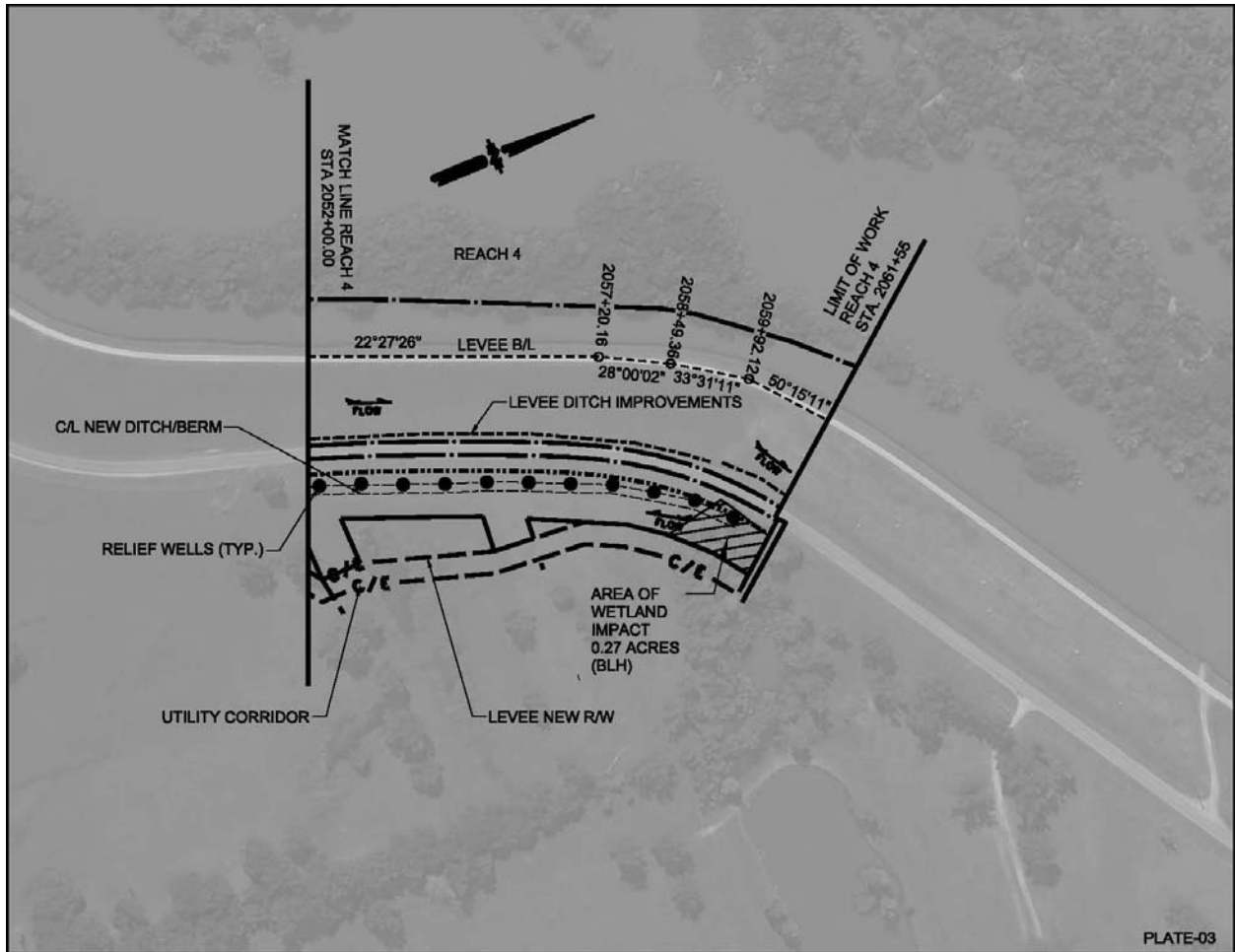
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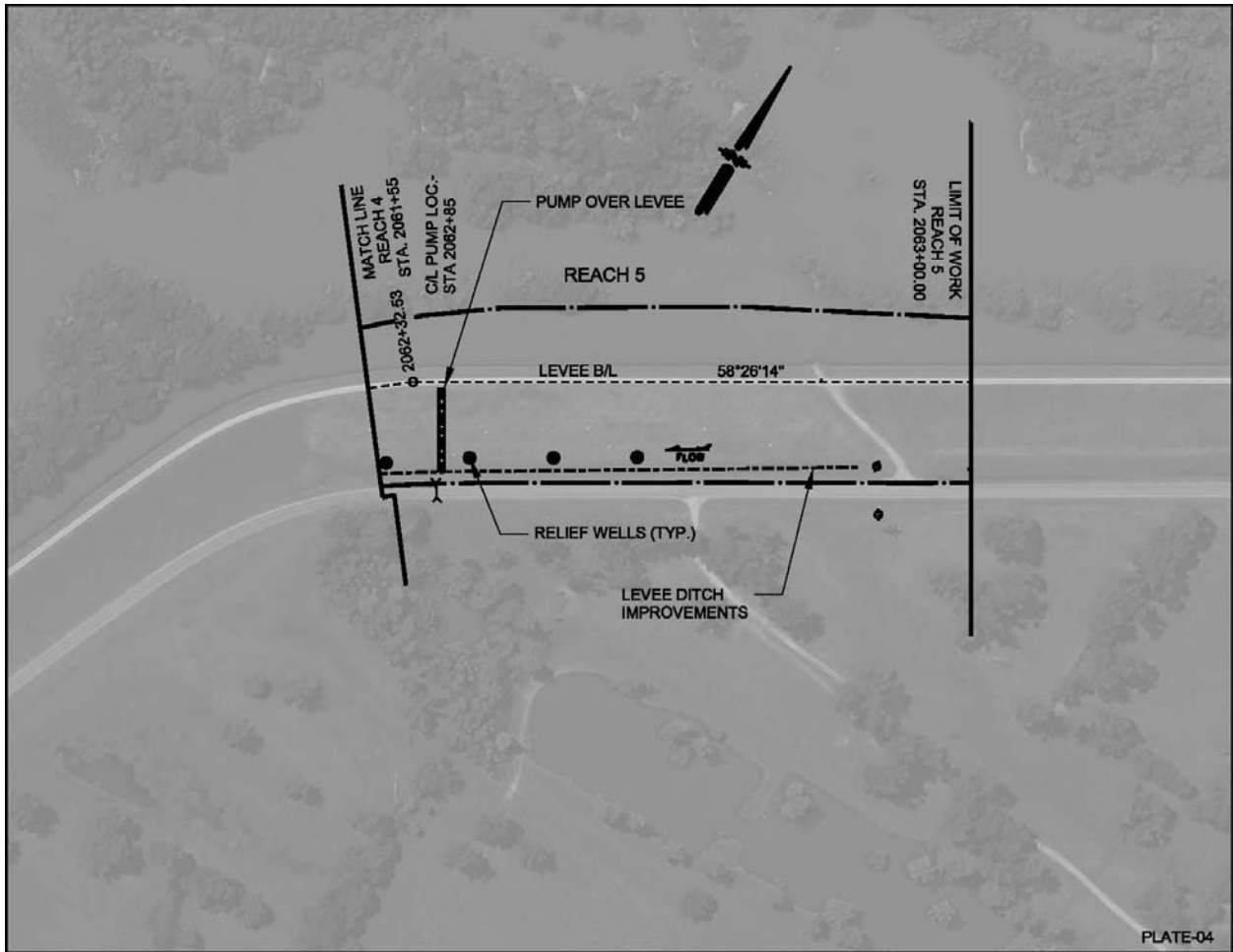
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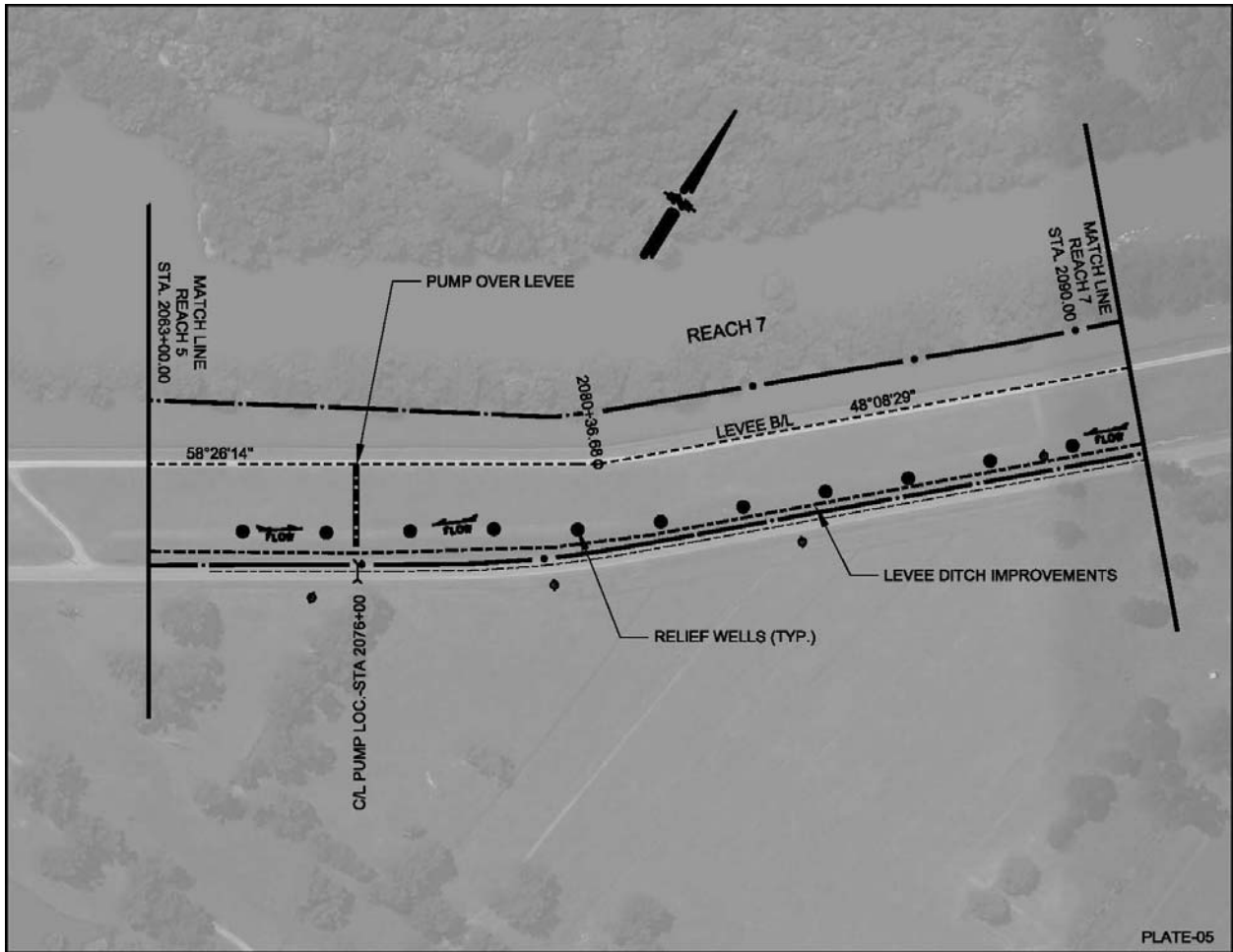
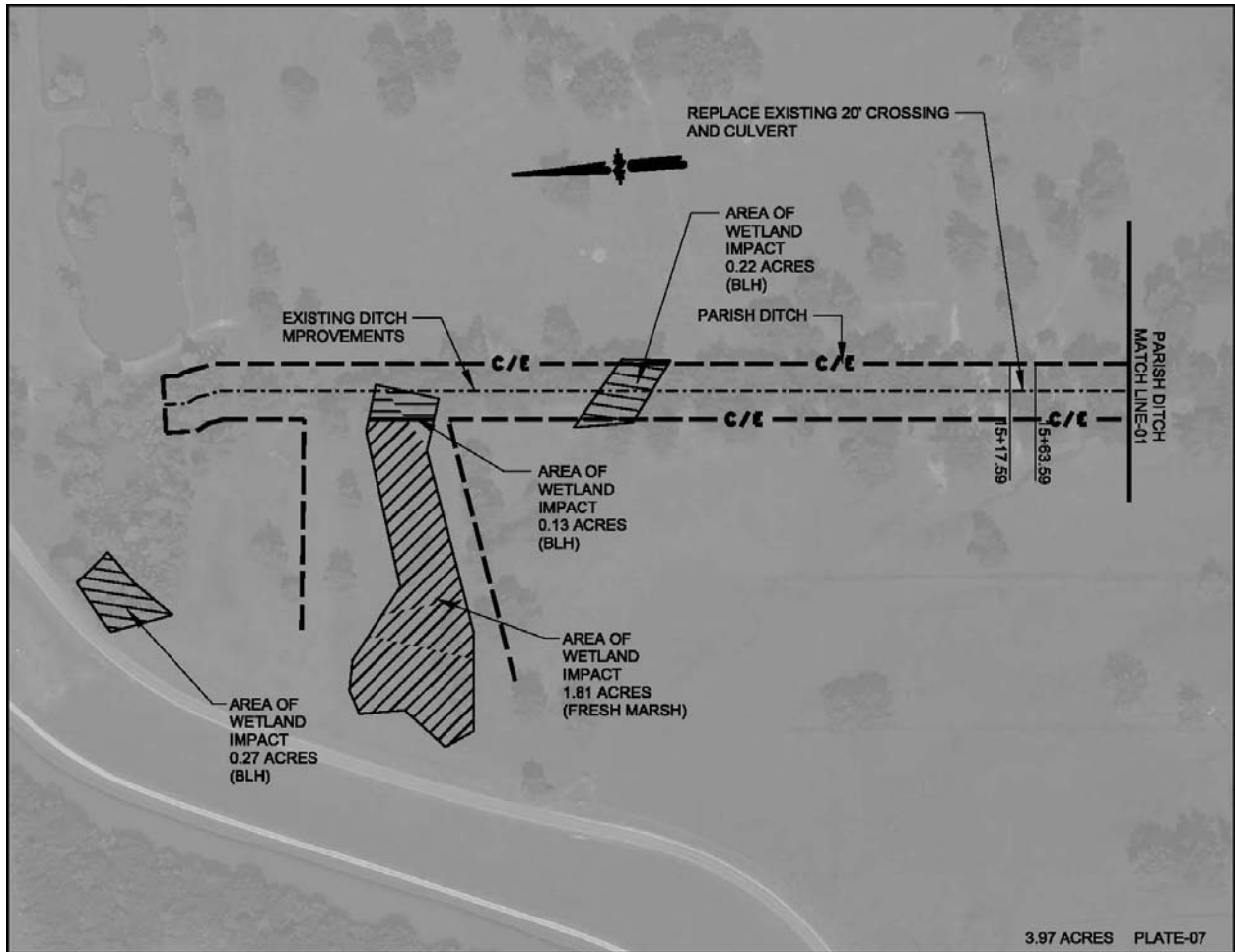


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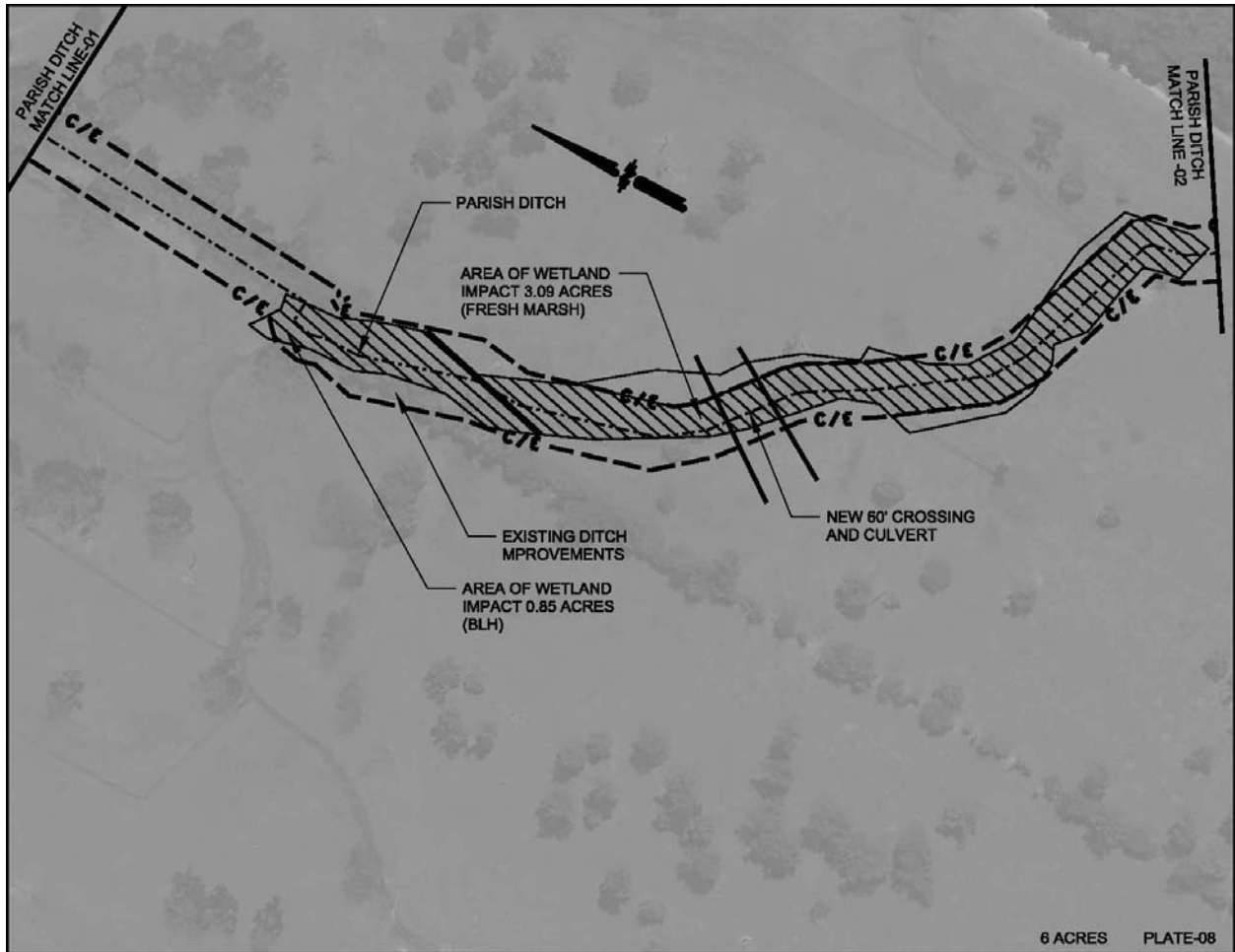
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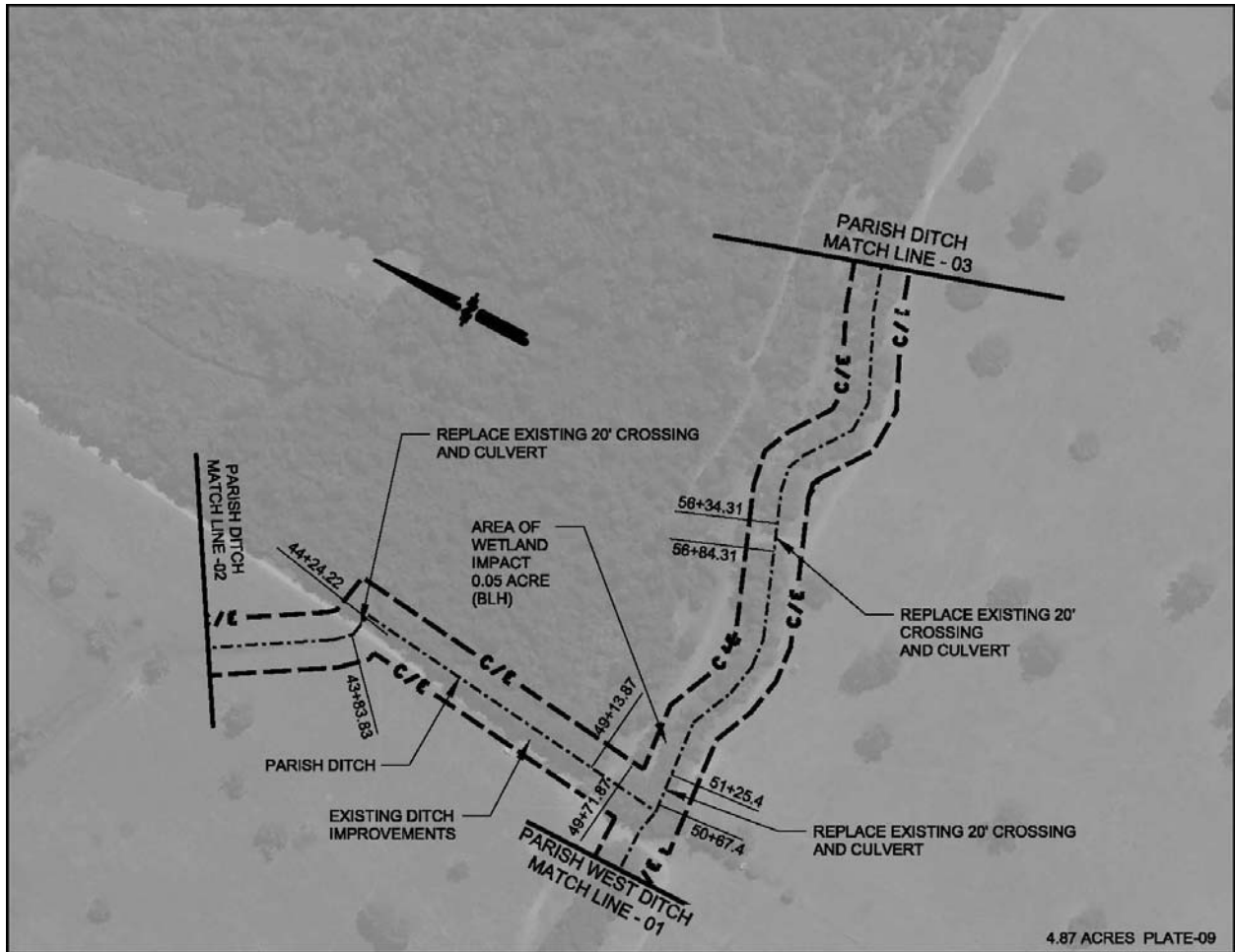
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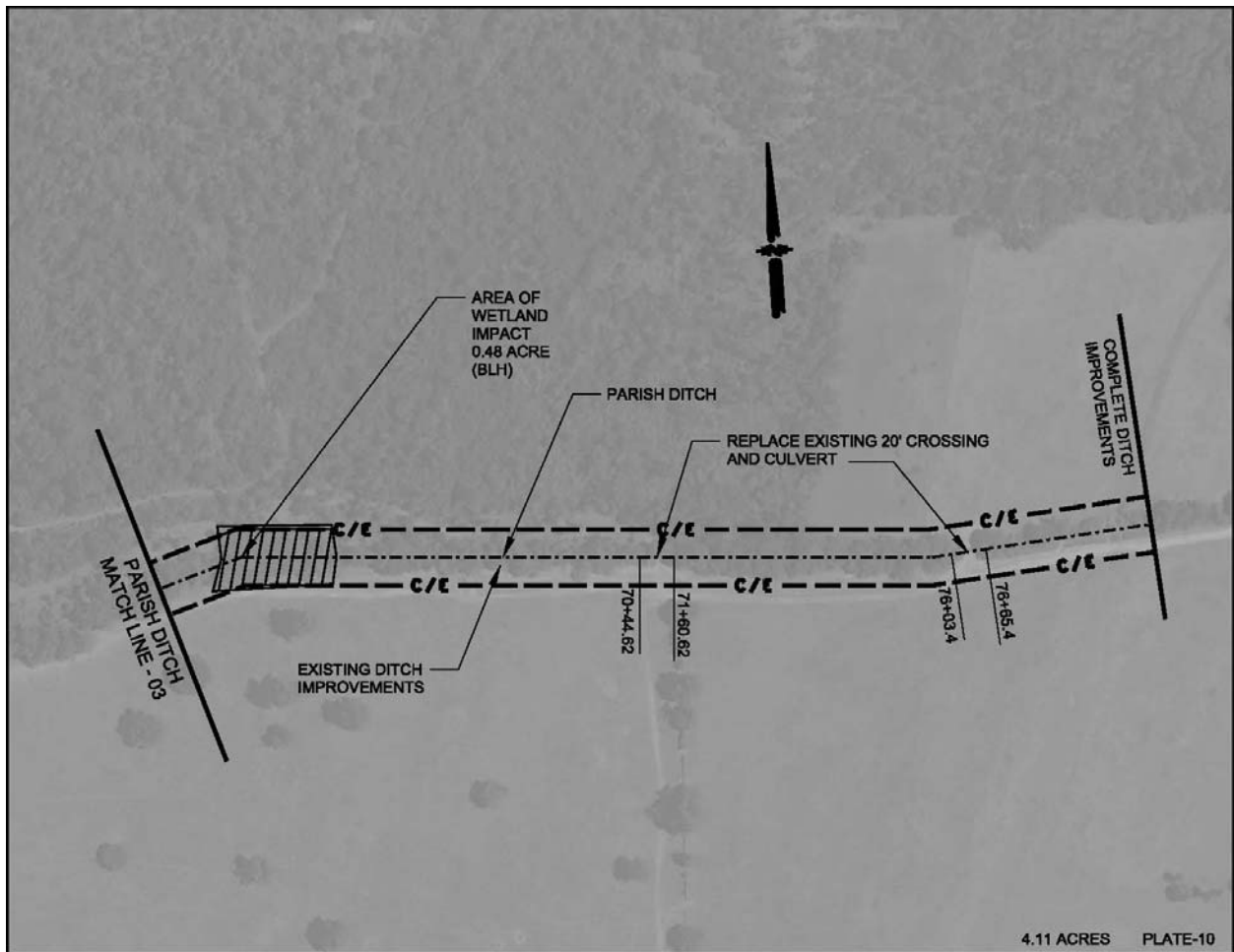
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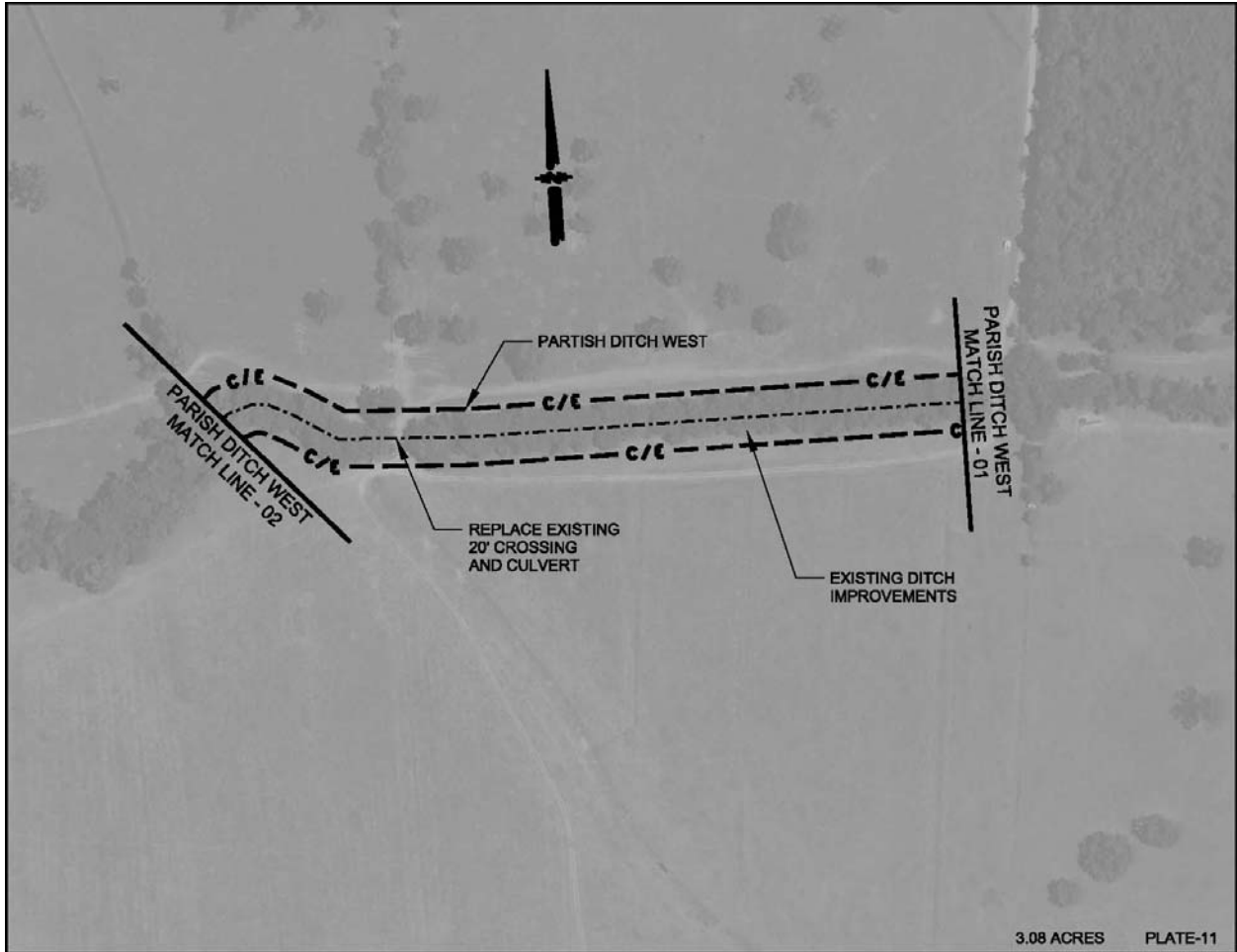
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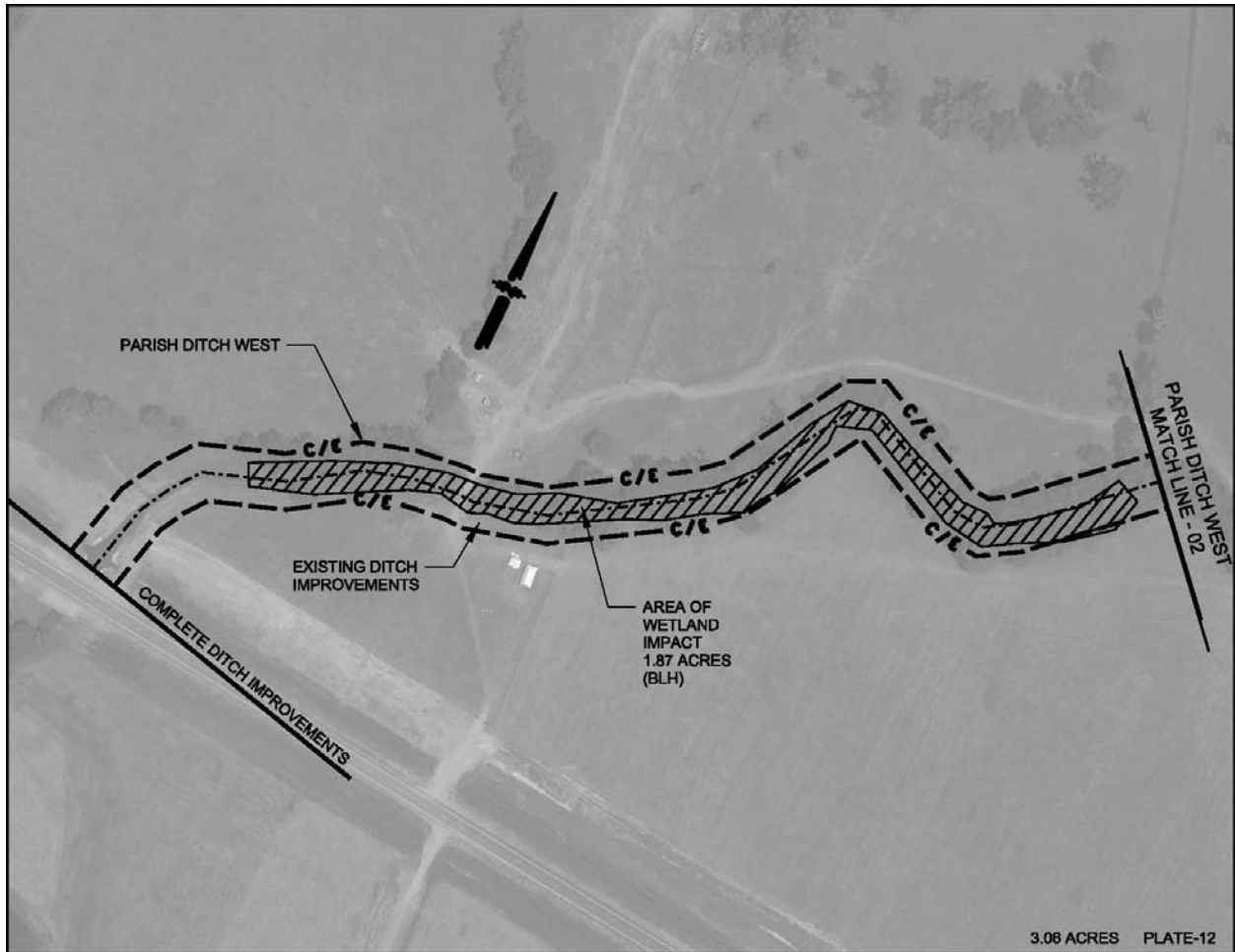
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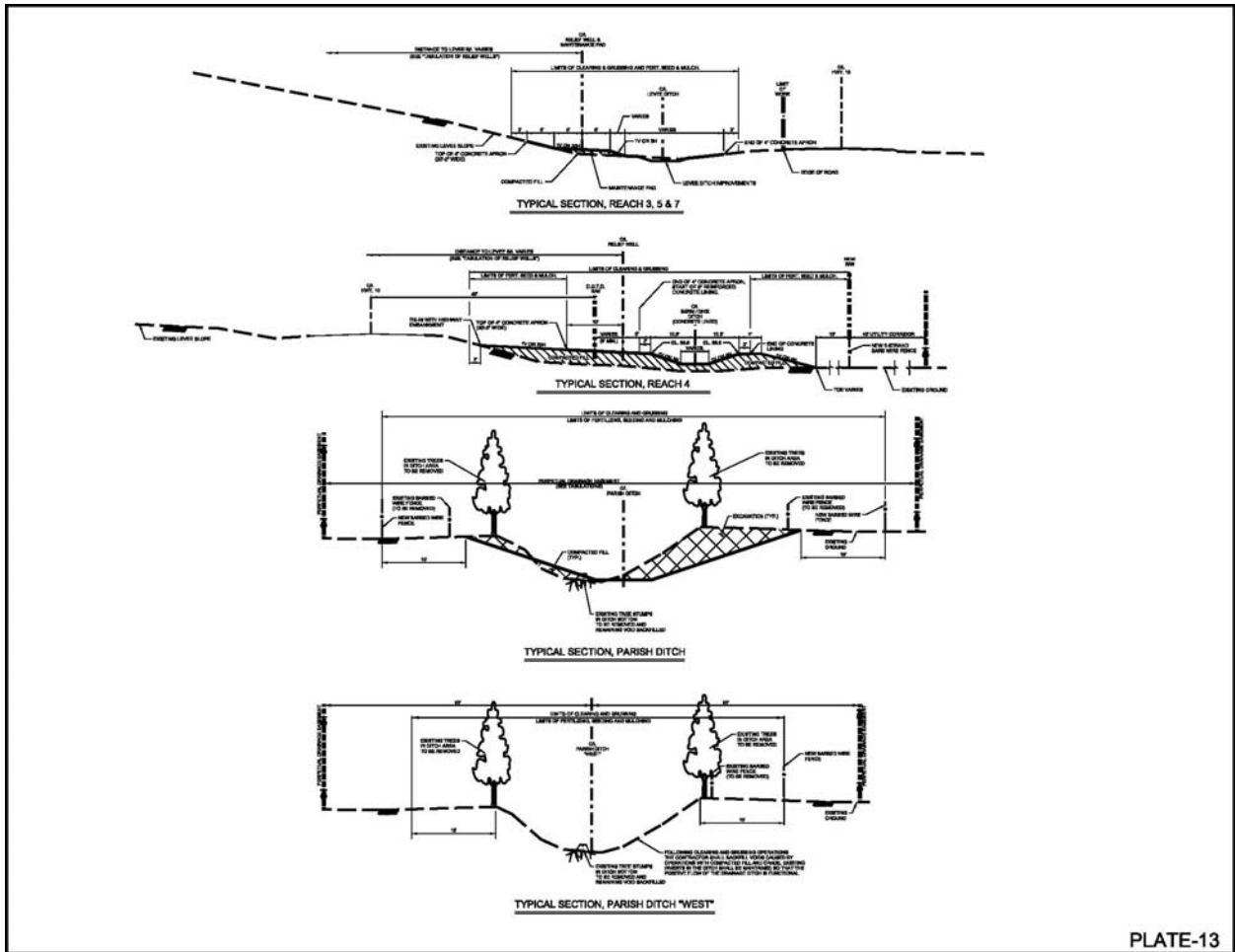


PLATE-13

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Photographs:



Ditch One



Ditch Two



Bayou Pond



Fresh Marsh in Pasture



Project Area for Reach 4

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Fresh Marsh – No excavation or fill in this area. Water will sheet flow across this area.



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Riparian area for ditch one (northern reach).



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Riparian area for ditch one (middle reach). No adjacent wetlands.



Riparian area for ditch one (southern reach).



Northern limit of ditch one near fresh marsh.



Taken from top of levee overlooking reach 4 project area.